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Telemedicine in Cancer Care Continuum: Supportive care, Value-based Medicine and Reimbursement of Innovation

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The Multinational Association of Supportive Care in Cancer (MASCC) defines supportive care in cancer as "the prevention and management of the adverse effects of cancer and its treatment." Physical pain and discomfort caused by the disease and by the side effects of treatment are not the only challenges faced by a cancer patient, there can also be occupational, psychological and psychosocial suffering, that might be experienced at any stage of the patient's cancer journey. From marginal but psychologically important interventions, such as treatment to prevent chemotherapy-induced hair loss, to more substantial ones, such as monitoring to prevent recurrence, supportive care can improve quality of life for patients, their families and carers, and make them feel emotionally supported and guided through decision-making and life adaptations. On the MASCC's website there is a quote by Andrew Davies, Professor of Palliative Medicine at Trinity College Dublin, worth repeating here, "Supportive care is about treating the person, whilst oncology is treating their cancer."

So, how can telemedicine improve this kind of "analogue" care, where face-to-face human interaction seems to be the most appropriate way to establish a collaborative relationship between health provider and patient? This has been one of the topics touched upon in "Telemedicine in Cancer Care Continuum: implementation and integration", an online conference developed by SPCC (Sharing Progress in Cancer Care) in collaboration with ASCO (American Society of Clinical Oncology), which took place on 6-7 May 2022. The other main stages of the cancer pathway are the subject of separate reports published on *Cancerworld*.

Beside the physical symptoms, cancer patients tend to experience intense emotional distress, yet

only 15 to 20% of them have access to psychosocial care. And this is an optimistic estimate. We already mentioned in our first report, "Lessons from the Covid area and progress towards oncological prevention", the project lead by the European Institute of Technology (EIT), described at the online conference by **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. The name of the project is OnCommun, which stands for "online cancer support communities", and it is an ecosystem which improves access to psychosocial care and education in order to reduce cancer impact. Educational and psychosocial care access can also improve other aspects of the cancer journey, such as therapeutic adherence, sick leave, time before returning to work, and, consequently, quality of life. Better psychosocial support may also mean a reduction in the use of psychopharmaceuticals.

An increasing number of patients use the internet to find information and support, but we want to underline that telemedicine applications and models work best if there is a health professional behind them: that way a collaborative relationship can be established between doctor and patient, based on sound information and mutual trust.

The Covid19 pandemic has shown the crucial importance of digital health solutions to improve and advance supportive care services, and to increase cancer patient access to them. But how can we deal with the economic barriers for telemedicine and telehealth implementation? The current financial crisis, triggered by the pandemic and other world events, offers an opportunity to find and implement solutions to the ever rising and unsustainable costs of healthcare, said **Paul Cornes**, from Comparative Outcomes Group in Britain, oncologist and lecturer at the European School of Oncology, and member of the Task Force Advisory Board working on the Access to Innovation in Cancer Treatment in Europe. In his presentation at the online conference, Dr Cornes mentioned a report published in 2017 by The World Bank and WHO, showing that half of the world's population cannot obtain essential health services. The figures are quite staggering: 800 million people spend at least 10% of their household budgets on health, and for almost 100 million, those expenses are high enough to throw them into extreme poverty. We spend about 10% of the world's wealth on health each year, and middle- income countries are catching up fast, currently at around 6 to 7%. But the increased investment has gone wrong. Year on year, we have been investing in less and less efficient innovation. Even at the peak of the pandemic, non-communicable, chronic diseases, NCDs, such as heart disease, stroke, cancers, diabetes, were still collectively responsible for almost 70% of all deaths worldwide, and of those, the greatest single cause of death is cancer, impacting every country in the world. And these figures are still rising. Without some sort of innovation, we will have to double the number of doctors, nurses, hospitals, clinics, ambulances, scanners, and so on. In the

words of the WISH Foundation, cancer care is not affordable for most patients, many payers, and nearly all governments.

The WHO advises that to overcome the unsustainable nature of healthcare, we must change how we think about medicine, we need to deliver better health with the resources at our disposal. All countries can do something, many of them a great deal, to improve the efficiency of their health systems, thereby releasing resources that could be used to cover more people, more services, and more of the costs.

Value-based medicine (VBM) is part of a new way of thinking about health, called **value-based healthcare**. It is an evolution from evidence-based medicine (EBM), where the focus was on the efficacy of treatments, and the question was, “Does this intervention make you live significantly longer or live better?”. In value-based medicine, we ask instead, “Is this worth doing compared to other things we could do with the same resource?”

In a way, physicians and economists are less different than it first appears. Health economists rely just like doctors on quantitative information. They make difficult choices in the face of uncertainty and know that a good decision requires the balancing of the benefits and risks involved. The main difference between them is that physicians are usually concerned with an individual patient, while economists tend to be concerned with large populations. The power of economic thinking is in deciding how best to distribute a finite resource so that we can provide the most health to the most people. Cost effectiveness analysis saves lives and ensures sustainable healthcare for all. The formula we need to apply is **Value=Health outcomes/Costs of delivering the outcomes**. “Outcomes” are the health results that matter for a patient’s condition over the care cycle. “Costs” are the total costs of care for a patient’s condition over the care cycle. The overarching goal must be more value for the patients, and not cost containment, convenience, or customer service. The aim of a healthcare system is to maximize length of life and quality of life, using the available resources. We could free up a lot of resources and create much more value by developing better systems, for instance in some European countries, better management of cancer patients could increase the outcome by almost 25%.

But how do we get innovation funded and reimbursed? We must undergo a health technology assessment (**HTA**). Innovation will be reimbursed by payers on three conditions. 1) If it addresses a serious unmet and life-threatening need. Countries would have paid almost anything for a functional Covid vaccine only two years ago. 2) If it saves money, and that is a big priority now. 3) If it adds value. Proving these points requires innovators to develop an economic model that demonstrates the effect of a new intervention, such as in telehealth and telemedicine, to submit to the payers. The aim of healthcare is to help people live longer and better. The metrics that we need to look at are these: living longer we call Added Life Years, or **ALY**; living better is Quality of Life, **QoL**. Most patients would like to live longer and better, and so, the metric for the two parallel aims is **QALY**, the Quality Adjusted Life Year. The aim of the healthcare system is to maximise health using available resources and to gain the maximum QALYs for the health budget.

We know telehealth and telemedicine applications have been adopted widely and rapidly because of Covid, particularly in cancer care, in order to improve quality of life for cancer patients. But we must find the right balance between telemedicine assets, applications and sustainability under the lens of the HTA. Economists use the cost-QALY model to assess the benefits of treatment. But how do we show the Quality of Life impact of our innovation? While benefits of Added Life Years or Overall Survival are easy to compare between diseases, Quality of Life measurement can be difficult, as many studies use disease specific scales. A generic QoL scale is needed that allows the HTA to compare the competing demands of treatment for different diseases. An instrument for measuring QoL that has been validated in many countries is the **EuroQol- 5 Dimension** (EQ5D). It is simple to use, it takes about three minutes per patient, and can be directly converted to something called **Value "Utility"**. For example, if we do a study in Britain, we have conversion data that tell us what a certain intervention is worth in a different country. This has significant time and cost savings for the international health technology assessment, which is why within two to three years, it will become a pan-European project. Once the patient has answered the five questions, we can use their score as the starting point from their current therapy, then measure the clinical effect of our intervention in terms of ALY or QoL or both, which gives us QALY. We are now ready to submit this to the HTA board, who will put it on a cost-effectiveness plane. The board will look at four quadrants of decision-making: Higher/Lower Cost difference and Worse/Better Clinical effect. Two of those quadrants are straight forward. If our innovation has worse outcomes and costs more, it will be rejected. If it is better and cheaper, we will get reimbursed. But there are two quadrants that say, "It depends." It depends on how much more money we'd have to pay, or how much better is it than the standard of care. Starting from the position of standard therapy, we could have a new treatment that adds benefit but costs more. We can join that up with a line, which represents the **Incremental Cost Effectiveness Ratio** (ICER). How much would we pay to gain one QALY? There will be a level at which increasing spend is probably good value and the innovation will be deemed worth funding. But there is going to be another ICER level which might be considered too high. WHO's guidelines for good value are that the innovation should cost less than one per-capita earnings per QALY for a country, while above three times, it is probably poor value, and should not be funded. In the middle there is a large grey zone, and each country and health system make their assessment of what that is and decide accordingly.

Making the case for reimbursement of telemedicine with the four-quadrant decision plane shows there are three easy wins: Telemedicine delivers Equivalent Outcomes at lower cost;

Telemedicine delivers Better Outcomes at less than ICER Reimbursement Threshold; Telemedicine delivers Better Outcomes at lower cost. A caveat: reimbursement works in theory, through health technology assessments and the four-quadrant decision plane. In practice, it is more complicated, but understanding those complications will help us steer our way through the reimbursement maze.

In conclusion

Innovative, digital and technological tools or models to integrate and implement into supportive care delivery are essential to overcome the challenges and to avail of telemedicine opportunities in cancer supportive care. As the financial burden of healthcare in developing and established economies is rising, so is the need for an affordable high quality and equitable cancer care. Strategic choices are to be made to preserve national funding for more effective care and treatment. Complex international regulatory, cultural, political changes and issues require a balancing strategic insight with proven management tools to implement new innovative telemedicine, operative technological-organizational models and digital tools in an environment where health care organizations bear an ever-greater responsibility for cost and quality of care.