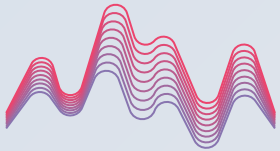

Voice Management During COVID-19

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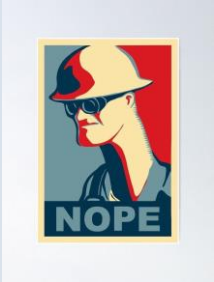
This Webinar



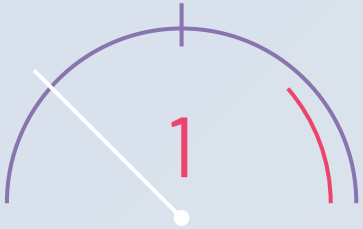
Is Not...

- About treating voice in COVID patients
- A one-stop shop of resources!

Is...

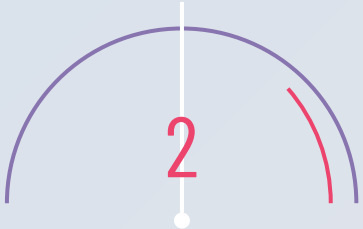
- Specific to managing voice caseloads at this time
- Mainly about telehealth

Roadmap



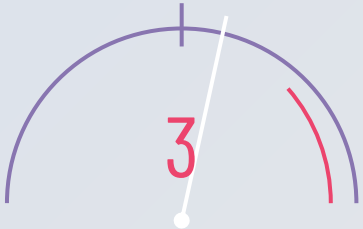
F2F vs Online

When should we use live sessions versus telehealth?



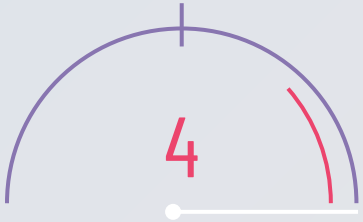
Science

How voice and computer science impact your session



Advice

Maximise your telehealth



Conclusion

Final thoughts

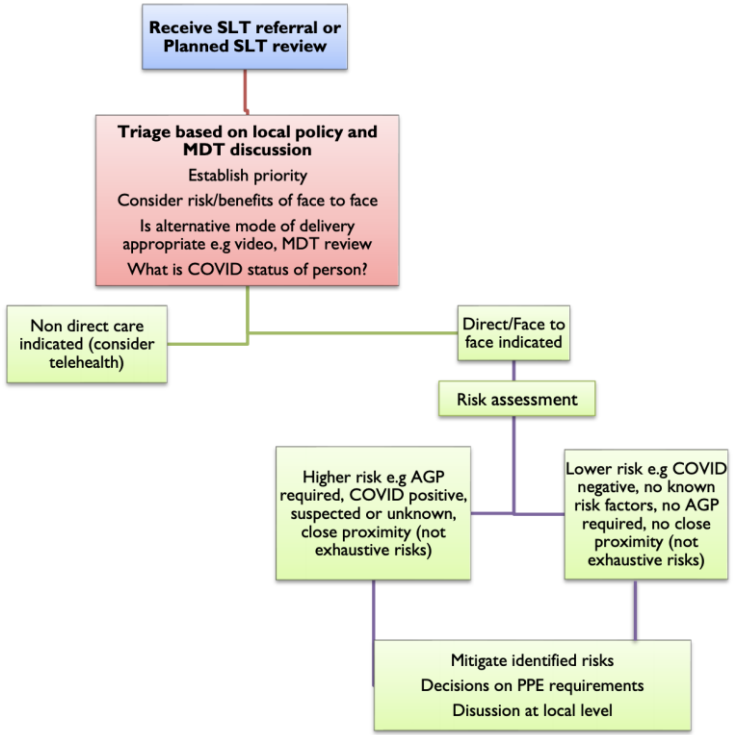
1

Face to Face

Online

F2F vs Online

Figure 1: Sample Triage Process for SLT interventions during COVID-19



Systems

Risk

Risk Category	Activity
Low	Telehealth, perceptual evaluation
Medium	Electroglottography, acoustic evaluation
High	Voice therapy, aerodynamic evaluation
Very high	Laryngoscopy

Castillo-Allendes et al. (2020)

Risk

↑Duration from Ax to therapy – dropout (Gustin et al., 2020)

Risk

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	Medium	High	Critical	Critical	Critical
Likely	Medium	High	High	Critical	Critical
Possible	Low	Medium	High	Critical	Critical
Unlikely	Low	Low	Medium	High	Critical
Rare	Low	Low	Medium	High	High

Preferences

Preferences

1. Set up the visit – establish client preference for F2F vs telehealth
2. Ensure client has capacity to join a telehealth session (equipment, knowledge)
3. Consider pre-visit check-in
    - Has client received all forms?
    - Did they get the link to join?
    - Consider a trial run
4. Carry out appointment

Strohl et al. (2020)

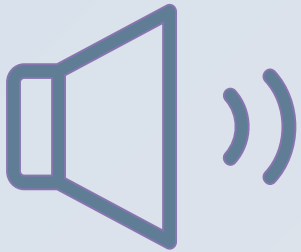
Efficacy

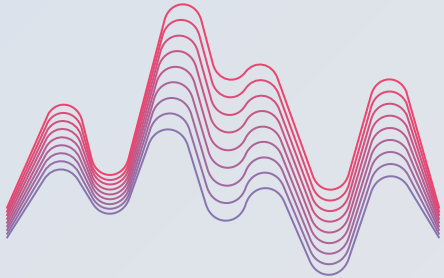
- Voice teletherapy works
- It works as well as F2F therapy
- Works for organic and functional problems
- Some clients prefer it
    - Especially trans/non-binary

Flannelly (2021)
Kalantzi (2020)
Kelchner (2013)
Mashima et al. (2003)

2

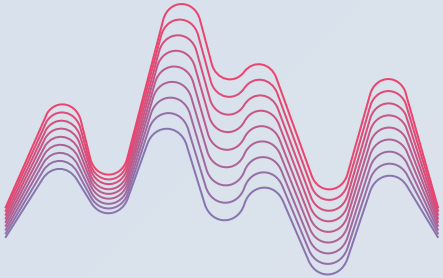
Science!



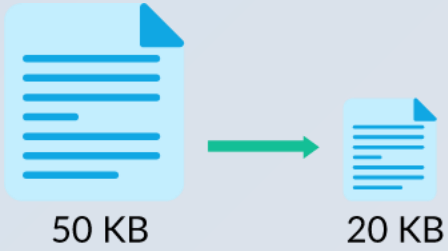


Voice Perception

Compression



Compression



Encryption

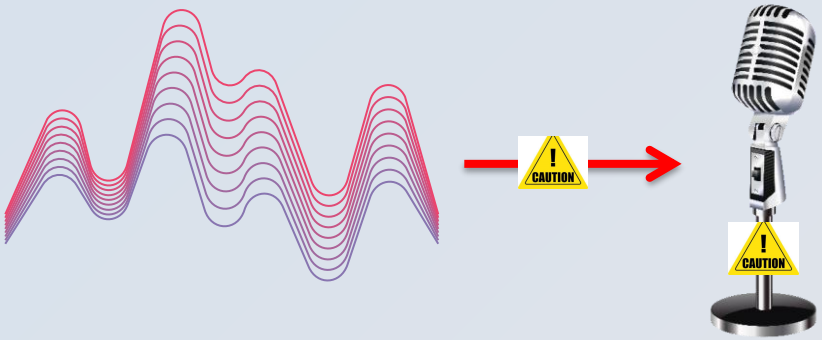
Password Protection

Encryption

3

Advice

Microphones



- **Type:** Free-standing vs computer vs headset vs webcam
- **Quality:** Pitch, loudness sensitivity
- **Distance:** Mic-to-mouth (15-30cm)
- **Axis:** Off-axis
- **Reliability:** Same setup each time - incl. room
- **Noise:** Reduce/eliminate background noise

Castillo-Allendes et al. (2020)
Cavalcanti et al. (2021)

Cell Yell

- Working from home → huge spike in incidence of dysphonia and vocal tract discomfort

  Kenny (2020)

- 'Cell yell' concept
  - Lack of 'side tone'

    Kisenwether & Anson (2019)

- Uncertain whether headsets vs hands-free vs in-built mic etc are more helpful – research underway!

- Encourage clients to at least self-monitor

Microphones

Synchronous

Asynchronous

- Voice samples reliable if:
  - High-quality phone
  - Uncompressed audio

Cavalcanti et a... 20)
di Natale (2019)

Voice Recorder App

Voice Recorder & Audio Editor
j labs

- Download yourself
- Change ”Default File Type” to .wav
- You can “share” your file via email
- Prepare instruction sheet for client
- Non-secure transmission! Consent!

Telehealth Platform

Telehealth Platform

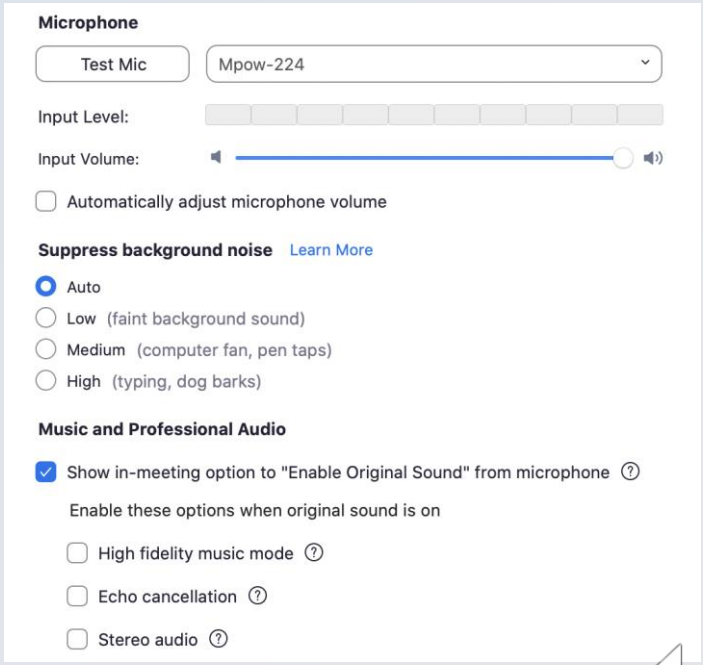
- These platforms offer 'helpful' features by default such as:
    - Echo cancellation
    - Background noise elimination
    - Automatic audio gain adjustment
- These distort our audio! We should turn them off!
- At the same time, don't forget that you also need good quality speakers/headphones

Zoom

TABLE 2.
Steps to Optimize Sound in Zoom—Can Be Completed by the Provider and/or the Patient

Step 1	Identify the ^ next to the Microphone on the Bottom Left of the Screen
Step 2	Click Audio Settings
Step 3	Uncheck the box next to 'Automatically Adjust Microphone Volume
Step 4	Click Advanced on the bottom right of the screen
Step 5	Check the box next to Show in-meeting option to "Enable original sound"
Step 6	Disable Suppress Persistent Background Noise and Suppress Intermittent Background Noise are set to
Step 7	Set Echo cancellation to Auto
Step 8	Close out the box and return to your home zoom screen.
Step 9	Click 'Turn on Original Sound' in the upper left-hand corner

Windows: Strohl et al. (2020)



Mac

Noise Adjustment

Task	Correction	No Correction
MPT		
Pitch glides		
Quiet voice (58dB)		
Rainbow Passage		

Zoom (original audio on)

Voice Recorder & Audio Editor

Encryption & Security

- Use waiting room to prevent “Zoom bombing”
- Double-check identity if the name on the account is different to what you expected

Client Position

Other Advice

- Their Privacy
  - Use a headset
  - Nobody else able to see session

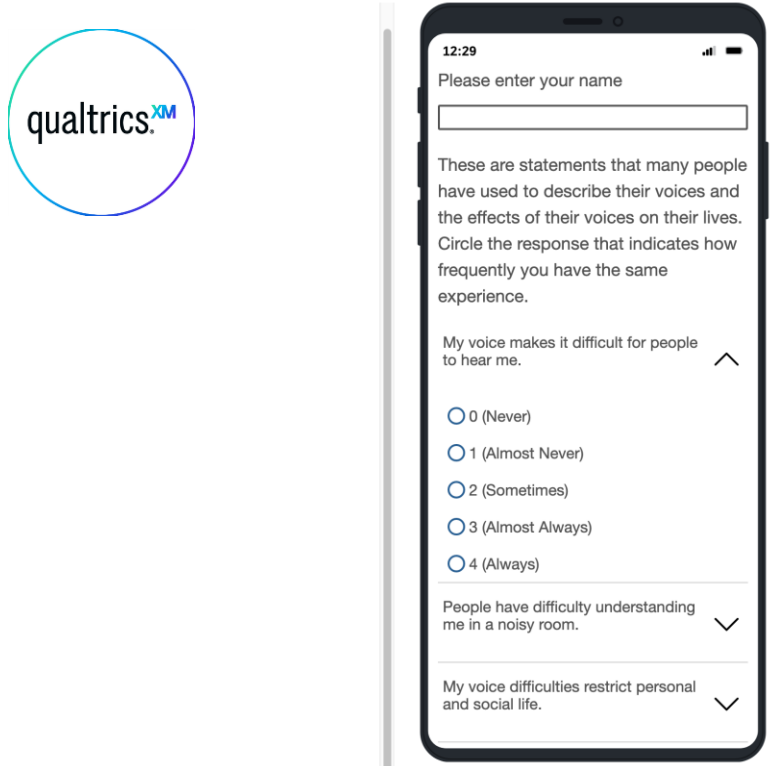
- Your Privacy
  - Your telehealth session is not an invitation for others to watch from behind
  - Be aware that telehealth lends itself to easy retention/distribution of data

Please enter your name

These are statements that many people have used to describe their voices and the effects of their voices on their lives. Circle the response that indicates how frequently you have the same experience.

	0 (Never)	1 (Almost Never)	2 (Sometimes)	3 (Almost Always)	4 (Always)
My voice makes it difficult for people to hear me.	○	○	○	○	○
People have difficulty understanding me in a noisy room.	○	○	○	○	○
My voice difficulties restrict personal and social life.	○	○	○	○	○
I feel left out of conversations because of my voice.	○	○	○	○	○
My voice problem causes me to lose income.	○	○	○	○	○
I feel as though I have to strain to produce voice.	○	○	○	○	○
The clarity of my voice is unpredictable.	○	○	○	○	○
My voice problem upsets me.	○	○	○	○	○
My voice makes me feel handicapped.	○	○	○	○	○
People ask, "What's wrong with your voice?"	○	○	○	○	○

Finish



Q3. Please enter your name

CK

Q5.
These are statements that many people have used to describe their voices and the effects of their voices on their lives. Circle the response that indicates how frequently you have the same experience.

	0 (Never)	1 (Almost Never)	2 (Sometimes)	3 (Almost Always)	4 (Always)
My voice makes it difficult for people to hear me.	◉	○	○	○	○
People have difficulty understanding me in a noisy room.	○	○	○	◉	○
My voice difficulties restrict personal and social life.	○	○	◉	○	○
I feel left out of conversations because of my voice.	○	○	◉	○	○
My voice problem causes me to lose income.	○	○	◉	○	○
I feel as though I have to strain to produce voice.	○	○	○	◉	○
The clarity of my voice is unpredictable.	○	○	◉	○	○
My voice problem upsets me.	○	○	○	◉	○
My voice makes me feel handicapped.	○	○	◉	○	○
People ask, “What’s wrong with your voice?”	○	○	○	◉	○

Scoring Results

Emotional

Mean Score:	5.00
Weighted Mean of Items:	2.50
Weighted Standard Deviation of Items:	0.71
Items:	2.00

Functional

Mean Score:	9.00
Weighted Mean of Items:	1.80
Weighted Standard Deviation of Items:	1.10
Items:	5.00

Overall Score

Mean Score:	22.00
Weighted Mean of Items:	2.20
Weighted Standard Deviation of Items:	0.92
Items:	10.00

Physical

Mean Score:	8.00
Weighted Mean of Items:	2.67
Weighted Standard Deviation of Items:	0.58
Items:	3.00

Teletherapy

- Keeping it interesting is hard – especially with children!
- Doarn et al. (2019): Interactive website delivering paediatric voice therapy online
    - Fully interactive with assessment, vocal hygiene advice, therapy, messaging
- My own videos: Video editing, using YouTube
    - Big advantage: Home practice– better technique, 'safe spaces' (Kalantzi 2020; Flannelly, 2021)
- Beware of distribution
    - Set videos to either *Private* or *Unlisted*
    - Ensure client knows they cannot share without permission
    - Consider having your name/details as a header/footer

4

Conclusion

Final Thoughts

- Teleassessment is not as robust or practical as live assessment, but there are risks to **not** assessing clients too: Just because it's not perfect doesn't mean you shouldn't do it!
- There are tips you can follow however to maximise reliability
- Using asynchronous assessment where necessary – even post-COVID!
- Teletherapy is quite feasible – home practice may in fact be easier
- Be mindful of the burden of telehealth:
    - Understanding systems to help problem-solve issues
    - Local policies and procedures, especially security-related
    - Client capabilities – send out instructions where necessary

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