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Regd. Under the Karnataka Societies Registration Act, Karnataka Act No, 17 Registration No. 25/67-68

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TELEPRACTICE GUIDELINES

FOR AUDIOLOGY AND SPEECH, LANGUAGE PATHOLOGY SERVICES IN INDIA

PREAMBLE

With the increased need to adopt telepractice in the recent times, the Indian Speech – Language and Hearing Association (ISHA) felt the need to develop 'Telepractice guidelines for audiology and speech, language pathology services in India'. Therefore, ISHA constituted a core committee to draft the guidelines.

At first, the core committee developed the draft guidelines with relevant information pertaining to operational and ethical aspects of telepractice. The committee members reviewed the existing literature on telepractice guidelines and ethical frameworks in India and in other parts of the world. As part of the second level of the guidelines development process, ISHA under the guidance of Chair, Profession, subjected the document to critical review by a group of experts. Comments provided by expert reviewers were addressed and appropriate changes were incorporated by the core committee. Subsequently, a third level process of finalizing the guidelines was undertaken by ISHA. As a part of this process, the revised draft was made available to all the members of ISHA for their comments and feedback. Based on this exercise, the annexure documents were prepared by the drafting committee to augment the guidelines as a practical reference for clinicians.

The final guideline and annexure is prepared with information as of October 2020. The document will be reviewed as warranted or in October 2023, whichever is earlier. The document will be placed in public domain in the ISHA website for the perusal of its members.

(Indranil Chatterjee)
Hon. Gen. Secretary

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TELEPRACTICE GUIDELINES FOR AUDIOLOGY AND SPEECH, LANGUAGE PATHOLOGY SERVICES IN INDIA

For audiologists and speech, language pathologists to provide clinical services using Information and Communication Technology

PREFACE

The need to use information and communication technology (ICT) to provide health care services is well recognised considering the stark contrast in demand versus capacity in our country (Hazarika, 2013) that still exists. Audiology and Speech-Language Pathology services are no exception. These technological solutions also provide a means to address the (re)habilitation needs of people with speech and hearing problems living in smaller towns who may not have access to such services. The potential for audiologists and speech language pathologists (ASLPs) to adopt telepractice in their clinical services in a variety of forms to bridge these gaps cannot be underestimated.

Research findings suggest the feasibility, validity and utility of telepractice in conducting various audiology tests (Swanepoel & Hall, 2010; Krumm & Vento, 2013; Regina Molini-Avejonas et al, 2015; Krumm, 2016; Tao et al, 2018). These include otoscopy, tympanometry, pure tone audiometry, otoacoustic emissions, and auditory brainstem responses and also rehabilitation of individuals with hearing loss with hearing aid or cochlear implants using remote fine tuning/mapping, troubleshooting and counselling. Similarly, there is considerable research that provides information regarding the scope and applications of telepractice in providing assessment and rehabilitation to individuals with various speech and language disorders (Coleman et al, 2015; Edwards et al, 2012; Houston et al, 2012; Ward et al, 2017; Keck & Doarn, 2014; Mashima & Doarn, 2008; Theodoros, 2011; Ward & Burns, 2014; Regina Molini-Avejonas et al, 2015). These include people with neurogenic communication disorders, childhood language disorders, articulation disorders, swallowing and voice disorders.

SCOPE

The purpose of this document is to provide guidelines for ASLPs in providing telepractice that are equal in standards to in-person services. These guidelines will also help to ensure safety and beneficence of both the professional and the client. While there are no legislative measures that govern telepractice in India, these guidelines will enable and foster judicious use of ICT for providing clinical services in audiology and speech, language pathology.

This document will details on operational aspects of telepractice such as work settings, facilitators, and their training, tools required including technological aspects, clinical and administrative aspects of telepractice. Guidelines for ethical considerations of telepractice including aspects of data privacy and protection, standard of care, informed consent is also suggested.

The guidelines do not include the following aspects of use of ICT in Audiology and Speech, Language Pathology:

1. Recommendations and considerations specific to test procedures and protocols
2. Disorder specific recommendations or considerations
3. Specific recommendations/adaptations of test equipment and accessories/ video-conferencing system hardware/ software, remote computing software, computer hardware and software and other peripherals
4. Specifications for the test space for audiological testing
5. Data management systems and its standards
6. Use of technology for educational purposes such as student training or supervision, transacting course contents, continuing education, professional advancements, research.

OPERATIONAL DEFINITIONS:

1. **Telepractice (with reference to ASLP)**: Telepractice is the provision of ICT based clinical services including screening, diagnostic and rehabilitative services in audiology and speech, language pathology by a professional

2. **Professional :** Audiologist or Speech-language Pathologist with minimum qualification of undergraduate degree in audiology and speech-language pathology, registered with RCI, who engages in providing ICT based clinical services

3. **Facilitator:** Personnel available at the client's location to assist the professional in delivering appropriate clinical services remotely. Facilitator executes their roles and responsibilities only under the guidance and supervision of a qualifiedprofessional.

4. **Client:** Recipients of ASLP services through telepractice

GUIDELINES

I. Operational aspects:

1. *Telepractice settings*

   Telepractice may be provided in settings including clinics, hospitals, homes, schools, NGOs or any other community-based work locations.

2. *Client site environment*

   The client site space selection must be based on room acoustics, adequate lighting, availability of suitable ICT infrastructure, and barrier free access. Care must be taken to ensure the comfort, safety, confidentiality, and privacy of clients during telepractice sessions. Ambient noise levels and visual distractions must be minimized.
   Optimal positioning of the client, camera, headsets, display monitors should be ensured.

Placement of assessment and therapy materials, testing equipment must be appropriate for remotely delivering clinical services.

For audiological testing, it must be ensured that ambient noise levels are within permissible limits, the test space is insulated from electrical interference and there is consistent and non-fluctuating power supply at the client site wherever applicable.

3. *Facilitators for telepractice*

A facilitator is a trained assistant who assists the professional in providing remote ASLP services including screening, diagnostics and rehabilitation. They may also assist in data documentation, record maintenance, maintenance of hygiene and infection control of test space and equipment at the client site.

Nurses, diploma in hearing language and speech (DHLS), social worker, parent/ caregiver, or any such personnel may serve as a facilitator.

The facilitator must be trained by the organisation/professional engaging in telepractice. It is preferable that the trainer is a professional with a minimum qualification of bachelor's degree in ASLP. The organisation/professional must establish competency requirements for the facilitator and provide suitable training.

It is recommended that the facilitator is trained in use of ICT, operating test equipment under the guidance of the professional, providing instructions to the client, maintenance and care of test equipment, hygiene and infection control measures, obtaining consent from patients, adherence to documentation requirement, basic troubleshooting of equipment, establishing internet connectivity. They must be familiar with their roles and responsibilities, and the standard operating protocol of the clinical service provided through telepractice.

4. *Tools for telepractice*

i. Computers/mobile phones/ tablets:
Telecommunication devices such as laptop/ desktop computers, smartphones and tablets along with its peripherals may be used for telepractice. The professional must ensure appropriate selection of devices based on client needs, clinical service requirements and test equipment to be connected. These devices must be routinely checked for optimum functioning.

ii. Telecommunication platform

a) Video conferencing software

Video conferencing can be accomplished using desktop or cloud-based software and dedicated videoconferencing hardware systems. It is recommended to use videoconferencing software that explicitly provides details regarding data encryption and data protection and privacy. Platforms available in public domain including Google hangouts/ Skype/Facetime/WhatsApp should be used with

caution as encryption of data is not explicitly known and therefore does not ensure patient data privacy. Clinicians may use the Ministry of Electronics and Information Technology's www.cert-in.org.in to be updated on cyber security guidelines/updates.

Selection of videoconferencing platform should be based on the bandwidth requirements, storage capacity of the device to be used, user friendliness (for both professional and client) of the software interface, number of hosts and attendees permitted (in case of group therapy sessions etc.), and privacy/security features. Features such as screen sharing; whiteboard; unlimited video calls, file sharing, chat box; recording and interactivity features (e.g., animations, stamps) are desirable.

Videoconferencing peripherals include camera with good resolution, display monitor, headsets, microphone and speakers.

b) Text messaging/Emails

Text messaging and emails may be used for exchanging information and resources that supports the client's clinical needs

c) Remote computing software

Remote computing/ desktop software is a tool that uses virtual network computing (VNC) to allow one computer to remotely access and control another computer over an internet/network connection.

These software are particularly required to control test equipment that are connected to a computer and controlled by software (E.g. Audiometer, ABR, OAE). There are standalone remote computing software such as RemotePC, Remote Desktop Manager, and there are some videoconferencing software which also have remote computing capability such as Teamviewer etc. It is recommended to use remote computing software that explicitly provides details regarding data encryption and data protection and privacy.

iii. Connectivity

Telecommunication link between the professional and client site is established through internet connectivity. ISDN, DSL, cable, fibre optic and satellite are different sources of internet connectivity. Each of these options have their strengths and limitations with respect to bandwidth and speed, cost and coverage. Network connection speed affects overall quality of video and audio clarity. Higher bandwidth is required for real-time testing or videoconferencing. Lower bandwidth may result in lags, disrupted voice and video quality. Method of telepractice (stated below under section 4) should be chosen by the professional based on availability of internet bandwidth and speed at professional site and client site.

iv. Test equipment/tools

Telepractice may involve testing equipment to be available at client site. Audiological services are particularly equipment intensive with use of computer based audiometers, Immittance, OAE, ABR etc. There may also be other peripheral devices, such as recording devices or auxiliary video input equipment for computer interfacing, document cameras, or other specialized cameras with high resolution (e.g., fiberoptic videoendoscopes)

Reasonable care should be exercised when selecting equipment for evaluating or treating a client. Since these equipment will be handled by the facilitator at the client site, it is important that the equipment is sturdy, easy to use and compact. Wherever applicable, equipment specialised for tele-practice maybe used for optimum testing. Professionals must be fully aware of the capabilities and limitations of the equipment they intend to use, and the impact it may have on service delivery.

Mobile phone/tablet based apps that are primarily meant for screening of hearing or speech-language should not be used as diagnostic or confirmatory tests. When such apps are used for screening, the professional should verify white papers related to the validity of the app or must validate the app before using it for clinical purposes.

Diagnosis should be made only based on uncompromised standard test protocoI. Recommendations for rehabilitation cannot be based on results obtained using screening apps.

Issuance of disability certification to a client using telepractice should be based on standard test procedures for certification purposes and with prior approval of such a methodology by the concerned government authority.

All equipment used must meet the standards, and professionals must ensure the safety and effectiveness of equipment through on-going maintenance and calibration. Infection control policies and procedures should be in place for the use of equipment and client peripherals.

v. Adaptations of test materials for assessment and rehabilitation

Delivery of services via telepractice, may require modifications to treatment material. Assessment and therapy materials/ tools must be available in digital format. Materials used in the telepractice session must be adapted to suit needs of persons with disabilities.

Validated apps available for speech-language therapy, aural rehabilitation, tinnitus management etc. could be used for clients as per requirement. However, such app based therapeutic interventions must be supervised by the professional. The professional should use apps which are culturally and linguistically appropriate for Indian population.

5. Methods of telepractice

Telepractice can be delivered through one of the three methods described below;

i. Synchronous / real-time: includes interactive audio and video connection in real time, as well as real-time remote testing by the professional using testing equipment.
ii. Asynchronous/ store-and-forward includes transfer of images or data (including audio/video recording) that are captured at the client's end by the facilitator and transmitted (i.e., stored and forwarded) for viewing or interpretation by the professional.
iii. Hybrid—applications of telepractice that include combinations of synchronous, asynchronous, and/or in-person services.

The method of telepractice must be judiciously selected by the professional based on client needs, availability of suitable internet bandwidth for real-time versus store-and forward testing.

6. Administrative aspects of telepractice

i. Payment and receipts:

Clients must be provided with the option of a secure mode of payment. Appropriate receipts must be provided for the services provided through telepractice.

ii. Test reports and records:

Therapy session records or test reports must be made available to the client for every telepractice session. All patient related records, reports, images utilized or generated in the telepractice session should be stored using patient's unique identification number in a confidential manner.

iii. Identification of professional:

Professionals must introduce their name to the client during the first telepractice encounter. Professionals must display their RCI registration number on any records/reports, electronic communication (Text message/ email etc.) and receipts given to his/her clients.

7. Clinical aspects of telepractice

Telepractice services should be equal in quality to that provided in-person. These services when provided via tele-mode must always be provided by, or supervised by, a qualified ASLP. Telepractice should be primarily provided to individuals with limited or no access to ASLP services in their community. The first encounter with a professional should preferably be in-person.

Given the variability of client needs based on age, disorder and testing requirements, candidacy and appropriateness for telepractice should be determined on a case-by– case basis with selections firmly based on clinical judgment, client's informed choice, and professional standards of care. Professionals shall be guided by existing scope of practice guidelines of RCI (Click here for Scope of Practice in Audiology, Speech- language pathology). Wherever necessary, the professional must recognise the limitations of

telepractice and recommend the client for in-person consultation/ testing.

Telepractice must be provided in conjunction with other clinical standards, protocols, policies and procedures for the provision of care. Technology platforms based that use Artificial Intelligence/Machine Learning should not be used independently to provide diagnostics/ counselling or clinical decision making.

II. Ethical Aspects

Information Technology Act, 2000 (https://www.meity.gov.in/content/information-technology- act-2000) and the Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules 2011 (https://www.meity.gov.in/writereaddata/files/GSR313E_10511%281%29_0.pdf) primarily govern telepractice in ASLP and information technology. Telepractitioners must familiarise themselves regarding these legal frameworks.

1. *Data privacy and protection*

   It is important to strike a balance between providing innovative clinical services using technology and protecting individual rights of the clients. There must be limited access to client data and should not be available for those who do not require access e.g. research purposes without patient consent. Telepractice sessions maybe audio/video recorded/ patient's image may be taken only with prior consent from client. Laws/Acts/Bills introduced by government of India in this regard must be adhered to.

2. *Standard of care*

   Telepractice must be equivalent to the quality of services provided in person. The choice of telepractice should be based on client needs and use of appropriate technologies suited to the client.

   Professionals must use their knowledge and wisdom in clinical decision-making that is most appropriate for a particular client. As telepractice is an evolving method of service delivery, clinicians should periodically review current literature in this area to provide evidence-based practice.

   Professionals engaging in telepractice must acquire specific skills in using technology platforms effectively to deliver safe and effective clinical services. Professionals must also periodically update themselves about technological advancements and their utility for clinical services.

3. *Consent*

   Informed consent, as required by your organisation, must be obtained prior to provision of clinical service through telepractice. Telepractice providers should educate the clients about the ICT based modality of service delivery explaining both benefits and limitations. Educational materials such as pamphlets/ video with information on standard operating protocol maybe provided for the patient to be well informed about the service they will receive.

   Professionals must disclose information and announce the presence of any other participants, other than the client, in a telepractice session.

Clients should know their rights and responsibilities including the process for communicating complaints or feedback.

4. *Misconduct*

All actions that wilfully compromise patient care or privacy and confidentiality, or violate any prevailing law are explicitly not permissible. Some examples of actions that are not permissible includes; professional insisting on telepractice, when the client is willing to travel to a facility and/or requests an in-person clinical service; professional or facilitator misusing patient images and data etc.

5. *Malpractice:*

Every telepractitioner must promote and foster compliance and adherence to ethical aspects of practice. Facilitators providing clinical services independently to the client, facilitator performing tests in the absence of a professional/ unsupervised by a professional are considered as malpractice. Such actions will be considered objectionable and RCI may take legal action if necessary.

6. *Cross-border telepractice*

Telepractice across the globe must be provided under caution. Professionals must confirm the specific licensing requirements/ laws/guidelines regarding cross border services in the country where services are being provided to. These guidelines do not apply to cross border telepractice.

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For the purpose of developing this document, the following documents were reviewed;

1. Telemedicine guidelines of India available from https://www.mohfw.gov.in/pdf/Telemedicine.pdf
2. ASHA guidelines for Telepractice available from https://www.asha.org/Practice-Portal/Professional-Issues/Telepractice/
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ANNEXURES TO

TELEPRACTICE GUIDELINES FOR AUDIOLOGY AND SPEECH, LANGUAGE PATHOLOGY SERVICES IN INDIA

ISHA does not endorse the software or Apps listed in this document. The information provided in the annexures is only intended to be a general information for clinicians. It does not replace a systematic and critical review of the broader information available in public domain or through scientific literature. Considering the dynamic nature of technological advancement, these annexures may be updated periodically.

Annexure-1

Video-conferencing software applications

The software mentioned below is only representative and not exhaustive. The level, type and adequacy of encryption available in the software should be ensured by clinician based on their needs and clinical services provided

S.No	Software	Key features	Reference website
1	**VSee**	• One-click web video calling • One-click screen share • Share medical devices (Otoscope) • Low bandwidth HD video and 3G mobility	https://vsee.com/
2	**Zoom for healthcare**	• Recorded session review • Enhanced collaboration features • Medical device integrations • Examine and treat patients virtually with far- end camera control, EHR and medical device integrations, and intraoperatively in telehealth carts.	https://zoom.us/healthcare
3	**Go to meeting**	• Screen Sharing • Conference Calling • Video Conferencing • Mobile Conferencing • Meeting Recording & Transcription • Conference Room Equipment	https://www.gotomeeting.com/en-in

4	**Doxy.me**	• Unlimited session length • Unlimited number of sessions • Personalized room URL address • HD audio/video • Chat messenger • Meeting history • Browser notifications • Text and email reminders • Breach insurance	https://doxy.me/en/features/
5	**Simple Practice Telehealth**	• Website developing option • Go paperless • Allow clients to upload documents	https://www.simplepractice.com/telehealth/
6	**True-conf**	• Video call • Multipoint conference • Video lecture • Content sharing • Slide show • Recording	https://trueconf.com/
7	**Skype**	• Instant messaging • File sharing • Screen sharing.	https://support.skype.com/en/faq/FA31/does- skype-use-encryption

*Content of the above annexure is based on information available in public domain as on 4th October 2020

Annexure- 2

Bandwidth requirements for some video-conferencing software

S.No	Software	Video call	Screen sharing	Reference website
1	**GoToMeeting**	• 0.7 mbps (700 kbps) to 2mbps, depending on number and size of webcams in use	0.04 mbps (40 kbps) to 8 mbps	https://support.goto.com /meeting/help/how-much-bandwidth-is-used-during-a-session- g2m010029
2	**Skype**	• Low quality: 128kpbs to 300kbps • High quality: 400kbps to 500kbps • HD: 1.2mbps to 1.5 mbps • Group call: 512kbps to 8mbps	128kbps to 300kbps	https://support.skype.com/en/faq/fa1417/how- much-bandwidth-does- skype-need
3	**Google meet**	• Low quality: 300kbps • Standard quality: 1mbps to 2 mbps • HD: 2.6 mbps to 4 mbps	No information	https://support.google.com/meethardware/answe r/4541234?hl=en
4	**Zoom**	**1:1 video call** • Low quality:600mbps • 720pixels:1.2 mbps • HD: 1.8Mbps **Group Video call:** • LQ: 800kbps to 1.2mbps • 720Pixels: 1.5 mbps • HD: 2.5 mbps (for sending video) • 3.5 mbps for receiving video	Screen sharing with no video: 50 to 75kbps Screen sharing with video thumbnail: 50 to 150 kbps	https://support.zoom.us/ hc/en-us/articles/201362023 - System-requirements- for-Windows-macOS-and-Linux

5	**Cisco webex**	• High Definition Video: 2.5 mbps (Receive) and 3.0 mbps (Send) • High Quality Video: 1.0 mbps (Receive) and 1.5 mbps (Send) • Standard Quality Video: 0.5 mbps (Receive) and 0.5 mbps (Send) • 620 to 920kbps (grid layout -upto 7 participants) • 620kbps to 4.3mbps (grid layout- upto 25 participants) • Mobile phone: 920 kbps to 1.8mbps	Classic layout: 1.5 - 1.65 mbps (transmit) 2.5 – 2.7 mbps (Receive) Side by side layout: Transmit: 620 to 685 kbps Receive: 1mbps to 1.2 mbps Mobile phone: 920kbps (transmit) to 2.7mbps receive)	https://www.cisco.com/c/en/us/products/collateral/conferencing/webex-meetings/white_paper_c 11-691351.html#_Toc5232 58520
6	**Vsee software**	• 640 x 480p: 154 / 164 kbps • 1280 x 720p**:** 562 / 654 kbps to	No information	https://vsee.com/vidyo/
7	**Doxy.me**	• Minimum of 350 kbps download and upload speeds • Recommended 10-15 mbps	No information	https://help.doxy.me/en/ articles/95860-minimum- system-requirements
8	**True conf**	• SD: 256 kbps (server end) • 128 kbps (client end) • HD: 2048kbps (server end) • 1024kbps (client end)	No information	https://trueconf.com/features/collaboration/desktop-sharing.html

*Content of the above annexure is based on information available in public domain as on 4th October 2020.

Annexure- 3

Remote computing software applications for real-time clinical testing

The software mentioned below is only representative and not exhaustive. The level, type and adequacy of encryption available in the software should be ensured by clinician based on their needs and clinical services provided

S.No	Name	Key features	Security	Website link
1	**RemotePC**	• Instant one-time access for collaboration • Access from any iOS or Android device • Connect to computers via web browser • Drag and drop to transfer files/folders • Chat during remote sessions • Print files on remote computer • Record remote sessions	TLS v 1.2 / AES - 256 bit encryption	https://www.remotepc.com/rpcnew/signup/el/techradar95?subtag=trd-in-11075977026 73128200
2	**Zoho assist**	• Remote Support • Both attended and unattended Remote Access • Screen Sharing • File transfer • Customization • Integrations • Multi-monitor navigation • Reboot and Reconnect	2FA, SSL and 256-bit AES encryption	https://www.zoho.com/assist/
3	**LogMeIn Pro**	• File storage: 1TB • Unlimited users • Multi-monitor display • Remote printing	256-bit AES encryption	https://www.logmein.com/
4	**Rescue by LogMEIn**	• Unattended access • Instant chat • Screen sharing • File transfer	256-bit AES encryption	
5	**GoToMyPC**	• Multi monitor support • File transfer • Remote printing • Administration of Accounts & Users • Central Billing for Users • Easily Switch Users • Monitor Usage • Comprehensive Reporting	256-bit AES encryption, dual passwords and end-to-end authentication.	https://get.gotomypc.com/plansandpricing
6	**Team Viewer**	• Automated mass deployment • Remote Support • Mobile Device Support • Remote printing for Mac & Windows on any printer • Cross-platform compatibility	2048 RSA private/public key exchange and AES (256-bit) session encryption	https://www.teamviewer.com/en/

			.	
7	**Chrome remote desktop**	• Cross-platform compatibility • Limited features	PIN protection	
8	**Splashtop**	• Cross-platform compatibility • Mass deployment • Attended and unattended support • Electronic health record management • Clinical teaching tools	TLS and 256bit AES encryption	https://www.splashtop.com/healthcare

*Content of the above annexure is based on information available in public domain as on 4th October 2020.

Annexure – 4

Speech and Language Therapy Software Applications

The apps mentioned in this annexure are only representative and not exhaustive. Clinicians are encouraged to ascertain the relevance and culture based appropriateness of the apps prior to clinical usage.

a. Paid versions and apps in English

S.No	Name of App	Key features	Website link
1	**Articulation station**	The program allows users to practice at the word, sentence, and story level in 22 sounds that target the initial, medial, and final positions of words.	http://littlebeespeech.com/articulation_station.php
2	**Proloquo2Go**	The app is appropriate for all levels and you can customize it for a range of visual and fine-motor skills. You can also adapt it to fit your vocabulary and accessibility needs	https://www.assistiveware.com/products/proloquo2go
3	**LAMP words for life**	The symbols-based approach makes this app appropriate for beginning communicators, as well as older children with Autism that have advanced language skills.	https://aacapps.com/
4	**Tactus Therapy**	Canada based company to develop the speech language therapy apps in six modules for apraxia therapy, dysphagia therapy, dysarthria therapy and aphasia therapy, the versions mostly used for adults.	https://tactustherapy.com/
5	**Speech tutor**	Speech Tutor from Synapse Apps uses 2- D animated movies with 132 animations available, this comprehensive app will prompt you to select a sound, watch how it is made, and then practice making the sound.	https://www.speechtutor.org/stpweb

*Content of the above annexure is based on information available in public domain as on 4th October 2020.

b. Free versions and apps in English

S.No	Name of App	Key features	Website link
1	**Reading eggs**	This app provides a variety of games for reinforcing identification of sight words. The lessons provide the perfect way for children to build their vocabulary of critical sight words.	https://www.educationalappstore.com/app/reading-eggs- learn-to-read
2	**The SLP solutions**	It provides lot of free material for SLPs to work with children as well as adults with different speech language disorders	https://www.speechandlanguagekids.com/11-free-speech- therapy-materials/
3	**Animal sounds**	Educational game for learning animal sounds. Very fun, ad-free, and perfect for any age from one to five. It's a game that your child will love, and most importantly, will teach them in a fun way.	https://play.google.com/store/apps/details?id=net.fagames.android.playkids.animals
4	**Stutter help**	This app provides DAF and Music therapy	https://play.google.com/store/apps/details?id=com.honestbeapps.stutterhelp
5	**Preschool learning app**	the app provides pictorial alphabets, number /colur matching games	https://play.google.com/store/apps/details?id=com.faddutechnology.android.kidspreschool

*Content of the above annexure is based on information available in public domain as on 4th October 2020.

c. Speech Language Therapy applications in Indian regional languages

S.No	App name	Features	Language	Website link
1	**Jellow communicator app**	Free version for Language intervention for children as well as for adults	English, Hindi Marathi	https://play.google.com/store/apps/details?id=com.dsource.idc.j ellowintl
2	**Meri Vani**	Paid version provides Picture library and tests with progress reports	Hindi	https://www.amazon.com/Neuro-Hero-Meri-Vaani/
3	**pschool.in**	It's a free multilingual app which provides grade wise games for	English, Hindi, Tamil, Malayalam	https://pschool.in/

		maths english memory vocabulary and writing		
4	**Hindi varnamala**	It is free app which includes picture and aksharas in Hindi CV combo, words in HINDI	Hindi	https://play.google.com/store/apps/details?id=com.hegodev.hind varnmala
5	**Mobile phone based remote speech therapy#**	It is a free app which provides the pictures and word matching game and also picture sound games	Marathi	https://play.google.com/store/apps/details?id=com.tcs.moparest &hl=en

*Content of the above annexure is based on information available in public domain as on 4th October 2020.

Annexure-5

Audiology clinical practice related software applications

The apps mentioned in this annexure are only representative and not exhaustive. Clinicians are encouraged to periodically review peer reviewed publications to ascertain the validity of the apps for a given population to ensure accuracy of results. The clinical utility of the apps must be determined by the clinician prior to usage.

a. Hearing conservation related applications

S. No	Name of App	Brief description	Platform
1	**Sound Meter**	Uses the microphone from the Android device to measure how loud the environment is, in decibels, and gives a reference sound to compare it to.	Android
2	**Sound level meter**	Uses the microphone from iOS device to measure how loud the environment is, in decibels.	iOS
3	**Noise Control Pro**	Uses the microphone from Android device to measure how loud the environment is, in decibels, and allows to record the sound for later playback.	Android
4	**Soundcheck**	Measures the noise levels in the environment and determines whether noise protection is recommended to protect individual from damage to hearing	Android, iOS
5	**Hearangel**	Monitors the music levels that one is listening to with audio devices and alerts danger of overexposure.	Android, iOS
6	**Too Noisy Pro**	Used to control the noise level in a classroom to alert children when the noise levels are high	Android, iOS
7	**Hearcules**	For people who are frequently exposed to loud noises, this app will alert how much longer the individual can stay in that noisy environment without causing hearing damage, and also alert when the time has exceeded.	iOS

*Content of the above annexure is based on information available in public domain as on 4th October 2020.

b. Tinnitus management Apps

S.No	Name of App	Brief description	Platform
1	**Tinnitracks**	Web app with features to filter music in order to use it for tinnitus therapy	Android, iOS
2	**Relax Noise 3**	White, pink, or red noise masker for tinnitus.	Android
3	**myNoise**	Uses white noise, rain noise and binaural beats to create sound therapy noise generators.	Android, iOS
4	**Tinnitus**	Uses the Tinnitus Retraining Therapy (TRT) method to habituate the mind to "tune out" the tinnitus.	Android
5	**White noise**	Uses environmental sounds to create a relaxing atmosphere.	Android, iOS
6	**Track your tinnitus**	Helps to track an individual's tinnitus and its association with their daily activities.	Android, iOS
7	**Tinnitus relief**	This app gives information about tinnitus and has guided relaxation exercises	Android
8	**Resound relief**	Offers a combination of sound therapy and relaxation exercises to distract you from your tinnitus.	Android, iOS
9	**Beltone tinnitus**	Offers a combination of sound therapy and relaxation exercises to distract the individual from their tinnitus.	Android, iOS
10	**Tinnitus balance**	Creates customized sounds and music to listen to when tinnitus is most bothersome.	Android, iOS
11	**Whist**	Create custom sounds by adjusting volume, pitch, noisiness, and balance to help relieve tinnitus.	Android, iOS

12	**Oticon tinnitus sound**	Has different sound types and creates a sound plan to give relief from tinnitus	Android, iOS

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c. Assistive listening/ hearing enhancement Apps

S.No	Name of App	Brief description	Platform
1	**AUD1**	Uses advanced signal processing strategies to help increase comfort and clarity of sounds.	Android, iOS
2	**EarMachine**	Enhances the sounds around the individual	Android, iOS
3	**Hear Coach**	A training game used to improve listening ability in noise by increasing cognitive and auditory sharpness	Android
4	**HearingAmp**	This app will amplify sounds and allow the user to adjust sound quality with varying filters.	iOS
5	**Tunity**	Allows to stream sound from any muted television	Android, iOS
6	**TV Louder**	Uses the device microphone to amplify TV sounds without having to turn the TV up.	iOS

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d. Hearing screening Apps

S.No	Name of App	Description	Platoform
1	**uHear**	A hearing test to determine if the individual hears within the normal range in quiet and in noise.	iOS

2	**HearScreen**	Based on the person's response, the app automatically generates a hearing score that indicates whether there may be a possible hearing loss.	Android, iOS
3	**Hearing test audiogram**	Assess the level of hearing with the help of 8 tone signals of different frequencies and helps in regular monitoring of hearing	Android
4	**Hearing Test app**	Uses pure tone audiometry with bundled headphones and predefined calibration coefficients from the database	Android
5	**HearWHO**	A hearing screening app from World Health Organization to determine how well one can detect words in background noise	Android, iOS
6	**HearZA**	The app uses digits in noise hearing test to indicate the possibility of hearing loss. HearZA is South Africa's national hearing test	Android
7	**Siemens Hearing Test**	Determines how well one can detect words in background noise.	iOS
8	**Hearing Test Pro Free**	Tests hearing in quiet and in noise and explains the results to you using your audiogram.	iOS
9	**Mimi Hearing Test**	Tests hearing at different frequencies and determines "hearing age."	Android, iOS
10	**Audicus Hearing Test**	A quick and simple hearing screening at 6 different frequencies	iOS
11	**Jacoti Hearing Center**	Uses patented DuoTone technology to provide test results that you can track over time	iOS
12	**Sound Scout**	A game designed to test the hearing of children.	Android, iOS

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e. Indian Sign Language Apps

S.No	Name of App	Brief description	Platform
1	**Talking Hands**	To maintain communicative environment between persons with hearing and persons with hearing impairment in India. Indian Sign Language Resource for those willing to learn sign language	Android
2	**DEF-ISL**	50000+ easy-to-understand signs and phrases, in-built videos, illustrations, this easy to navigate app can be used both by adults and children with hearing loss	iOS, Android

*Content of the above annexure is based on information available in public domain as on 4th October 2020.

Annexure- 6

List of research references from the last five years (2015-2020)

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Annexure-7

Sample Tele practice-SLHS consent form

This is just a sample consent form. Individual clinicians can add relevant components based on specific client population/ location/ procedure. Individual clinician/center may add more details such as cancellation policy, steps to be taken if there is a technical failure etc.

Patient Name: Age/Gender:

1. I understand that I will be availing tele therapy/consultation for speech/ language/ hearing difficulties from the speech language pathologist/ audiologist
2. I understand that such a consultation will not be the same as an in-person session at the hospital clinic.
3. I understand that the tele-therapy/consultation/testing provided will be for ……duration including preparatory time and therapy/consultation/testing time.
4. The sessions will focus primarily on.....(e.g. providing support and guidance to spouse/parent/guardian in facilitating progress in speech/language/ hearing abilities and also to review progress).
5. I am aware/have been explained regarding the method of using internet based video conferencing/ remote testing for this purpose
6. I understand that I must make arrangements for (1) the necessary computer/mobile phone telecommunications equipment and internet access for tele-therapy sessions, (2) ensuring a suitable space at my home/office for the session, with adequate lighting (3) ensuring that the patient and caregiver are dressed appropriately for the session and the space is free from distractions or intrusions during the session (for home based sessions)
7. I understand there are potential risks to this technology, including interruptions and technical difficulties.
8. I understand that I have had the opportunity to ask questions in regard to this procedure with my ASLP. My questions have been answered and the risks, benefits and any practical alternatives have been discussed with me in a language in which I understand.

By signing this form, I certify:

- That I have read or had this form read and/or had this form explained to me
- That I fully understand its contents including the risks and benefits of the Tele-speech services.
- That I have been given ample opportunity to ask questions and that any questions have been answered to my satisfaction.

Patient's/parent/guardian signature **Date** **Time**

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