

**Supplemental Material S1.**

Summary of review studies.

Serial number	Authors	Study title	Study year	Country or countries	Number of participants	Type of Testing	Teleaudiology approach	RQ1: Who served as patient-site facilitator?	RQ2: What were the facilitator's duties?	RQ3: What was the facilitator's training?		
										Who trained the facilitator?	Duration of training	Content of training
1	Crump & Driscoll	An application of telemedicine technology for otorhinolaryngology diagnosis.	1996	USA	8	video otoscopy	synchronous	nurse technician	Prepare patient for testing, answer questions from the individual at the remote site, operate equipment.	Licensed vocational nurse	Several hours	Set up and use teleaudiology equipment, prepare for patient, sterilization procedures.
2	Stern et al.	Telemedicine applications in otolaryngology.	1998	USA	45	video otoscopy	asynchronous	otolaryngology chief resident	Interview patients, capture videos and still images using video otoscope and transmit images to remote site.	No details	No details	No details
3	Sclafani et al.	Teleconsultation in otolaryngology: Live versus store and forward consultations.	1999	USA	45	video otoscopy	asynchronous and synchronous	otolaryngology chief resident	Interview patients, capture videos and still images using video otoscope and transmit images to remote site.	No details	No details	No details
4	Patricoski et al.	A comparison of in-person examination and video otoscope imaging for tympanostomy tube follow-up.	2003	USA	40	video otoscopy	asynchronous	community health aide, nurse, or nurse practitioner	Capture video otoscopic images, discard poor images and repeat the procedure to obtain new video otoscopic images when necessary, and store on server, hold child during video otoscopy if necessary.	No details	Several hours	Hand positioning of the otoscope, focusing, cleaning the tip of the specula, setting white balance, using image enhancement, lighting, and maneuvering.
5	Givens et al.	Internet-based tele-audiometry system for the assessment of hearing: A pilot study.	2003	USA	31	pure tone audiometry	synchronous	audiologist	Perform hearing assessments.	No details	No details	No details
6	Givens & Elangovan	Internet application to tele-audiology – 'Nothing' but net.	2003	USA	45 air conduction, 25 bone conduction	pure tone audiometry	synchronous	audiologist	Perform hearing assessments.	No details	No details	No details
7	Towers et al.	The reliability of click-evoked and frequency-specific auditory brainstem response testing using telehealth technology.	2005	USA	15	Auditory Brainstem Response testing for individuals with normal hearing	synchronous	second-year audiology graduate student	Prepare client's skin for electrodes, place electrodes and transducers on clients.	No details	No details	No details
8	Ribera	Interjudge reliability and validation of telehealth applications of the Hearing in Noise Test (HINT).	2005	USA	20	speech-in-noise testing for individuals with normal hearing	synchronous	audiology faculty and audiology graduate students experienced in administering the HINT	Administer the Hearing In Noise Test, communicate with examiner at distant site, judge subject's response.	No details	No details	No details
9	Smith et al.	Realtime telemedicine for paediatric otolaryngology pre-admission screening.	2005	Australia	64	video otoscopy	synchronous	pediatrician	Conduct videoconference, capture videos and still images using video otoscope, transmit images to remote site.	No details	No details	No details
10	Elangovan S.	Telehearing and the internet.	2005	USA	45 audiometry, 5 OAEs	pure tone audiometry and Otoacoustic Emissions	synchronous	audiologist	Perform hearing assessments and OAE measurements, place transducers on participants, instruct clients on testing procedures, assess candidacy criteria, build rapport with client, collect case history, coordinate with remote clinician.	No details	No details	No details
11	Smith et al.	Accuracy of pre-recorded video images for the assessment of rural indigenous children with ear, nose and throat conditions.	2006	Australia	58	video otoscopy	asynchronous	research nurse	Collect case history, conduct video otoscopy recordings.	No details	No details	No details
12	Krumm et al.	Providing basic hearing tests using remote computing technology.	2007	USA	30	pure tone audiometry and Otoacoustic Emissions	synchronous	audiologist	Place transducers on client, instruct client on testing procedure, conduct audiometric screening, conduct otoscopy.	No details	No details	No details
13	Shapiro et al.	Remote intraoperative monitoring during cochlear implant surgery is feasible and efficient.	2008	USA	4	intraoperative monitoring	synchronous	neurotology fellow, cochlear implant surgeon, circulating nurse	Connect laptop to intranet, connect laptop to programming interface, place cable with coil into a sterile bag, read patient information to audiologist, provide IP address to off-site audiologist.	No details	No details	No details
14	Lundberg et al.	Digital imaging and telemedicine as a tool for studying inflammatory conditions in the middle ear-evaluation of image quality and agreement between examiners.	2008	Sweeden	64	video otoscopy	asynchronous	nurse	Collect case history, take images of tympanic membrane, collect tympanogram, store data on PC, videoconference with study personnel.	No details	No details	No details
15	Lancaster et al.	Remote hearing screenings via telehealth in a rural elementary school.	2008	USA	32	video otoscopy, pure tone audiometry screening, and immittance screening	synchronous and asynchronous	trained assistant	Conduct video otoscopy, place headphones on client.	No details	No details	No details
16	Krumm et al.	Telemedicine for audiology screening of infants.	2008	USA	30	Otoacoustic Emissions and automated Auditory Brainstem Response screening	synchronous	audiologist	Instruct parents on testing procedure, insert DPOAE probe, apply electrodes, place transducers on client.	No details	No details	No details
17	Kokesh et al.	Digital images for postsurgical followup of tympanostomy tubes in remote Alaska.	2008	USA	35	video otoscopy	asynchronous	Community Health Aide/Practitioners (CHA/P)	Collect case history, examine subjects' ears, obtain video otoscopy images.	No details	No details	How to conduct video otoscopy and on the telehealth software, and how to capture quality images.

18	Smith et al.	Concordance between real-time telemedicine assessments and face-to-face consultations in paediatric otolaryngology.	2008	Australia	97	video otoscopy	asynchronous	pediatrician	Perform video otoscopy.	No details	No details	No details
19	Ramos et al.	Use of telemedicine in the remote programming of cochlear implants.	2009	Spain	5	cochlear implant programming	synchronous	local representative	Manage local hardware, serve as communication link between two sites, produce sounds for testing, perform safety stimulation stops, complete questionnaire to evaluate session.	No details	No details	No details
20	Pearce et al.	A pilot investigation into the provision of hearing services using tele-audiology to remote areas.	2009	Australia	5	video otoscopy, pure tone audiometry, hearing aid fitting and verification, and rehabilitative counseling	synchronous	hearing assistant	Connect audiometer to laptop, place headphones on client under supervision of remote audiologist, connect hearing device to computer, place probe microphone in client's ear.	No details	No details	How to assist fitting headsets and real-ear measurement probes.
21	Ferrari & Bernandez-Braga	Remote probe microphone measurement to verify hearing aid performance.	2009	Brazil	60	probe microphone measures	synchronous	audiologist not familiar with probe measures	Facilitate automated hearing screening protocol, upload results to server.	No details	No details	No details
22	Kokesh et al.	Traveling an audiologist to provide otolaryngology care using store-and-forward telemedicine.	2009	USA	1,458	video otoscopy, audiometry, tympanometry, reflexes, Otoacoustic Emissions	asynchronous	audiologist	Collect case history, conduct video otoscopy, collect audiogram, tympanometry, acoustic reflexes, and OAEs.	No details	No details	Use of software, video otoscopy, digital cameras, document scanners.
23	Swanepoel et al.	Intercontinental hearing assessment - A study in tele-audiology.	2010	USA and South Africa	30	pure-tone audiometry for normal hearing subjects	synchronous	physician	Position transducers on client, communicate with remote audiologist, assist in conducting audiometric assessment.	No details	No details	No details
24	Wasowski et al.	Remote fitting of cochlear implant system.	2010	Poland	30	cochlear implant programming	synchronous	speech therapist	Help client communicate with remote specialist, perform safety stimulation stops.	No details	No details	No details
25	Wesarg et al.	Remote fitting in Nucleus cochlear implant recipients.	2010	Germany, Spain, Poland, Greece	70	cochlear implant programming	synchronous	technician, audiologist, teacher of the deaf, speech therapist, psychologist	Set up fitting equipment, observe and comfort the client, assist with communication between client and remote audiologist, perform safety stimulation stops, connect and disconnect the speech processor from the clinical interface.	No details	No details	No details
26	Elliot et al.	The feasibility of a community-based mobile telehealth screening service for Aboriginal and Torres Strait Islander children in Australia.	2010	Australia	442	video otoscopy, tympanometry and pure-tone audiometry	asynchronous	aboriginal health worker with advanced hearing-health training and extensive experience in ear health	Obtain video otoscopy images, obtain tympanometry and audiometric data for off-line analysis by audiologist.	No details	No details	No details
27	Crowell et al.	Audiology telepractice in a clinical environment: A communication perspective.	2011	USA	12	pure tone audiometry	synchronous	audiology graduate student	Power on audiometer, obtain client consent, set up equipment, instruct client on testing procedure, client management, collect results from conventional audiological assessment.	No details	No details	No details
28	Ciccia et al.	Improving the access of young urban children to speech language and hearing screening via telehealth.	2011	USA	358 hearing screening, 377 tympanometry, 263 speech and language	tympanometry, Otoacoustic Emissions screening, pure tone audiometry, speech and language screening	synchronous	student in speech-language pathology or audiology	Conduct DPOAE screening, conduct immittance testing under supervision, relay results of tests to audiologist for real time interpretation, conduct audiometric screening under remote supervision.	Supervising clinician	No details	Protocol for recruitment and screening.
29	Wasowski et al.	The telefitting method used in the national network of teleaudiology: Assessment of quality and cost effectiveness.	2012	Poland and Ukraine	94	cochlear implant programming	synchronous	support specialist	Help client communicate with remote specialist, connect speech processor to computer interface, conduct structured interview with client regarding communication skills and hearing benefits.	No details	No details	No details
30	Smith et al.*	A mobile telemedicine-enabled ear screening service for indigenous children in Queensland: Activity and outcomes in the first three years.	2012	Australia	1053	video otoscopy, tympanometry, pure-tone air conduction screening	asynchronous	local indigenous health worker	Collect client case history, conduct video otoscopy, conduct hearing screening, conduct tympanometry screening, administer health risk questionnaire.	No details	No details	No details
31	Penteado et al.	Remote hearing aid fitting: Tele-audiology in the context of Brazilian public policy.	2012	Brazil	3	hearing aid fitting services	synchronous	audiologist	Enter patient data to computer, communicate with remote audiologist, conduct hearing aid fitting under supervision of remote audiologist	Remote audiologist	30 minutes	Electro-acoustic hearing aid features.
32	Hughes et al.	Use of telehealth for research and clinical measures in cochlear implant recipients: A validation study.	2012	USA	29	cochlear implant programming	synchronous	graduate students in audiology or students with a background in nursing	Set up testing equipment, initiate videoconferencing connection, assist with calibration of speech materials, greet client, monitor videoconferencing connection.	No details	No details	No details

33	Hayes et al.	From Colorado to Guam: Infant diagnostic audiological evaluations by telepractice.	2012	USA and Guam	9	tympanometry, Auditory Brainstem Response testing, Otoacoustic Emissions, and Auditory Steady-State Response testing	synchronous	Guam audiometrists	Support family, facilitate testing, and meet the staff associated with the program, including the providers who refer the infants, and the audiologist who provides follow-up care to the infants.	Audiologist	No details	Infant otoscopy, tympanometry, electrode application and removal, coupling, probe placement, earphone, and bone conductor placement, infection control, infant calming, and family support.
34	Campos & Ferrari	Teleaudiology: Evaluation of teleconsultation efficacy for hearing aid fitting.	2012	Brazil	50	hearing aid fitting services	synchronous	undergraduate speech-language student without experience in hearing aid fitting	Conduct video otoscopy, connect hearing aids to programming cables and HI-Pro interface, insert and remove hearing aid and ear mold, position probe tube for calibration, position client in test environment, insert and remove probe tube in client's ear.	No details	No details	Otologic inspection, connect hearing aids to the equipment, hearing aid and earmold insertion/removal, position Real Ear probe tube for calibration, position the participant, insertion and removal of the probe tube in the participant's ear, how to interact with the remote provider via videoconferencing.
35	Ramkumar et al.*	Tele-ABR using a satellite connection in a mobile van for newborn hearing testing.	2013	India	24	Auditory Brainstem Response testing	synchronous	village health worker	Prepare infant's skin, place ABR electrodes on client, insert earphones into infant's ears.	No details	No details	No details
36	Biagio et al.	Asynchronous video-otoscopy with a telehealth facilitator.	2013	Australia	61	video otoscopy	asynchronous	facilitator with no formal health care training	Collect case history, acquire video otoscopic images.	No details	Two days	Hand positioning, manipulating speculum, focusing, taking video images, using software, sterilization.
37	Swanepoel et al.*	Smartphone hearing screening with integrated quality control and data management.	2014	South Africa	162	pure tone audiometry screening	synchronous	audiology student	Instruct clients on testing procedure, conduct audiometric screening.	Audiologist	No details	How to conduct conventional audiometry and audiometry using the HearScreen audiometer.
38	Reginato & Ferrari	Teleaudiology: Professional-patient communication in hearing aid programming and fitting via teleconsultation.	2014	Brazil	40	hearing aid programming and verification	synchronous	Speech-Language Pathologist without experience in hearing aid selection and fitting	Connect hearing aids to programming cables, insert and remove hearing aids, insert and remove probe tubes, calibrate probe tubes, position participant, communicate with remote audiologist.	No details	No details	The use of software (Skype and TeamViewer), hearing aid connection to programming cables, insertion and removal of hearing aid and/or probe tubes, probe tube calibration, participant positioning.
39	Penteado et al.	Use of the Satisfaction with Amplification in Daily Life (SADL) questionnaire to assess patient satisfaction following remote hearing aid adjustments (telefitting).	2014	Brazil	8	hearing aid fitting services	synchronous	audiologist	Remove and insert client's hearing aids, check client's ear molds for wax, connect hearing aids to programming cables, administer questionnaire.	Audiologist	No details	No details
40	Lundberg et al.*	Remote evaluation of video-otoscopy recordings in an unselected pediatric population with an otitis media scale.	2014	South Africa	90	video otoscopy	asynchronous	individual with no formal health care training	Conduct video otoscopy recordings, upload recordings to server.	Otologist	Two days	How to conduct video otoscopy.
41	Kuzovkov et al.	Remote programming of Med-El cochlear implants: Users' and professionals' evaluation of the remote programming experience.	2014	Italy, Sweden, Russia	26	cochlear implant services	synchronous	local health care professional	Set up remote connection.	No details	No details	No details
42	Eikelboom et al.	Validation of remote mapping of cochlear implants.	2014	Australia	11	cochlear implant mapping	synchronous	research assistant or family member	Under supervision of audiologist, administer subjective outcomes tests, instruct clients on testing procedure, repeat instructions in case client did not understand, administer Ling Six sound test.	No details	No details	No details
43	Biagio et al.	Video-otoscopy recordings for diagnosis of childhood ear disease using telehealth at primary health care level.	2014	Australia	140	video otoscopy	asynchronous	facilitator with no formal health care training	Collect case history, acquire video otoscopic images.	Otologist	Two days	Patient positioning, visual inspection of the external ear, hand positioning, manipulation of speculum, focus adjustment, recording capture, video-otoscope software use, and equipment cleansing.
44	Visagie et al.	Accuracy of remote hearing assessment in a rural community.	2015	South Africa	20	pure tone audiometry	synchronous	local community member	No details.	Audiologist	No details	Earphone insertion, headset positioning, and use of response button.
45	Smith et al.*	Monitoring ear health through a telemedicine-supported health screening service in Queensland.	2015	Australia	5539	video otoscopy, tympanometry, pure tone audiometry screening	asynchronous	local indigenous health worker	Collect case history, conduct video otoscopy, conduct hearing screening.	No details	No details	No details
46	Botasso et al.	Teleaudiometry as a screening method in school children.	2015	Brazil	243	video otoscopy, pure tone audiometry screening	asynchronous	audiologist	Conduct: video otoscopy, immittance testing, and audiometric screening.	No details	No details	No details
47	Yousuf Hussein et al.	Smartphone hearing screening in mHealth assisted community-based primary care.	2016	South Africa	703	pure tone audiometry screening	asynchronous	community health worker	Instruct clients on testing procedure, conduct audiometric screening using automated protocol, refer clients to primary health care clinic for diagnostic testing when necessary.	No details	Four hours	Ear and hearing health care and its importance, hands-on practice with the hearing screening smartphone application.

48	Sandstrom et al.	Smartphone threshold audiometry in underserved primary health-care contexts.	2016	South Africa	94	pure tone audiometry screening	synchronous	undergraduate audiology student	Collect client demographic information, place transducers on client, provide instructions to client on screening protocol, conduct audiometric screening, refer clients to hospital for hearing aid fitting evaluation.	No details	Two hours	How to conduct smartphone hearing screening and how to facilitate automated pure-tone air and bone conduction audiometry.
49	Pross et al.	Teleaudiology in the Veterans Health Administration.	2016	USA	42,697	video otoscopy, Otoacoustic Emissions, hearing screening, speech testing, hearing aid services	synchronous	audiology technician	Place headphones on client, assist with: video otoscopy, air conduction and bone conduction audiometry, otoacoustic emissions testing, immittance, and speech testing.	No details	No details	No details
50	Novak et al.	The future of healthcare delivery: IPE/IPP audiology and nursing student/faculty collaboration to deliver hearing aids to vulnerable adults via telehealth.	2016	USA	181	hearing aid services	synchronous	graduate student in nursing	Help collect client case history, help determine hearing needs of client, conduct video otoscopy, measure pinna to prepare for hearing aid tube, help client select hearing aid color, conduct listening check of hearing aids, help orient client on the care and maintenance of hearing aid, conduct manual aspects of real-ear probe mic measurements, accompany clients to check-out.	Supervising faculty	One academic semester	Delivery of hearing health care services and hearing aids to vulnerable hard of hearing patients, how to interpret hearing tests and immittance results, otoscopy, ear anatomy and physiology, tympanometry, and specific hearing aid technology.
51	Dharmar et al.	Reducing loss to follow-up with tele-audiology diagnostic evaluations.	2016	USA	22	Auditory Brainstem Response testing	synchronous	telepresenter	Prepare infant's skin, apply and connect ABR electrodes, place probes in the infant's ears, position otoscope, assist the parent with attaining a sleep state for the infant under the guidance of the audiologist.	No details	No details	No details
52	Mahomed-Asmail et al.	Clinical validity of hearScreen™ smartphone hearing.	2016	South Africa	1,070	pure tone audiometry screening	synchronous	second year audiology student	Conduct smartphone hearing screening, conduct conventional hearing screening, instruct child to raise their hand when they hear tone, wait for ambient noise to pass when too loud to conduct screening.	Audiologist	No details	Use of smartphone hearing screening and how to conduct conventional screening audiometry.
53	Van Tonder et al. *	Automated smartphone threshold audiometry: Validity and time efficiency.	2017	South Africa	95	pure tone audiometry screening	asynchronous	researcher	Facilitate automated hearing screening protocol, upload results to server.	No details	No details	No details
54	Lundberg et al. *	Diagnostic accuracy of a general practitioner with video-otoscopy collected by a health care facilitator compared to traditional otoscopy.	2017	South Africa	140	video otoscopy	synchronous	health care facilitator	Conduct video otoscopy recordings.	Otologist	Two days	How to conduct video otoscopy.
55	Muñoz et al.	Paediatric hearing aid management: A demonstration project for using virtual visits to enhance parent support.	2017	USA	4	hearing aid fitting services	synchronous	audiology graduate student/clinician	Set-up videoconferencing connection, and explain testing procedures to clients.	No details	No details	No details
56	Moshtaghi et al.	Smartphone-enabled otoscopy in neurotology/otology.	2017	USA	57	video otoscopy	asynchronous	research assistant or medical student	Conduct video otoscopy.	No details	No details	No details
57	Monica et al.	School entry level tele-hearing screening in a town in South India – Lessons learnt.	2017	India	31	pure tone audiometry screening	synchronous	teacher	Conduct video otoscopy, conduct hearing screening, perform Ling Six sound test.	Audiologist	Two days	How to access the internet, establish videoconferencing, connect hardware to the computer, place headphones on a child's head, insert an OAE probe into the child's ear, and sanitize equipment.
58	Gupta et al.	Community triage of otology patients using a store-and-forward telemedicine device: A feasibility study.	2017	India	3,000	video otoscopy	asynchronous	health workers who had basic secondary school degrees and an aptitude for social work	Capture digital image of tympanic membrane and ear canal, store it in memory of smart phone, upload it to website, and collect client case history.	ENT department	Three months	Anatomy and physiology of the ear, ear diseases, examining the ear, symptoms of ear diseases, community ear care, patient handling, eliciting clinical history. Training included direct observation in ENT clinic.
59	Brennan-Jones et al. *	Diagnosis of hearing loss using automated audiometry in an asynchronous telehealth model: A pilot accuracy study.	2017	Australia	42	pure tone audiometry	asynchronous	researcher	Conduct automated audiometry, instruct clients on testing procedure, place transducers on client, monitor progress of test.	No details	No details	No details
60	Yousuf Hussein et al.	Community-based hearing screening for young children using an mHealth service-delivery model.	2018	South Africa	6424	pure tone audiometry screening	synchronous	community health worker	Identify clients, collect client information, conduct audiometric screening using automated protocol.	No details	No details	Ear and hearing health care and its importance, hands-on practice with hearing screening smartphone application.
61	Venail et al.	Evaluation of otoscopy simulation as a training tool for real-time remote otoscopy.	2018	France	6	video otoscopy	synchronous	undergraduate 3rd year students with no previous experience of eardrum examination	Conduct video otoscopy, identify landmark features on the tympanic membrane.	No details	Two hours	Instruction on the external and middle ear anatomy, and practical training with an otoscopy simulator. Simulator training covered hand positioning, positioning and manipulation of the otoscope, and proper software use.
62	Ramkumar et al. *	Validation of DPOAE screening conducted by village health workers in a rural community with real-time click evoked tele-auditory brainstem response.	2018	India	119	Auditory Brainstem Response and Otoacoustic Emissions screening	synchronous	village health worker	Position child for testing, ensure child is asleep, place ABR electrodes on child.	No details	Five days	How to assist with conducting Distortion Product Otoacoustic Emissions and how to read and respond to screening instrument messages. Facilitators' competence was assessed following the training, and regular reviews were conducted.

63	Ramkumar et al.	Identification and management of middle ear disorders in a rural cleft care program: A telemedicine approach.	2018	India	160	video otoscopy	synchronous and asynchronous	community workers	Set up equipment, prepare participant for test, place probe in participant's ear, and conduct manual aspects of video otoscopy, tympanometry, and pure tone audiometry.	No details	Two days	Orientation to the ear and middle ear disorders, how to input demographic and patient history data to mobile application, and how to operate the video otoscopy device. Training included a hands-on module.
64	Ramkumar et al.	Cost and outcome of a community-based paediatric hearing screening programme in rural India with application of tele-audiology for follow-up diagnostic hearing assessment.	2018	India	1335	Auditory Brainstem Response and Otoacoustic Emissions screening	synchronous	village health worker	Collect client case history, conduct DPOAE screening, prepare child for ABR assessment (electrode placement, ensure child is asleep).	No details	No details	How to conduct hearing screening.
65	Masalski et al.*	Hearing tests based on biologically calibrated mobile devices: Comparison with pure-tone audiometry.	2018	Poland	70	pure tone audiometry screening	synchronous	audiologist	Assist client before, during, and after test by answering questions and preventing mistakes during testing.	No details	No details	No details
66	Hughes et al.	Measuring sound-processor thresholds for pediatric cochlear implant recipients using Visual Reinforcement Audiometry via telepractice.	2018	USA	17	cochlear implant programming	synchronous	audiologist or speech pathologist	Connect cochlear implant processor to programming cable, use toys to center child's attention during testing.	Audiologist	No details	Watched recorded clinical sessions and received direct instruction on procedures.
67	Govender & Mars	Assessing the efficacy of asynchronous telehealth-based hearing screening and diagnostic services using automated audiometry in a rural South African school.	2018	South Africa	73	pure tone audiometry screening	asynchronous	community member	Collect video otoscopy recordings, conduct audiometric screening using an automated protocol, set up equipment, instruct client on testing procedure.	Researcher	Two days	Overview of the hearing screening protocol and orientation to equipment, patient management, and troubleshooting, and included a practical component where the facilitator conducted a screenings under observation.
68	Brennan-Jones et al.*	Asynchronous interpretation of manual and automated audiometry: Agreement and reliability.	2018	Australia	42	pure tone audiometry screening	asynchronous	audiologist or researcher	Conduct automated audiometry.	No details	No details	No details
69	Yanov et al.	Successful application and timing of a remote network for intraoperative objective measurements during cochlear implantation surgery.	2018	Russia	50	intraoperative monitoring	synchronous	staff member	Set up equipment, handle equipment in the operating theatre.	No details	No details	Set up, use, and support the physical setup of equipment while in the operating room.
70	Jayawardena et al.	Expanding the capacity of otolaryngologists in Kenya through mobile technology.	2018	Kenya	87	pure tone audiometry screening	asynchronous	local nurse, community health worker, & non-governmental organization volunteer	Assist with aspects of iPhone-based otoscopy and mobile-based hearing screening, provide instruction as needed to patients during automated hearing testing.	No details	Two hours	Use automated screening, generate audiograms, conduct endoscopy.
71	Seimm et al.	Developing a synchronous otolaryngology telemedicine concordance clinic: Prospective study to assess fidelity and diagnostic.	2018	USA	21	video otoscopy	synchronous	experienced otolaryngologist	Perform otoscopy, discuss findings with client.	No details	No details	No details
72	Yulzari et al.	Mobile technology-based real-time teleotolaryngology care facilitated by a nonotolaryngologist physician in an adult population.	2018	Israel	48	video otoscopy	synchronous	final year medical student	Conduct smartphone otoscopy.	Otolaryngologist	No details	Use diagnostic equipment.
73	Yancey et al.	Pediatric hearing screening in low-resource settings: Incorporation of video-otoscopy and an electronic medical record.	2019	Kenya	155	pure tone audiometry screening and video otoscopy	asynchronous	community health worker	Conduct video otoscopy and hearing screening and upload results to mobile device.	Otolaryngologist	Two hours	Use automated audiometry and a mobile EMR application.
74	Erkkola-Anttinen et al.	Smartphone otoscopy performed by parents.	2019	Finland	41	video otoscopy	asynchronous	parent	Conduct smartphone otoscopy, send videos to study physician, take child to a physician when necessary.	Physician	One hour	Smartphone otoscopy, which the facilitator practiced first on other facilitators, and then the child (client).
75	Ameyaw et al.	Interregional newborn hearing screening via telehealth in Ghana.	2019	Ghana	50	Otoacoustic Emissions	synchronous	audiologist	Conduct DPOAE screenings, operate equipment.	No details	No details	No details
76	Demant et al.	Smartphone otoscopy by on-specialist health workers in rural Greenland: A cross-sectional study.	2019	France	124	video otoscopy	asynchronous	nurses, medical students, physicians	Conduct video otoscopy.	No details	No details	No details
77	Hatton et al.	Telehealth-enabled auditory brainstem response testing for infants living in rural communities: The British Columbia Early Hearing Program experience.	2019	Greenland	102	Auditory Brainstem Response screening	synchronous	audiometric technician	Greet client, prepare client for ABR, including electrode and transducer placement.	Audiologist	Three-four days	How to conduct ABR.
78	Shinn et al.	Community health workers obtain similar results using cell-phone based hearing screening tools compared to otolaryngologists in low resourced settings.	2019	Kenya	104	pure tone audiometry screening, video otoscopy	asynchronous	Community Health Worker or otolaryngologist	Perform audiometric screening and video otoscopy.	Otolaryngolgy residents	Two sessions	Hands-on mobile-based audiometry, screening audiometry, otoscopy.

79	Shah et al.	Smartphone telemedical emergency department consults for screening of nonacute dizziness.	2019	USA	30	Dix Hallpike	asynchronous	resident physician	Perform Dix Hallpike, use smartphone to record patient's eye movements.	No details	No details	No details
80	Ramkumar et al.	Implementation and evaluation of a rural community-based pediatric hearing screening program integrating in-person and tele-diagnostic auditory brainstem response (ABR).	2019	India	1480	hearing screening and Auditory Brainstem Response screening	synchronous	village health worker	Conduct DPOAE screening, assist in tele-ABR (prepping skin, placing electrodes and transducers, position child).	No details	Five days (six hours each day)	Powerpoints, handouts, videos, and hands-on: need for screening, conducive environments for screening, prepping skin for ABR, placing electrodes and transducer.
81	Eksteen et al.	Hearing and vision screening for preschool children using mobile technology, South Africa.	2019	South Africa	8023	pure tone audiometry screening	synchronous	community health worker	Conduct hearing screening using mobile screening device.	Audiologist	Five days	How to conduct hearing screening, use of equipment, assessment of responses.
82	Ravi et al.	Tele-audiological surveillance of middle ear status among individuals with cleft lip and/or palate in rural South India.	2019	India	109	video otoscopy, pure tone audiometry, tympanometry	asynchronous and synchronous	community-based rehabilitation workers	Conduct video otoscopy, set up videoconferencing session, place transducers on client.	Audiologist	No details	How to operate laptop, establish internet connectivity using a mobile hotspot, connect a microphone and web camera to establish videoconferencing, connect audiological testing equipment to laptops, place transducers on patient.