

Cancerworld

Telemedicine Rehabilitation in the Cancer Care Continuum

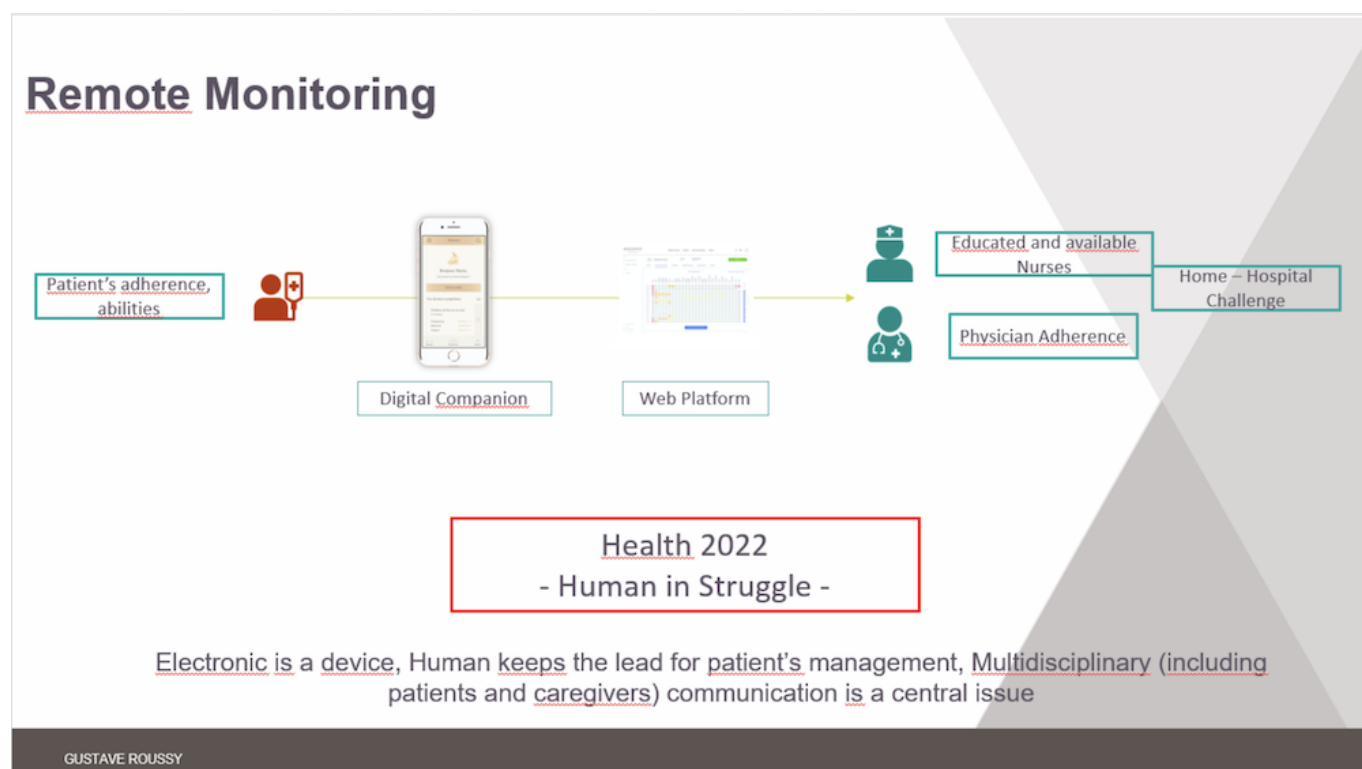
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This is the sixth and final report of the online conference “Telemedicine in Cancer Care Continuum: implementation and integration”, developed by SPCC in collaboration with the American Society of Clinical Oncology (ASCO). Held in May 2022, the conference opened the second phase of the project on telemedicine in cancer care, which focussed on how to overcome barriers and limitations to best implement telemedicine models and applications for patients with cancer. Telemedicine rehabilitation is a relatively new field, which widens the spectrum of cancer care and offers solutions for a better quality of life to the growing number of cancer survivors. As a branch of telemedicine, it shares with it advantages and limitations. It is therefore a fitting subject for the last report in the series, as it offers a glance into future directions of medicine and an opportunity to revisit some of the themes emerged during the online conference.

Although cancer survivorship rates are rising across the globe thanks to advancements in early detection and therapy, many patients and survivors encounter physical, psychological, and cognitive complications caused by the disease and its treatment. These problems can hinder daily activities or

prevent people from resuming important life roles, such as working or taking care of their family. Cancer rehabilitation can help an individual to stay as active and independent as possible during and after treatment. It can also lessen the side effects and symptoms of the disease and its treatment; and, ultimately, improve one's quality of life. Rehabilitation is becoming increasingly recognised as a critical component of quality cancer care. It is not a separate stage in the continuum and was listed as part of survivorship care in the 2006 Institute of Medicine (IOM) Report, *From Cancer Patient to Cancer Survivor: Lost in Transition*. In reality, it covers such a wide variety of issues and services, that it can apply to the entire spectrum, not just survivorship. The list compiled by ASCO of the problems it can address is quite long, from physical ones, including pain, weakness, fatigue, balance, lymphedema, neuropathy; to mobility impairments related to walking, showering, getting dressed; to cognitive difficulties: mental fog, memory trouble, etc. To this list we can also add psychosocial issues, such as anxiety, stress, depression, social isolation, body image. The types of specialists required are also many. Among the ones mentioned by ASCO: physical therapist, occupational therapist, speech pathologist, physiatrist, cognitive psychologist, dietician, and so on. Together with improved function in survivors, rehabilitation can also reduce the financial burden of cancer to individuals and society. However, the growing influx of oncology patients and longer life expectation call for solutions on how to provide access to professionals for all who need them. Rehabilitation is still a relative newcomer in cancer care and specialist training for medical staff is often only available in tertiary centres, with consequent access barriers. Travel time and costs, higher risk of infection for immunocompromised individuals, limited number of specialists, etc., all point in the direction of telemedicine. Telemedicine can deliver rehabilitative services to patients at home, thus eliminating economic and logistical barriers, and also contributing to better adherence and quality of life.



Telerehabilitation (TR) is the remote delivery of rehabilitation and habilitation services through information and communication technologies. Included in telerehabilitation are a wide variety of services, such as “evaluation, assessment, monitoring, prevention, intervention, supervision, education, consultation and coaching” (from *Principles for Delivering Telerehabilitation Services*, American Telemedicine Association, 2017.) As part of telehealth, remote rehabilitation shares with it advantages and hurdles, from trust to IT reliability and literacy, access, patient/doctor relationship, adherence, and so on. And as a recent entrant in cancer care, it still needs to be fully integrated into

the continuum.


At the online conference, a number of interesting platforms and apps were introduced and discussed, which are already providing telerehabilitation services or could be adapted and expanded to do so. **Florian Scotté**, Medical Oncologist at Gustave Roussy, France, talked about the importance and advantages of remote monitoring to manage cancer patient treatment and adverse events. Digital devices can monitor the journey of the patient, but also allow interactions between patients and professionals, and between professionals themselves. Symptoms such as pain, fatigue, nausea, can decrease with remote monitoring, and quality of life improves with reduced visits and waiting time at the doctor's office and in hospitals. (See our report at <https://cancerworld.net/telemedicine-on-the-path-to-personalised-treatment/>) Dr. Scotté mentioned the study published by Ethan Basch in 2010 in the *New England Journal of Medicine*, entitled [The missing voice of patients in drug-safety reporting](#), and stressed the importance of listening to patients but also of creating clear communication between patient and doctor, in terms, for instance, of formulating questionnaires that are easy for the patient to understand and fill in, but still give enough information to the physician. The Patient Reported Outcomes version of the Common Terminology Criteria for Adverse Events (PRO-CTCAE) for example, is often vaguer than the conventional CTCAE, and that could be one of the reasons why some physicians may be reluctant to use their patient's report to make treatment decisions. Applied to the scenario of telerehabilitation we can see how the creation of a mutually understandable vocabulary is of paramount importance for remote assessment of pain and other symptoms, to carry out instructions for self-testing, and, of course, for long term monitoring and reporting. Also, some neuro-oncology patients might not be able to answer correctly and need caregiver support. Extra help might also be needed by patients who are less comfortable with digital technology due to age, physical impairments, or disposition. In the integration of TR, a wider support network for family carers may be needed.

Sana Al Sukhun, Medical Oncologist, Director of Al Hayat oncology practise in Amman, Jordan, has witnessed the practical and moral dilemmas created by the premature introduction of telemedicine in countries with limited infrastructure and that were not sufficiently prepared to navigate this change. For instance, a new moral debate emerged on how a physician should respond when approached by a patient on social media, who expects immediate medical attention. Also, what happens if the specialist and the patient are in different countries? Can or should a local practitioner follow a second opinion advice given remotely from abroad? Who is responsible for what? Dr. Al Sukhun also reminded us that even in a digitally aware country with good communication infrastructure, such as the U.S., not everyone has internet access. Only two thirds of Americans over the age of 65 have broadband at home, and only 50% use smartphones (see <https://www.pewresearch.org/internet/fact-sheet/internet-broadband/>). And, of course, the elderly make up the majority of cancer patients. In June 2020 the University of Michigan National Poll on Healthy Aging (NPHA) carried out a survey of U.S. adults aged 50-80 about their view and experience of telehealth (<https://www.healthyagingpoll.org/reports-more/report/telehealth-use-among-older-adults-and-during-covid-19>). The overall response was favourable, and the advantages of telemedicine in terms of flexibility, less travel, costs, etc. were acknowledged; but when compared to telehealth visits, in-person ones were thought to still offer better communication and quality of care by the majority of respondents. They were especially concerned about the lack of a physical examination. So, how can we develop communication skills and technology to get over this hurdle, and how does no-hands-on evaluation affect rehabilitation programmes?







Remote fitness classes have been around for a long time and gained extra popularity in the past couple of years, as a consequence of Covid-19 restrictions, with pre-recorded or live personal and group sessions. But how can physiotherapy be carried out remotely? Alignment, range of motion,

proper execution of movements, constant corrections are crucial to obtain mobility improvements. To look at a successful example, the University of Queensland, Australia, came up with a solution, eHAB®, a platform that combines video conferencing with remote measurement tools, assessment protocols and so on. Human motion tracking has been used to aid physiotherapy for quite a while, and its introduction within the teleconferencing environment could actually provide better outcomes than traditional in-person physio sessions.

POLICY RELEVANCE: Sustainability and accessibility
“Better Life for Cancer Patients Initiative” focus in Follow-up care



Cost-utility

	Usual psychosocial treatment	
Professional salaries 	191,75 EUR	160,39 EUR
Sick leaves 	33.616,80 EUR	21.016,62 EUR
Psychopharma 	17,87 EUR	16,83 EUR
Transport 	23,06 EUR	0,00 EUR
Structural costs 	247,80 EUR	150,00 EUR

While the most common mean of remote communication between doctor and patient probably remains the phone call, the types of services provided by TR are best served by videoconferencing, coupled with remote monitoring tools. Many such tools are being developed around the world, but Israel has become a hotbed for med tech innovation. Ilan Misano, biomedical engineer and technology transfer consultant between Israel and Italy, explained some of the ingredients that are contributing to this. The most important component is the environment. There are many start-ups, incubators, accelerators, innovation centres, that attract both researchers and investors, small companies as well as multinational giants, many of which now have offices in Israel. There is a lot of collaboration between different actors in the industry; and the way the Israeli health system is designed, with four insurance companies always vying for customers, contributes to the drive for innovation. Because of its history and location, Israel has always needed to embrace new technologies. The human desire for progress is key to the development and deployment of telehealth. We have already talked about some of the digital tools developed in Israel (see our report at <https://cancerworld.net/telemedicine-and-diagnosis/>), from home urine tests to no-needle blood tests, to remote ultrasound and so on. The scope of all of these tools will be widened in the future to include more monitoring functionalities for different medical needs. Checking heart rate and other vital statistics is very important also for TR; there are many apps available and many more are being developed for remote monitoring.

The power of health economic thinking

- Helps decide how best to distribute a finite resource



- To provide the most health to the most people

cost-effectiveness
analysis saves
lives ¹

And ensures
sustainable
healthcare for all ¹

Ref: [1] Tengs TO. Dying too soon: how cost-effectiveness analysis can save lives. Irvine, California, University of California, National Center for Policy Analysis, 1997 (Policy Report No. 204)

Social isolation and its impact on quality of life, emotional, physical, financial, and so on, drew the world's attention during the Covid-19 pandemic, and a number of studies have also started to be published specifically focussing on cancer survivors (see for instance Yanjing Liang et al., [Social isolation in adults with cancer: An evolutionary concept analysis](#), *Frontiers in Psychology* 2022). The physical and psychological effects of cancer and its treatment can have deep repercussions on an individual's social and affective life, and even on their health outcome. Pain, nausea, fatigue, mobility, mood, self-image, just to name a few, can create barriers that are hard to overcome. How can TR and telehealth in general help, which further reduce in-person contact with others? At the video conference **Christian Ochoa-Arnedo**, Chief of the Digital Health Service IConnecta't at the Catalan Institute of Oncology and Professor of Psychology at the University of Barcelona, presented the online resource OnCommun, of which he is Project Director (see our report at <https://cancerworld.net/telemedicine-in-the-cancer-continuum-lessons-from-the-covid-area-and-progress-towards-oncological-prevention/>). OnCommun stands for "online cancer support communities"; it is a way to activate all the common experiences of people with cancer and provide them access to psychosocial care and education. Only a small minority of cancer patients receive psychosocial care, although such support is vital in many ways, including therapeutic adherence, return to work, sick leave, use of psychiatric medication. An online support community such as Oncommun can improve collaboration between patients and health care professionals. The system has a pyramid structure, with different tiers, in order to give the patient the exact attention required at the stage they are in. Patients are first screened to assess their psychological needs, then they are offered resources to allow them to understand and better navigate their condition. If this is not enough to reduce emotional distress, the next step is access to a community where they can talk with other patients and professionals. If problems are still not solved at this level, the following step is psychotherapy intervention. This type of community system offers a double solution for telerehabilitation: remote psychological therapy with a specialist, but also a social environment where patients feel they are giving their own contribution besides receiving care. When patients finish their oncological treatments, they can remain in the Oncommun ecosystem for optional follow-up, but also to give help and the value of their experience to others.

All the participants to the online conference agreed with Dr Ochoa-Arnedo on the importance of assessing patients early on, to prevent or reduce cancer related issues. This is true also for TR,

where a full assessment during the first visit can help devise a course of action later. At the SPCC webinar *Telemedicine in Cancer Care: Monitoring, Follow-Up, Tele-Rehabilitation, Palliative and Supportive Care* (see our report at <https://cancerworld.net/telemedicine-in-cancer-care-monitoring-follow-up-tele-rehabilitation-palliative-and-supportive-care/>), Marcalee Sipski Alexander suggested that there should be an evaluation of physical and cognitive impairment at the time of diagnosis. Home environment should also be assessed, together with patient expectations and family carer support. A cardiac risk assessment for exercise could also be advisable, pre-habilitation could be suggested when beneficial, and also the topic of weight and nutrition management should be introduced. Prof. Alexander is the editor of *Telerehabilitation: Principles and Practice*, published in 2021, which provides a wealth of information on the best use of TR in clinical practice for different types of medical issues.

Telepathology Benefits

Clinical advantages

- Access to pathology experts
- Improved patient care

Operational gains

- Easier to move images
- Encourages consultation

Business rewards

- Increased revenue (direct & indirect)



Rehabilitation done remotely at the patient's home allows for better adherence and has economic advantages for the patient, the healthcare system and society at large. Physical therapy, speech therapy, psychological support, exercise routines, weight control, lifestyle changes, all contribute to better outcomes for patients before, during and after cancer treatment. With the help of telerehabilitation patients can lead a more independent, meaningful life, may be able to return to work and social life sooner and perhaps even be less subject to relapses, side effects of treatment and psychological issues. "Healthcare's greatest problem today is finance", suggested **Paul Cornes** from Comparative Outcomes Group in Britain, oncologist, and lecturer at the European School of Oncology. TR lends itself particularly well to be carried out virtually, and it is important that payers and investors fully appreciate the potential of this newcomer.