

Supplement

List of included studies provided in pages 21-26 of this supplement.

Table: Summary of digital health innovations (DHI) implemented for non-communicable disease (NCD) management in COVID-19 pandemic era.

SL No	Author last name	DHI	Summary of DHI	Communication medium/device	Non-digital/ non-remote component of DHI (if any)	Mode of delivery	Online platform used	Security/ ethical aspects	Financial aspects	Targeted NCD	Comparison
Mental health (Including neurological & neurodevelopmental disorders)											
1	Banks2021 ¹	Telemedicine Low-cost high Value E-care (LoVE)-virtual clinics	Telemedicine. Low-cost high Value E-care (LoVE)-virtual clinics. OPD clinic appointments over telephone calls, emails.	Telephonic calls, Emails	-	Remote	No online platform	Unclear	Unclear	Chronic epilepsy	Pre-pandemic data
2	Budhwani2021 ²	Virtual care management Part of Women's Virtual	Part of Women's Virtual. Virtual care and virtual registration, scheduling, check-in, management. Video and phone.	Video and phone	Option of in-person visits	Remote with option of in-person	Zoom, EPIC Electronic medical record (EMR) portal integrated MyHealthRecord	Secure; details unclear	Billing codes for phone & video visits	Mental health	Pre-pandemic data
3	Carroll2021 ³	Telehealth outpatient consultation and rehabilitation services	Telehealth video conference and call-consultations/ review, therapy, rehab, group and individual, interdisciplinary assessment.	Videoconference and call	-	Remote	MS teams, call	Unclear	Unclear	Mental health	None
4	Cooper2021 ⁴	Telemedicine Cognitive well-being intervention	Group-based, videocall, cognitive well-being intervention (multiple intervention domains).	Step-counting watch, food package, video call	Non-perishable food delivery; a step-counting watch; session materials provided to participants before intervention start	Both	Zoom	Unclear	Initial £18 worth food package provided to participants	Dementia	None
5	d'Arma2021 ⁵	"Virtual Instrument fOr healthy Lifestyle Adherence" Healthy lifestyle promotion	"Virtual Instrument fOr healthy Lifestyle Adherence" lifestyle promotion (multiple intervention domains). Computer or phone.	Computer or phone	-	Remote	VIOLA app (Virtual Instrument fOr healthy Lifestyle Adherence)	Unclear	Unclear	Multiple sclerosis	None
6	Davenport2021 ⁶	Pre-clinic triage	Person-centred care: Data collection, storage,	Unclear	-	Remote	InnoWell platform	Unclear	Unclear	Mental health	None

			scoring, transmission, self-management, early intervention, shared decision making, routine outcome monitoring. Personalised, measurement-based care model of care.								
7	Di Lorito ²⁰²¹ ⁷	Tele-rehabilitation	Tele-rehabilitation- Video patient consultation.	Video	-	Remote	Q-health	Secure access by one-time use code	Unclear	Dementia	None
8	Gromatsky 2021 ⁸	VA Caring for Our Nation's Needs Electronically.	VA Caring for Our Nation's Needs Electronically behavioural therapy, psychoeducation & support. Telehealth	Phone	-	Remote	VA CONNECT, Qualtrics, VA WebEx and/or VA video connect (VVC)	Encrypted, Health Insurance Portability and Accountability Act (HIPAA)-compliant Veterans health administration (VHA) videoconferencing platform	Health Insurance Portability and Accountability Act (HIPAA)	Mental health	None
9	Guan ²⁰²¹ ⁹	FOCUS program Virtual continuity of care including rehabilitation and support	FOCUS program. Virtual multidisciplinary continuity of care visits by telephone/online tele-health platforms. Monitoring, management, guidance, assistance, rehabilitation, recovery support.	Mobile phones and tablet computers	Option of in-person visits	Remote with option of in-person	Zoom	Privacy-compliant	Limited mobile phones and tablet computers, with data plans, mobilized from public and corporate donors.	Mental health	None
10	Hom ²⁰²⁰ ¹⁰	Virtual/remote partial hospital program (PHP) Stepping down from In-patient care management	Virtual/remote partial hospital program (PHP) based on day of care. Packet emailed to patient with information and resources/ handouts. Videoconferencing. Group meetings. Individual tutorial, assessment and goal setting, behavioural therapy, meeting, after care planning, individualized therapy	Email, video, videoconferencing, patient package	Evaluation of patient by inpatient team	Both	Zoom	Unclear	Unclear	Mental health	None

			planning, medication management, therapy sessions, vocational counselling, 1 family meeting (encouraged)								
11	Kidorf2021 ¹¹	Medminder "Jon" version electronic pillbox Take home medicine management	Commercially available Medminder "Jon" version electronic pillbox. Take-home medicine management: alerts/audio & visual prompts, pre-programmed time windows & auto unlock at medication time. Staff reprogrammable, monitoring (e.g. suspected tampering), support & counselling.	Pillbox, Telephonic call	In-person refill visits, nurse monitoring, prescription cards	Both	Medminder website.	HIPAA-compliant. Secure cloud-based server (without patient identifiers) via an autonomous cellular signal independent from patient cellular access.	Monthly pillbox lease costs covered by Johns Hopkins Bayview Medical Center (\$40.00/pillbox; ~\$1.00/day). HIPAA-compliant	Substance abuse disorder	None
12	Kim2021 ¹²	Exercise management strategy	Remotely supervised technology-based, reinforcing, and multimodal exercise management strategy. Recorded video-guided exercise, reminders. Individualized monitoring and management.	Smartphone, Videos	For app install on smartphones and information provision.	Both	Customized app	Unclear	Unclear	Parkinsonism	None
13	Levinson2021 ¹³	Telehealth exposure-based Intensive outpatient program (IOP)	Telehealth exposure-based IOP (includes all initial assessment & intake procedures). Individual multidisciplinary meetings, group meetings. Meals eaten in group setting &/or with individual therapists.	unclear	-	Remote	Zoom	Unclear	Unclear	Eating disorders	None
14	Lima2021 ¹⁴	Clinical telemedicine using hybrid face robot Cognitive engagement and mental health support delivery	Clinical telemedicine using hybrid face robot for cognitive engagement and mental health support delivery. Multi-modal robotic framework with animated emotions	(Clinician room) laptop with robot's control, Bluetooth wireless microphone (Patient room in clinic) Tablet with hybrid face robot, webcam to	-	In-person	Hybrid face robot. Voice system with cloud-based AI support	Unclear	Low cost	Dementia	None

			representation. Voice system with cloud-based AI support. Telemedicine at SCARF with a dementia patient. Robotic affective communication (Wizard of Oz).	capture participant's emotions 2 phones: Troubleshoot 2-way voice communication							
15	Locke2021 ¹⁵	Telemedicine program Virtual mental health and behavioural change intervention	Telemedicine program: Virtual mental health and behavioural change intervention. Individual and group classes and therapy including yoga. Live, synchronous, 2-way interaction between HABIT dyads and HABIT staff.	Computer/laptop with web camera and microphone	-	Remote	Mayo Clinic's Video Anyplace Telemedicine program via Zoom; supported by Mayo Clinic's Connected Care Video Support Team.	HIPAA compliant	HIPAA-compliant. Other details unclear	Mild cognitive impairment	Pre-pandemic face to face treatment model
16	Looi2021 ¹⁶	Telepsychiatry consultations and psychotherapy	Telepsychiatry consultations- individual and group psychotherapy video and telephone consultations. Videos and articles, discussions, instructions and support, medication management	Video and telephone	Option of in-person visit	Remote with option of in-person	Video & telephone/audio software platforms	Cybersecurity challenges encountered	Medicare benefits schedule	Mental health/psychiatry	In-person consultation from July 2018 to June 2019
17	Mesika2021 ¹⁷	Telehealth psychotherapy	Telehealth meetings, group therapy (including dance therapy), activity and psychotherapy. Mobile phone videos, online and outdoor therapy.	Voice call, voice conference call, and video	Initial in-person interview, outdoor group sessions within the hospital (e.g. basketball field and the gardens)	Both	WhatsApp	Unclear	Unclear	Chronic post-traumatic stress disorder (PTSD)	Treatment as usual group (Or Standard care)
18	Malka2021 ¹⁸	Telepsychiatry therapy & support	Telepsychiatric visits, follow up, maintenance care, tele-clinic therapy.	Computer	-	Remote	Zoom API version 2.0.0	Details unclear; only that it was approved by Ministry	Unclear	Adult depression	None
19	Motolese2021 ¹⁹	Remote patient monitoring (RPM)	Remote patient monitoring self-evaluation, monitoring, email and video instruction (in app). Smartphone-based neurological tests (iOS and Android). Phone call, email.	Smartphone-based neurological tests (iOS and Android), Phone call, email, video	-	Remote	Encephalog HomeTM smartphone application (Montfort Brain Monitor LTD)	Anonymized app data. Secure transmission (using HTTPS); Azure for data store and processing	Unclear	Parkinsonism	None

20	Nicholas2021 ²⁰	BRACE project Telehealth therapy	Part of BRACE project. Telehealth service delivery via videoconferencing. Therapy, risk assessment, management. Computer or smartphone with microphone, video.	Videoconferencing. Computer or smartphone with microphone, video	In-person review in clinical exceptions	Remote unless in-person required	Unclear	Unclear	Unclear	Mental health	Pre-pandemic data
21	Palma2021 ²¹	Palliative Hospital-Centered Spiritual and Psychological Telehealth System	Palliative Hospital-Centered Spiritual and Psychological Telehealth System, a mobile palliative care team, synchronic videoconferences.	Videoconferences, 2 Ipads, 2 smartphones with camera & audio	At least one in-person assessment and information delivery	Both	Zoom, WhatsApp	Anonymous electronic database	Unclear	Mental health/life-limiting illness	None
22	Panda2020 ²²	Teleconsultation, therapy and support	Teleconsultation: disease review, prescription, medication and adverse effects management, advice, counsel, treatment, follow-up teleconsultations were not arranged follow-ups. telephone calls, SMS, text, picture, video messages- Multiple modes for compliance, to avoid errors/ misinterpretation/	Telephone calls, SMS, text, picture, video messages- Multiple modes for compliance, to avoid errors/ misinterpretation	-	Remote	WhatsApp	Unclear	Unclear	Child epilepsy, other neurological disorders with epilepsy	None
23	Paul2020 ²³	Tele-psychotherapy	Tele-psychotherapy sessions, VR headset for simulation and data collection. Activity engagement between sessions.	VR headset	-	Remote	Zoom	Unclear	Unclear	Major depressive disorder	None
24	Peralta2020 ²⁴	Teleconsultation	Special telephone service with exclusive line with telephonic contacts & schedules of specialists: free care and referral through calls, video calls, or text message.	Calls, video calls, or text message	In-person evaluation when required	Remote unless in-person required	*462 emergency operations center	Unclear	Free, without requiring a specific contract with a telephone carrier	Mental health	None
25	Ping2020 ²⁵	Ultra-brief psychological interventions (UBPI)	Ultra-brief psychological interventions (UBPI) modified. Virtual PFA for	Phone	-	Remote	Web-based platform, COVID-	Unclear	Unclear	Mental health	None

		Tele-mental health and psychosocial support service. Hotlines.	psychological interventions based on 'look, listen and link'.				care web chat portal				
26	Pollard2021 ²⁶	Telehealth therapy	Telehealth service delivery of ABA treatment. synchronous videoconferencing. 3 models: technician-delivered, caregiver-assisted, caregiver-implemented telehealth model.	Smartphone, computer, and tablet	-	Remote	Not specified/Unclear	HIPAA compliant teleservices; privacy protection	Patient insurance plan. HIPAA compliant. Provision of technology &/or Wi-Fi for some.	Autism spectrum disorders	Telehealth model prior to direct treatment telehealth model
27	Puspitasari2021 ²⁷	Adult transitions program tele behavioural therapy and support	Adult Transitions Program (ATP). Tele-therapy programme: video teleconferencing individual and group-based interventions for targeted symptom management, recovery support, discussion, therapy/ behavioural interventions.	Smartphone, laptop, or computer, videoconferencing	In-person session when required	Remote unless in-person required	Zoom	HIPAA-approved encrypted software	HIPAA compliant. Other details unclear	Transdiagnostic psychiatric conditions	None
28	Ravindran2020 ²⁸	24/7 National Helpline for psychosocial support and mental health services	24/7 National Helpline for Psychosocial Support and Mental Health Services. Crisis helpline for psychosocial support. IVRS telephone call with professional support, call forwarding, follow-up. Linkage with network of local resources and professionals as needed. they need.	Telephone	-	Remote	IVRS phone call	Unclear	Free	Mental health	None
29	Rojas2021 ²⁹	Cognitive-behavioral therapy for suicide prevention (BCBT-SP) Clinical video telehealth (CVT)	Clinical video telehealth (CVT) for cognitive-behavioral therapy for suicide prevention (BCBT-SP). Video/ phone sessions: targeted behavioural intervention, maintenance.	Video/ phone	-	Remote	Clinical video telehealth	Unclear	Unclear	Mental health	None

30	Sennott2020 ³⁰	Telehealth outreach well-being support	Tele-outreach to supplement care. Telephonic needs assessment, scheduling, referrals, resources.	Telephone		Remote	Unclear	Unclear	No-cost services	Parkinsonism	None
31	Shah2021 ³¹	Teleconsultations and management	Online Text-based intervention for identification and management (including contingency management), discussion.	Telephone, text	-	Remote	WhatsApp messenger. Monkey Platform could be assessed by only one of the investigators. Whenever physical abuse was reported, it was handled keeping with international best practice in ethics	Authorized access. International best ethics practices-compliant management of physical abuse complaints	Unclear	Attention deficit hyperactivity disorder (ADHD)	None
32	Sharma2020 ³²	Tele-mental health learning services	Real-time interactive videoconferencing. Online program for clinic-to-clinic and at home services. Didactic self-administered modules, post-test on the. Clinic-to-clinic observation of TMH session.	Phone	-	Remote	Direct-to-consumer (DTC) platforms, hospital's learning center	Unclear	Unclear	Child psychiatry	None
33	Sun2021 ³³	Mindfulness for growth and resilience mindfulness-based learning mHealth	Mindfulness-based mHealth "Mindfulness for Growth and Resilience". Videoconferencing experiential & group meetings, didactic learning videos, audio recordings, journaling option. Tailored text responses. Asynchronous group communication and discussion (messaging-based group).	Text, picture, audio-based messages		Remote	Zoom, WeChat-based mini-program	Unclear	Unclear	Mental health	Social support-based mhealth Zoom and WeChat
34	Tunuguntla2021 ³⁴	Yoga of Immortals (YOI) therapy	Yoga of Immortals (YOI) intervention:	Mobile	-	Remote	Yoga of Immortals (YOI) app	Unclear	Unclear	Insomnia	None

			video and audio sessions (including yoga, exercises, sound therapy, meditation)								
35	Vukc ² evic ² Markovic ² 020 ³⁵	Online expressive writing intervention	Expressive writing intervention sessions	Email	-	Remote	Online platform unclear	Password-protected data	Free support & materials	Mental health	Treatment as usual. Informal support through families, friends and networks
36	Weintraub ² 2021 ³⁶	Caroline County TeleMedicine mobile treatment unit (TM-MTU) initiative	Caroline County TM mobile treatment unit (TM-MTU) initiative patient-centered recovery support services. Integrated telemedicine (videoconferencing) & mobile services (remote buprenorphine prescription) Doctor-on-a-screen encounters conducted in treatment facilities in rural communities. Screening, individual counselling, scheduling, follow-up. Point-to-point interactive video conferencing sessions. electronic prescription to a local pharmacy post-TM, self-pick up of medications.	Videoconference	Assessment and point-of-care test before appointment scheduling	Both	Video conferencing. Epic Systems Corp (EPIC) and PatTrac databases. Modified recreational vehicle, backup power supply	HIPAA–via internet protocol connections	HIPAA compliant. Fully covered by Medicare, Medicaid, private insurance schemes	Opioid use disorder	None
37	Wightman ² 021 ³⁷	Emergency department (ED) Call back Harm reduction services and addiction treatment	Emergency department (ED) Call back pilot project: Telephone calls, offered naloxone, harm reduction resources, peer recovery program, treatment	Telephone, text, mail, email	Home delivery of naloxone	Both	No online platform	Unclear	Unclear	Opioid overdose	None

			referrals, service availability update								
38	Yellowlees 2020 ³⁸	Virtual Telepsychiatry Clinic consultations	Virtual Telepsychiatry Clinic. Initial telephone consultation. Phone calls and voice mails intimation. Videoconferencing for appointment.	Phone calls and voice mails	-	Remote	Epic's MyChart, Zoom	Unclear	Financially viable clinic	Mental health	None
Cardiovascular disease											
1	Nogueira2021 ³⁹	Telemedicine consultations and management	Teleconsultations to assess care type, scheduling, prescription and drug management, home-based phlebotomy.	Telephone, SMS, email	Urgent/ emergent in-patient elective diagnostic and therapeutic procedures. Stress tests cancelled due to COVID-19 constraints	Both	Probably no online platforms	Unclear	Free (covered by National health service budget)	Chronic heart failure	Standard of care
2	Bakogiannis2021 ⁴⁰	The Hellenic Educational Self-care and Support Heart Failure app [ThessHF app]	The Hellenic Educational Self-care and Support Heart Failure app [ThessHF app]. Patient-oriented mHealth app. App-directed alerts to contact providers, measurement, symptom tracking, measurement, education, reminder, gamification, visualization, in diabetics.	Mobile	Perusal of app history patient visits to hospital	Both	ThessHF app	No user data transmitted (medico-legal challenges). No user data prior to app download	Unclear	Heart failure	None
3	Batalik2021 ⁴¹	Telerehabilitation and support	Telerehabilitation- home-based exercise, teleconsultation, telemonitoring training, education and motivation. Participant profile creation. Remote coach. Scheduled telephone feedback.	Telephone, computer or mobile	In-person walking tests evaluation, education at hospital. Lent web platform -compatible devices. Optional contact with physiotherapist at centre	Both	PolarFlow web platform	Shared password and access only to authorized persons; secure external hard drive.	Unclear	Coronary heart disease	None
4	Lalande2021 ⁴²	Healing Hearts Together (HHT) Couple telepsychology	Healing Hearts Together (HHT) couples-based intervention including telepsychology via	Email, camera & mic, smartphone/ laptop/ tablet/ chromebook/ desktop	In-person visits for assessments	Both	Web-Based HHT Intervention and Research Protocol. Web-	Secure delivery of intervention. Hospital-approved	Unclear	Cardiovascular disease	Regular care

			videoconferencing. Electronic materials/resources, Didactic presentations, videos, group and couple discussions, Feedback, contingency planning, conflict resolution, exercises (homework), email, camera & mic, smartphone/ laptop/ tablet/ chromebook/ desktop.				based collaborative workspace	secure platform linked with hospital's secure EMR software.			
5	Li2020 ⁴³	Telemedicine consultation	Telemedicine consultation	Telephone call, video camera/video link or smart phone	-	Remote	Online platform unclear			Vascular patients	None
6	McLachlan 2021 ⁴⁴	Telehealth consultations & support	Telehealth programme. Self-monitoring using device, nurse practitioner (NP)-led telephone support, consultation, guidance, reviews, follow ups.	Text, phone call	In-person option available. Provision of devices for self-monitoring.	Both	Zoom, email, new electronic ePrescription and eLabform process	Unclear	Funded devices for self-monitoring	Heart failure	None
7	Rosman2021 ⁴⁵	Virtual Atrial Fibrillation (AF) self-management program.	AF-At-Home Program. self-monitoring, skill development, and behavioral risk factor modification. automated EHR algorithms screening. group sessions, platform. email. Didactic instruction, interactive group discussion. diverse group of health care professionals. education. digital educational materials and website links to video recordings of the didactic portion of the session	smartphone, tablet, or computer.	-	Remote	EHR-based patient portal (i.e., EPIC MyChart), video-conferencing	secure video-conferencing platform	Unclear	Atrial fibrillation	None (Pre-post)
8	Scherrenberg2021 ⁴⁶	Tele psychological consultations, counselling and support	Interactive live group session: education, dietary advice, option for website	telephonic/ Jitsi, podcasts	-	Remote	Rehabilitation centre website, Facebook, LinkedIn, Jitsi	Unclear	Payment for service	Cardiac	None

			journaling, telephonic/ Jitsi discussions, Psychological counselling: Interactive live group sessions & individual consultations, live group exercises with specialist, telephonic advice.								
9	Wali2021 ⁴⁷	Medly program Telemonitoring	Videoconferencing visits/ telephone calls. Medly program, smartphone, self-monitoring and -report with devices, self-report questions.	Videoconferencing visits/ telephone calls, smartphone	-	Remote	Medly app	Unclear	Unclear	Health failure patients	None
10	Yiaslas2020 ⁴⁸	Heart disease reversal program TeleManagement	Heart Disease Reversal Program- interdisciplinary lifestyle interventions. videoconferencing of consultation-referral within the EHR, group appointments, electronic sharing of materials and messaging of logs. Telephone screening. Education and guidance, stress management. Option of indoor home exercise (poor air quality due to California fires). consult/referral process via videoconferencing. group sessions, diet/ nutrition component, physical activity, stress management training, and medication management.	Videoconferencing	-	Remote	VA COVID Coach app, Cisco Webex when VA Video Connect faced tech barriers	Secure messaging	Unclear	Heart disease	None
11	Zhao2021 ⁴⁹	Part of ReACT program Telemanagement & support	Part of ReACT program. Virtual multidisciplinary clinic for management. Online or telephone. Scheduling, remote interrogation, review of data including	Telephone	-	Remote	Zoom interface integrated with Epic EMR, WeChat-based mini-program	Unclear	Unclear	Health failure patients with CRT devices	In-person visit group during the period of intervention

			medications, management. No physical exams/ tests								
Cancer											
1	Aghedo2021 ⁵⁰	Tele-multidisciplinary clinic (MDC)	Tele-multidisciplinary clinic (MDC): Single supervised guided telehealth encounter at the clinic. Patient presence at clinic (to remove technological barriers) required for assisted remote encounter with multiple specialists.	Phone, desktop computer	Initial staging workup	In-person	Zoom	Institutional platform with increased cybersecurity. Secure link.	Unclear	Colon, rectal, anal, recurrent uroepithelial carcinoma cancers	None
2	Berlin2021 ⁵¹	Virtual care management system (VCMS) using Agile service design process	Virtual Care Management System (VCMS) using Agile service design process. Telephone or video appointment. Scheduling, documentation, rapid contextualization, order communication. Email, phone call, mail.	Email, phone call, mail, and video	Based on triage: in-person visit, reschedule or delay the visit.	Both	Browser-based application integrates with the enterprise scheduling system Pathways Healthcare Scheduling (McKessonCorp) and electronic medical record system (QuadraMed Corp). OTN, MS Teams	Secure remote access (Citrix Receiver, Citrix Systems Inc, US)	Unclear	Cancer	None
3	Brown2021 ⁵²	"Virtual-Hybrid Approach to clinic" Telemedicine services	"Virtual-Hybrid Approach to clinic", telemedicine services and referral. Smartphones, iPads, and tablets, with direct web browser video links from the electronic health record mobile application. Direct video calls. Electronic triage, assessment, consultation, referral, management, referral network.	Smartphones, iPads, tablets, and video call	Physical patient visits eventually integrated	Both	Telemedicine platforms integrated with Epic and /or using Doximity video call function	Unclear	Unclear	Breast, lung, and hematologic cancers	None

4	Chen2021 ⁵³	Teleconsultation and medication management	Remote real-time patient consultation, assessment, online prescription generation, drug dispensing alert system, automatically generated delivery service tracking number, instructions, tracking and refund patient request, chat support.	Mobile, mobile phone camera (on demand) Android and iOS	Home delivery of medications	Both	Cloud Sun Yat-sen university cancer center (SYSUCC) app for therapeutic interface -private cloud- integrated with internal Hospital information system (HIS) using web services internet tool	Unique staff ID & password, verification by automated drug rationality review system integrated into cloud-based HIS	Registration fee for Cloud SYSUCC increased from US \$7 to US \$70/ user during intervention	Cancer	None
5	Emard2021 ⁵⁴	Virtual mind-body program	Virtual mind-body program with live integrative medicine via videoconferencing. Registration, group therapy sessions (e.g., fitness, yoga, tai chi, dance & music therapy, meditation), feedback, discussion	Videoconferencing	-	Remote	Zoom, Patient messaging portal	Unclear	Unclear	Cancer	None
6	Gardner2021 ⁵⁵	Tele-neuropsychology continuity of care	Tele-neuropsychology (direct-to-home) continuity of care services. video conferencing via telephone/ computer/ tablet/ combination. virtual assessment and substitute tests.	Telephone, computer, tablet, combination, and video conferencing	Option for in-person visits	Remote with option of in-person	Unclear	Encrypted technology; stand-alone platform transitioned to software embedded in EMR portal; private and quiet space, patient destruction of written/or drawn items at session end.	Unclear	Cancer	In-person visits
7	Gothe2021 ⁵⁶	STAYFit exercise management intervention	STAYFit remote at-home synchronized group exercise classes, live instructor for cognitive function improvement. Group exercise or individualized.	Computer, tablet, smartphone	-	Remote	Zoom	Unclear	Unclear	Adult cancer survivors	Three groups (Hatha Yoga, Stretching-toning) with in-person sessions

8	Karacin2021 ⁵⁷	Teleconsultation/ telemedicine based on clean and pandemic hospital	Telemedicine management based on telephonic assessment of COVID-19 risk-consultation, scheduling, referral. Based on 2 pandemic hospitals and 1 clean hospital separate teleconsultation/ telemedicine based on those receiving CT (clean hospital) and those not receiving CT (pandemic hospital).	Unclear	Clinic visits for procedures to pandemic hospital	Remote, both for certain patients	Unclear	Unclear	Unclear	Cancer	Admission data of previous year of pandemic
9	Knoerl2021 ⁵⁸	Tele-yoga intervention	Virtual yoga intervention. Individualized, expert and self-guided (videos). discussions.	Telephonic, email, videos	Received yoga balls and blocks	Both	Zoom	Patient privacy preserved. No direct observation of patient practice by instructor	Free parking vouchers when attending yoga sessions at center	Breast, gastrointestinal, gynecological cancer survivors with chronic chemotherapy-induced peripheral neuropathy pain	Regular care
10	Lonergan2020 ⁵⁹	Tele-clinic visits	Televisits via video conferencing platform with a pre-existing workflow.	Phone call, video conferencing	In-person visits for specific, urgent cases.	Both	Zoom	HIPAA compliant. Login required	HIPAA compliant. Other details unclear	Cancer	Pre-COVID video consultation
11	Marchese2021 ⁶⁰	Virtual pharmacy care model	Telepsychology, multidisciplinary. video and phone based (discontinued coverage on thoracic cancer team).	Telephone, phone or laptop with video capabilities.	In-person interaction if not suitable for virtual interaction	Remote unless in-person required	Microsoft Visio software for workflow	Unclear	Unclear	Cancer	None
12	MyersVirtue2021 ⁶¹	Tele-psychology	Telepsychology, multidisciplinary. video and phone based (discontinued coverage on thoracic cancer team).	Telephone, phone or laptop with video capabilities	Option of limited in-person appointments	Remote with option of in-person	Unclear	Unclear	Unclear	Cancer	Referral data from the previous year of pandemic

13	Patt2021 ⁶²	Remote patient symptom management	Remote patient symptom management via an ePRO digital remote monitoring tool. self-reported, real-time notification and triage, nurse tracking and follow up.	Email, smartphone, e-mail, text	Optional symptom report collection by nursing staff for patients with technological barriers.	Remote with option of in-person	Health Tracker, an ePRO platform, care coordination dashboard	Unclear	Unclear	Cancer	None
14	Pritchett2021 ⁶³	Mayo Clinic COVID-19 RPM program	Mayo Clinic COVID-19 Remote patient monitoring (RPM) program: Passively data collection, patient alerts, self-measurement, assessment, patient-generated data trigger alerts parameters.	Patient given cellular-enabled tablet preloaded with vended clinical RPM software, preconnected, Bluetooth-enabled devices	-	Remote	Tablet preloaded with vended clinical RPM software. integrated with the EHR (Epic). Resideo Life Care Solutions, WI	Unclear	Patient given cellular-enabled tablet preloaded with vended clinical RPM software, preconnected, Bluetooth-enabled devices.	Cancer	Outpatient data without RPM
15	Specht2020 ⁶⁴	Telehealth pre- and post-operative services	Virtual patient portal and telehealth services for pre- & post-operative consultation and patient evaluation.	Unclear	Same-day approach to breast reconstruction-novel same-day surgery protocol	Both	Virtual patient portal	Unclear	Unclear	Breast cancer	None
16	Steimer ⁶⁵	RPM program	RPM. Education, self-monitoring and entry, clinical recommendations, emergency calls.	Call	Patients provided devices, a configured Apple iPad to enter vital results. Option for in-person visit to emergency department	Both	Patient dashboard for clinicians, Locus Health platform	Password-protected patient dashboard, secure portal	Established patients reimbursed by Centers for Medicare & Medicaid services	Cancer	None
17	Yerram2021 ⁶⁶	Telemedicine visits & CPS intervention	Telemedicine visits. Virtual desktop access & other technology. CPS interventions: drug acquisition, medication optimization, drug information and safety, patient education	Virtual desktop access and other technology. Telephone	Certain medications shipped to patient directly	Remote	NS	Unclear	Unclear	Cancer	None
Diabetes											

1	Alromaihi2020 ⁶⁷	Telemedicine consultation and medication management	Telemedicine. Remote consultations, drug entry integrated with pharmacy tracking and coordination for pick-up or delivery/ medication refill, transfer of data from patient devices. remote clinics to patient door	Video/ audio calls over smartphones donated by telecom provider, landlines, remote clinics to patient door	In-person consultations at hospital. Remote clinic using hospital's home health care cars. Team downloads patients' data and adjusts settings.	Both	Upgraded EHR	Unclear	Smartphones donated by telecom provider, landlines,	Diabetes mellitus	None
2	Braune2021 ⁶⁸	Digital diabetes clinic using service design methods	Digital diabetes clinic using service design methods. Remote consultations, scheduling, data upload and review, management, training. training to use software. Web-based video chat app.	Webcams with integrated microphones and speakers provided. Computer, tablets, smartphone cameras	-	Remote	Patientus [Jameda Gesellschaft mit beschränkter Haftung]. Tidepool platform (Tidepool Project). Server-Charité – Universitätsmedizin Berlin. Dexcom Clarity (Dexcom Inc) and Abbott FreeStyle LibreView (Abbott Diabetes Care Inc) also used by some participants	Secure platform. Adapted to hospital's IT infrastructure and local data protection requirements	Sensor and pump supplies fully covered by patient health insurance (public/private). Webcams with integrated microphones and speakers provided	Pediatric diabetes mellitus	None
3	Fraticeili2020 ⁶⁹	Web-based nutritional intervention	Web-based group interactions, feedback, one-to-one chat (when web platform not user friendly), self-measurement at home.	Unclear	In-person visits for outcome assessment	Both	Web-based platform	Access using personal credentials	Free and reusable tools or material	Type 2 diabetes, impaired glucose regulation in overweight, obesity	In-person traditional face to face individual and group-based intervention
4	Hanson2020 ⁷⁰	Low carb program health app. Remote digital health intervention	Remote digital health intervention personalized and structured content. Tailored Low carb	Video conferencing sessions, telephonic, email, smartphone, print, videos, and	Offered initial in-person consultation. Physical "starter pack" for digitally excluded patient. Ongoing	Both	Low Carb Program App streamlined National health	Unclear	Unique code-enabled free app activation of	Diabetes mellitus	Data from group educational

			program: education, strategies, visualization, self-monitoring, discussion board, searchable library, telephonic review, virtual meetups through coached video conferencing sessions, peer support networks, feedback. Self-monitoring data submission (via digital tools.)	podcasts. Telephone (esp. for digitally excluded patients)	input & follow-up with hospital-based as part of usual care		service (NHS) approved medical device ("Software as a Medical Device"). Connection of their wearables to online platform		the app (downloaded from NHS App Library). No cost to patients		sessions between 2016 to 2019
5	Jiwani2020 ⁷¹	Behavioral lifestyle intervention	Smartphone-based behavioral lifestyle intervention: Self-monitoring, goal setting, feedback, mindful eating, social support, rewards, problem-solving, relapse prevention, and handling holidays, support. Group sessions. Self-measurement and recording on Fitbit.	Fitbit, smartphone	In-person group sessions. Fitbit provided to all	Both	Webex, Fitbit app	Unclear	Unclear	Type 2 diabetes mellitus	None
6	Jones2020 ⁷²	Virtual co-management service Teleconsultations	Virtual co-management service. Automatic consults for COVID-19 patients. Telephonic patient/family interview. Electronic/telephone consultations, rounds.	Telephonic	-	Remote	Cisco Webex. Epic reports	Unclear	Unclear	Diabetes mellitus	Before implementation of DCT during May 2019 to January 2020
7	Leon-Vargas2021 ⁷³	Remote diabetes management	Remote patient communication, device data review, visualization, information retrieval and transmission (via uploader using USB connection). Web, Mobile, and Uploader.	Web, mobile, and uploader. Smartphone (iOS or Android) and computer	In-person visits for screening and follow-up.	Remote	Tidepool cloud-based software platform	Random assignment of numeric username & password. Anonymised accounts.	Free to use cloud software	Type 1 and Type 2 diabetes mellitus	None

8	Luzi2021 ⁷⁴	Tele-monitoring for remote care continuity Remote glucose control system	Tele-monitoring for remote care continuity. Remote glucose control system (Flash Glucose control).	Phone, mail, email	-	Remote	LIBREVIEW® platform	Unclear	Unclear	Type 1 and type 2 diabetes mellitus	Diabetes patients on insulin but non-users of LIBREVIEW platform
9	Mackenzie 2021 ⁷⁵	Massive Open Online Course for self-management	MOOC for self-management of diabetes. Structured education with interactive content, discussion boards, goal setting, assessments, surveys, summary course emails. Facebook and Twitter livestream with professionals. Registration, progress tracking, personalized certificates. developed using LearnDash WordPress LMS plugin software, and in line with web content accessibility guidelines (WCAG level AA).	Unclear	-	Remote	MyWay Digital Health Ltd (MWDH) portal, Facebook, Twitter, GravityForms	Site's privacy policy	Free, open access	Type 2 diabetes mellitus	None
10	Zeller Jr.2021 ⁷⁶	Diabetes Reporting Telemedicine support	Telemedicine. Diabetes Reporting. Initial online visit with specialist. Online conferences on support (psychological, technological). Group sessions.	Unclear	-	Remote	Diabetes Reporting (peer-reviewed software)	Unclear	Unclear	Type 1 diabetes mellitus	Type 1 diabetes patients from Exchange registry in the 3 months period prior to the survey
Chronic respiratory disease											
1	Jangalee2021 ⁷⁷	Home-based virtual pulmonary rehabilitation program with RPM	Home-based virtual multidisciplinary pulmonary rehabilitation program.	Laptop, PC, tablet	Participants provided with monitoring	Both	Zoom, optional mobile app, email	Anonymized data (random six-digit identifier) authorized	Unclear	Chronic lung disease	None

			RPM system integrated with video-conferencing, connected smart devices. Real-time access to/ monitoring of health data and adherence. Safety checklist. Mobile app for motivation and reminder.		devices prior to program commencement		web-dashboard, mobile app	access to patient data; no recording of session for preserving privacy. Encrypted retained data.			
2	Philip2020 ⁷⁸	Singing for lung health (SLH) intervention	Singing for lung health (SLH): online singing exercise sessions	Compact disc also given	-	Remote	Zoom	Unclear	Unclear	Chronic obstructive pulmonary disease (COPD)	Regular services
Chronic liver disease											
1	Motz2021 ⁷⁹	Telehealth exercise management	Telehealth exercise training programs. Outdoor/ at-home training, real-time direct supervision and feedback, fitness activity trackers with heart rate monitors, dietary counselling. Mobile device.	Mobile device	-	Remote	Audio-visual telehealth platform	Unclear	Unclear	Non-alcoholic fatty liver disease	None
Multiple NCD domains											
1	Kesavadev 2021 ⁸⁰	Telemedicine for patient management/ in-patient level care	Telemedicine for patient management. Group educational webinars/ sessions. Virtual COVID in-patient (VCIP) care. Virtual at-home inpatient-level care. Targeted audio-video consultations, assessment, review, therapy, follow-up, home self-monitoring, training, psychotherapeutic counselling, referrals.	Audio-video	Home delivery of devices, medications. Home laboratory tests.	Remote	WhatsApp (group with care team), Zoom	Unclear	Unclear	Multiple NCDs/ comorbidities	None
2	Pareyson2021 ⁸¹	Neuro-telemedicine services, including tele-visits and tele-neurorehabilitation	Comprehensive, multidisciplinary and multidimensional, neuro-telemedicine services, including tele-visits and	Video conferencing platforms, voice or video-call, resources via email. Computer with AV equipment.	-	Remote	Teams; Microsoft 365. online dyslexia platform (RIDinet,	General data protection regulations (GDPR)- compliant secure connection, compliant; licensed	No regulation or pricing for certain adult patients	Chronic neurological disorders	None

			tele-neurorehabilitation using video conferencing platforms continuity of care. consultation, rehab, monitoring, coaching, support, remote assessment, follow up, specialized management. voice or video-call, resources via email. computer with AV equipment.	2 monitors (physicians, whenever possible)- 1 -to see patient, 2nd - electronic clinical record prep, & to see documents, history etc.			with Reading Trainer app). Not used insecure platforms despite requests- emails, phone calls, WhatsApp, text messages	platform. Password-protected documents to certain patients (password conveyed verbally during televisit). Sharepoint system (Microsoft 365) with regulated access- privacy and data protection			
3	Songsermpong2021 ⁸²	Teleconsultations	Telemedicine. NCD clinic text-messaging accounts. 24/7 online real-time/ asynchronous teleconsultations. Facebook page for patient inquiries & follow-up.	Text	Option to: -Medication pick-up by patient/ relative at district hospital and HPH -Drive-through facility at district hospital providing prescribed medications from a window - Home delivery of devices, medicines - Home monitoring by community health volunteers (CHVs)	Remote with option of in-person	LINE, Facebook	Secure Facebook page	Universal health coverage (UHC) via 3 public health insurance schemes	Hypertension and diabetes	None
4	Wu2020 ⁸³	Telehealth for palliative care family conferences with shared decision making	Telehealth-based family conferences, multidisciplinary team. Shared decision making & the value, acknowledge, listen, understand, and elicit (VALUE) integration. Team talk, option talk (treatment discussion, symptom management, discharge planning), decision talk (advanced care planning), evaluation.	Smartphone		Remote	Video software	Unclear	Unclear	Cancer and stroke	None

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