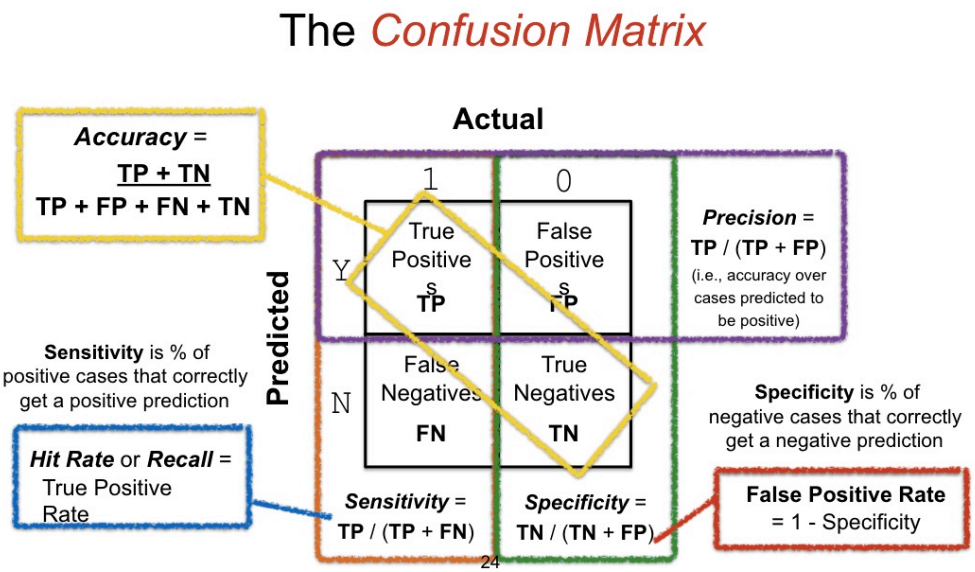
Cancerworld

The new frontiers in telemedicine

Adriana Albini / 3 December 2021



Chair and first speaker of this webinar was **Florian Scotté**, medical oncologist and Head of the Patient Pathway division at the Institute Gustave Roussy, Villejuif, France.

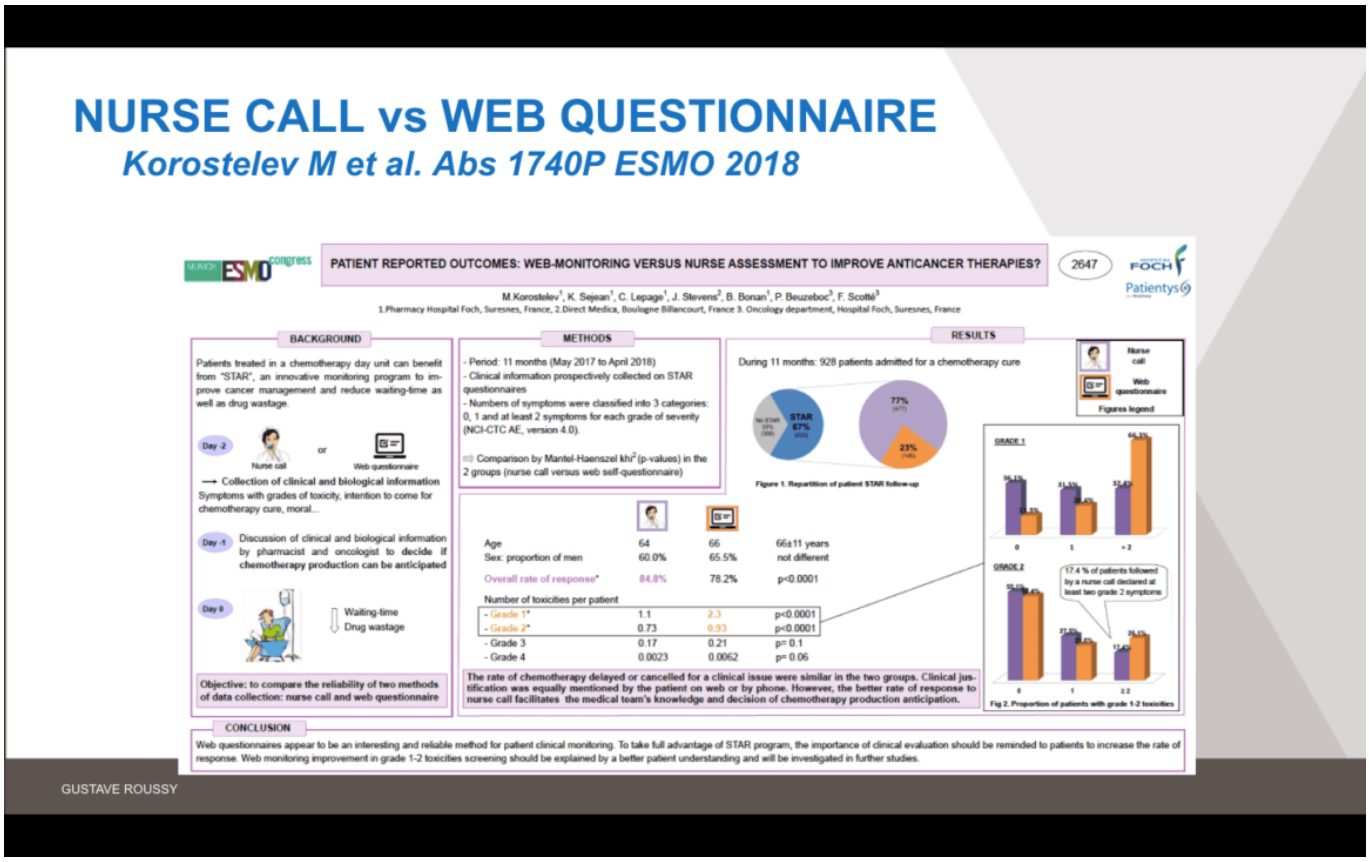
Telemedicine and technological innovation in cancer care

The first tool of the remote hospital, of course, is the phone, and many clinicians will contact the patient that way. But today we also have many new devices, platforms for advice and video conference. Prompted by COVID-19, we are employing tele-consultation and remote monitoring all over the world. We are also working on artificial intelligence, which may be the most important development of the future. We have homecare, virtual cross-disciplinary meetings, remote surgery, virtual reality. But what about tomorrow? Tomorrow we will keep on striving to deliver increasingly better care.

Monitoring the Patient at Home: the PROCHE programme

The PROCHE (programme for the optimisation of chemotherapy administration) was developed twelve years ago at the medical oncology department of the Georges Pompidou European Hospital, in partnership with Direct Medica (Call Centre). It simply consisted in a call from the nurse to the patient two days before the scheduled chemotherapy appointment, to ask about any previous adverse events. This information, along with the patient's test results from the lab, was then forwarded to the day hospital where a team of nurse, physician and pharmacist would decide to produce, postpone, or cancel the chemotherapy session. The outcome of this programme was, first, a reduction in time between decision, prescription, and start of treatment. This is important for the patients waiting for treatment, but also for the institutions, as they can increase the number of

individuals treated per day. Secondly, a significant decrease was detected in the incidence of pain and fatigue and improvement was noted in other aspects of toxicity management. Drug wastage also decreased substantially.



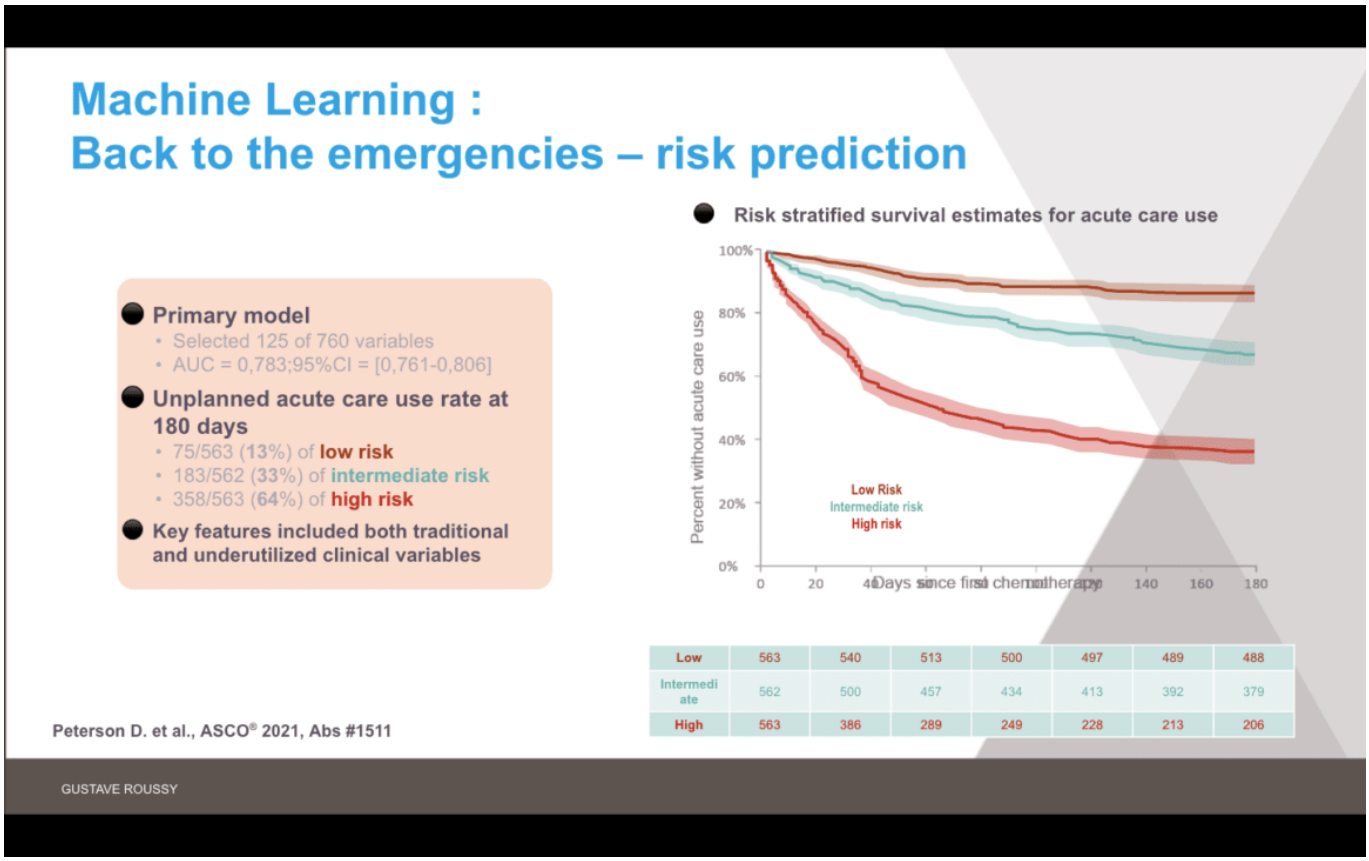
PROCHE Program: new approaches in safety assessment

The next step was to look at new approaches in safety assessment. It was decided to compare the use of the CTCAE (Consensus Toxicity Criteria for Adverse Events) to the area under the curve of toxicities (AUCtox). The CTCAE generated a safety prediction only for three items, in grade 3. Using AUCtox allows to identify adverse events that significantly impact quality of life (QoL) but are not reported when considering only grade 3 or higher toxicities. As to the phone calls by nurses, is it useful to move forward into digital health and use a web questionnaire? A study presented at ESMO in 2018 by Dr. Scotté's team, showed no difference between phone and web questionnaire for grade 3 and 4, but web questionnaires picked up significantly more grade 2 and grade 1 toxicities. It is interesting that, although patients prefer a phone call by the nurse, when using a web questionnaire, they tend to provide more information.

The assessment for in patients… A next step

A monitoring model with navigator nurses and web questionnaires improves survival, increases quality of life, and reduces patients' visits to the emergency department. The next logical step would be to use a similar solution for in-patients as well. A trial was carried out in Boston, by Jennifer Temel's team, with 150 patients. The patient was to complete a questionnaire following enrolment in hospital, and a plan of action was to be proposed by the clinicians during the hospitalization. There was high adherence from patients, with 94 of them completing >2 symptom reports, but clinicians discussed only 60% of the reports, and a plan to address the symptoms highlighted by the reports was developed in only 21% of the cases. Consequently, there was no significant result on ESAS improvement, hospital length of stay, and re-admission risk. However, there was an encouraging impact on psychological distress, as the patients felt a greater involvement in their care.

A **Machine Learning** paper presented by Dylan Peterson at ASCO this year shows that machine learning (ML) algorithms trained on comprehensive electronic health record (HER) data can predict the risk of preventable ACU (acute care use) after starting chemotherapy with promising accuracy. Another paper presented this year showed the results of a trial conducted by Kathi Mooney and her team related to digital health during the COVID-19 pandemic. The study compared one cohort of patients with **Symptom Care at Home** (SCH) to one with usual care. The researchers assessed the PRO measures with MDASI (symptom burden scale), COVID-19 pandemic impact on HRQOL (health-related quality of life), HADS (Hospital Anxiety and Depression Scale), PROMIS (Patient-Reported Outcomes Measurement Information System) Global Mental Health and the UCLA Loneliness Scale. The results showed significant improvement. So, digital health can help outpatients in daily living during the disease and during the treatment, but also in other situations such as this pandemic.



Virtual reality can be used in two ways. The first is education, and a systematic review demonstrated that there was a significant improvement in education for professionals using VR compared to standard education. It can also help patients in terms of distraction/relaxation. The REVEH Trial conducted in France used virtual reality on patients before and during a bone marrow biopsy. There was no difference in terms of pain intensity between patients with the standard MEOPA, (Oxygen + Nitrous Oxide in gas form) and those with virtual reality. But with VR the patients' safety was 100%, physician satisfaction was significantly higher, and so was the recommendation to use by both patient and physician. Interestingly, similar results in terms of patient satisfaction were obtained with yoga 15 years ago. Perhaps soon we will be happy to use these kinds of solutions to reduce pain and the use of medicines for treatments.

Must we implement digital transformation? This is the question today. In France, it is stated in the 10 years guidelines by President Macron, presented at the start of the year. But also in the US, it will probably become mandatory to use digital health, maybe by 2022 or 2023. The experimental solution implemented at Gustave Roussy is, first, to use digital health for the vulnerability questionnaire before the patient starts treatment and meets the medical oncologist. Then, all the data is transferred to the web platform, with nurse navigators to monitor the patient through a

remote monitoring program. Patients can then be advised whether to go to the emergency department, to stay at home, or to be in contact with the different professionals to better alleviate their pathway and optimise their cancer treatment.

How and what to implement?

A couple of stimulating sources can be mentioned here: the book edited by Andreas Charalambous, Developing and Utilizing Digital Technology in Healthcare for Assessment and Monitoring, published in 2020, discusses the current trends in the integration of information technology interventions across the care continuum, seen from multiple perspectives, including nurses, clinicians, researchers, technology experts and so on. The other is a comprehensive review by Raymond Chan and his team, which also suggests a number of recommendations, The efficacy, challenges, and facilitators of telemedicine in post treatment cancer survivorship care: an overview of systematic reviews, due to be published in the next issue of the Oncology Journal.

The story telling of digital health is ongoing, and its impact should be regularly assessed in clinical trials. New opportunities will be developed, such as devices, networks, new careers and skills, but humans should always keep an important place in the story.

The next speaker, **Andreas Charalambous**, Professor of Oncology Nursing and Palliative Care at the Cyprus University of Technology, and immediate past President of EONS and President-Elect of ECO, spoke about the integration of information technology interventions across the care continuum.

When AI meets telemedicine: the new advances in clinical management

In recent years we have seen a rapid increase in the development and use of digital tools, not only in clinical practice but in everyday living. Unfortunately, with the surge of telemedicine and artificial intelligence, a certain confusion has been created in terminology and conceptualisation. To avoid being “lost in translation”, a quick recap may be useful.

The concept of Telemedicine

Telehealth has been classified historically as synchronous, using real time electronic communication, or asynchronous, using store and forward communication. Recently, a third form has been recognised as remote (tele) monitoring, involving data collection through distributed devices, including the Internet of Things (IOT). **Telemedicine** is the process of delivering health care services at a distance by using communication and information technologies to diagnose, assess, and treat patients (World Health Organisation). **Telepractice** links clinician to client or clinician to clinician for assessment, intervention, and/or consultation via telecommunications. It includes a growing variety of applications and services using two-way video, email, smart phones, wireless tools, and other forms of telecommunication technology.

The concept of Artificial Intelligence

This is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable (John McCarthy, 2004). AI is bringing a paradigm shift to healthcare, powered by increasing availability of healthcare data and rapid progress in analytic techniques. Contrary to common belief, AI is not one technology, but rather a collection, including Reactive Machines, Limited Memory, Theory of Mind and Self-Awareness.

AI technologies of high importance to healthcare

Machine learning: in precision medicine it can facilitate predicting what treatment protocols are likely to succeed on a patient based on various patient attributes and treatment context. It can also predict, for example, a risk for a specific side effect resulting from radiotherapy or chemotherapy, that the patient might experience once out of the hospital. **Rule based expert systems** have been widely employed for 'clinical decision support' purposes over the last couple of decades. They help healthcare professionals to make clinical decisions in a fast-track way, taking into account multiple sources of data in a very limited time. **Natural language processing** (NLP): in healthcare, its main applications involve the creation, understanding and classification of clinical documentation and published research. NLP systems can analyse unstructured clinical notes on patients, prepare reports (e.g., on radiology examinations), transcribe patient interactions and conduct conversational AI.

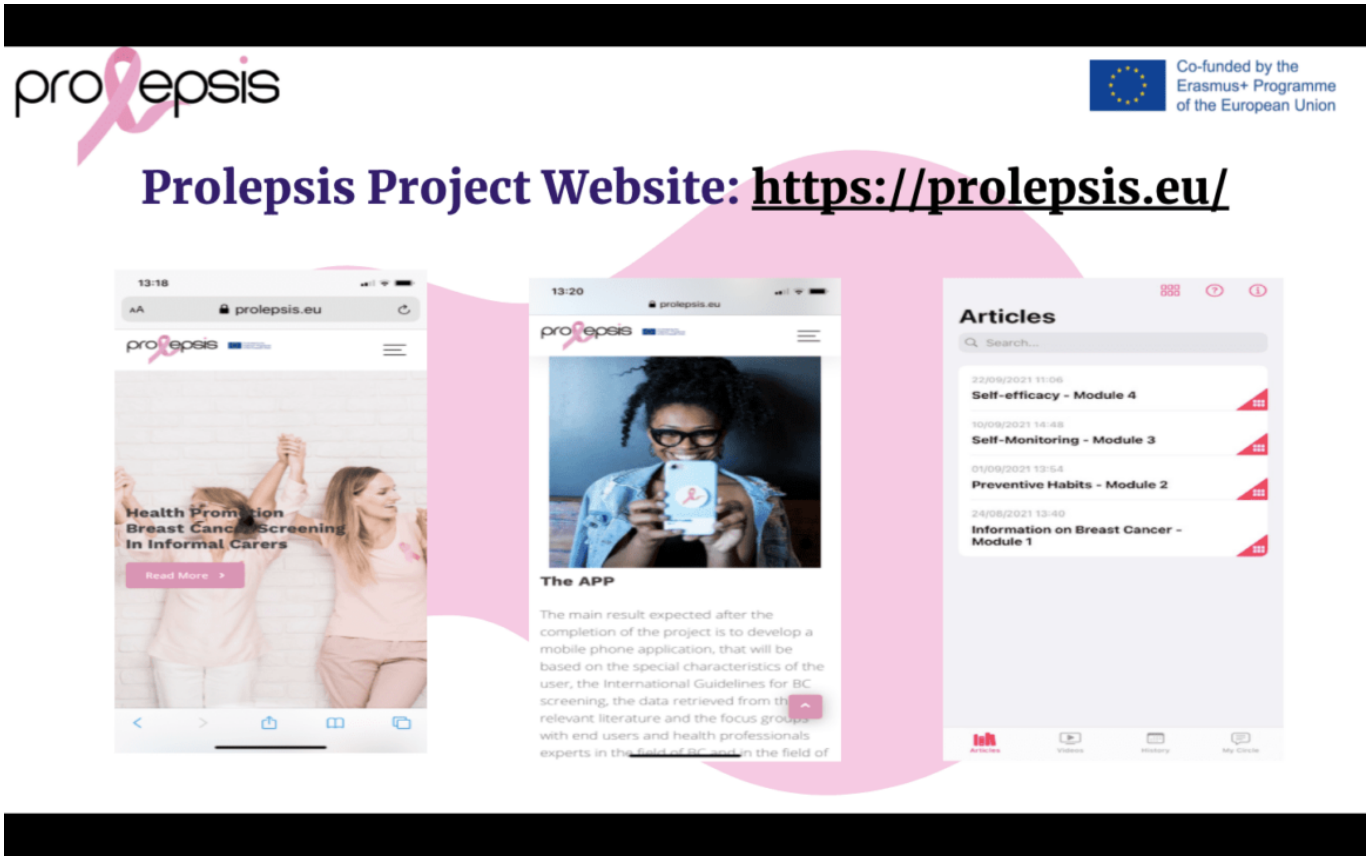
What can be achieved by these technologies? Could we live without them?

These technologies can help healthcare professionals navigate in an increasingly busy contextual environment, with an overwhelming body of data. They aim to overcome challenges in health service delivery due to time and distance enabling cost effectiveness and better access in both developed and developing world settings. The current SARS CoV 2 pandemic has highlighted their special role during situations in which human contact needs to be minimised. A longer lifespan and the associated rising incidence of chronic diseases have increased care demand and complexity, necessitating longer interactions between patients and providers, and thereby increasing the need for tele-healthcare support. Telemedicine and artificial intelligence provide the ability to transform care from being practice centric, where patients and families must adhere to clinic schedules and physical locations, to more patient centric, by decreasing travel and missed work, also personalising the provided services by taking into account needs, preferences, as well as the patient's characteristics. To achieve this, it is necessary to integrate the properties of these novel technological solutions. When applied to a healthcare system, an integrated approach has various benefits, such as cost reduction, fast processing of patient records, and much more.

Fields of Integration

The three main types of telemedicine where AI is widely used are patient monitoring, healthcare information technology and telediagnosis. **Remote patient monitoring (RPM)** is a method of healthcare delivery that retrieves patients' data outside clinical settings and utilises it to keep track of their health condition [10]. Depending on the specific features of this technology, it can enable clinicians to diagnose ailments remotely. It also creates a bridge of transparent communication between healthcare professionals and patients. Mobile applications have increasingly been utilised to achieve this. A project in which prof. Charalambous is involved, is the Prolepsis Project (https://prolepsis.eu/), which uses an app for self-monitoring of health and primary prevention of breast cancer, with advice based on the person's characteristics and needs. The app has been recently released to the public and it is free for everyone to use. **Health information technology (HIT)** provides the ability to manage and store electronic data in healthcare systems, such as e-prescriptions and electronic health records, helping patients meet their goals, including coping with treatment related toxicities. AI algorithms are used to retrieve and systemise medical data from various sources, known as Real World Data. Natural language processing helps healthcare professionals categorise patient records, healthcare policies, and so on. An emerging field of integration is **telediagnosis**, a clinical method of diagnosing patients remotely. There are some studies that prove the effectiveness of this approach in early diagnosis of cancer, but many more are in the pipeline. Tele-dermatology for instance, is another area where artificial intelligence in

collaboration with telemedicine is widely used. For example, convolutional neural networks were applied to detect the possible exposure to melanoma. When AI and telemedicine are combined, tele-diagnosis can also be used to detect treatment-related skin toxicities.



The question is not if AI and telemedicine, either in isolation or in combination, can be useful in healthcare, but rather how to ensure their adoption in daily clinical practice. Several challenges can pose a threat to the widespread adoption to take place. The conditions for such an adoption include (but are not limited to): AI systems being approved by regulators, integrated with HER systems, standardised so that similar products work in a similar fashion, are taught to clinicians, paid for by public or private organisations, and updated over time. As the complexity of care increases and healthcare is delivered in an ever-increasing financial pressure, AI and telemedicine will keep on being, game changers in the field. Machine learning, for instance, is the primary capability behind the development of precision medicine, widely agreed to be a sorely needed advancement in care. Given the rapid advances in AI for imaging analysis, it seems likely that most radiology and pathology images will be examined at some point by a machine, see for instance our Horizon 2020 project, called INCISIVE (https://incisive-project.eu/), for cancer imaging. This project is in its infancy now, but the idea is to integrate this in practice, and work along with human readers to fortify their ability to make accurate and faster diagnosis. As already mentioned by Dr. Scotté, more about the topic can be read in the book edited by Prof. Charalambous, which takes an A-to-Z approach to thinking about digital technology, design, and application.

> AI systems will not replace human clinicians on a large scale, but rather will augment their efforts to care for patients.

Professor **Kenneth Younge**, applied economist and Chair for Technology and Innovation Strategy at

the Swiss Institute of Technology (EPFL), spoke next on

Data science and cancer care, understanding predictive models and heterogeneous treatment effects

In writing this presentation, Prof. Younge was inspired by something a doctor once told him, “You are not a statistic. You are you.” It is a deep statement for somebody who is at the receiving end of healthcare. We get used to thinking in statistical terms, but in fact, everyone is an individual. This has some profound implications for the direction in which telemedicine is likely to go. What do most people expect from AI? IBM Watson’s service comes to mind. IBM rolled out Watson claiming its AI could work everywhere. Watson initially launched specifically to “…suggest treatment options to physicians”. In 2011 Watson was targeting cancer in its first rollout. By 2018, IBM was facing some real problems with it. Adoption was not picking up, physicians did not trust it and/or follow it, and integration turned out to be complicated. Early this year IBM announced the intention to sell off Watson Health. Although a big business, it is not profitable.

What went wrong with data driven healthcare?

We might say that the quality of the data is often poor, and that can be true; also, the relevance of big data decays quickly. The useful half-life of many medical records is only about four months. But, most importantly, the objectives attempted by IBM Watson were just too complex. Watson aimed to “suggest treatment options to physicians”. AI needs to start with more limited, discrete tasks, such as supporting pathology tests, screening patients, and in fact supporting telemedicine. To understand why Watson failed, we need to go back to some of the core ideas from data science. Data science as a field is focussed on two interrelated problems. The first is finding the right balance between aggregating or disaggregating evidence, both in terms of data and predictors. The second is finding the right balance between being accurate about what you predict (precision) and finding what you are looking for (recall).

Aggregation vs. Disaggregation

AI models are a trade-off between aggregating across evidence and drilling down into specific conditions. Aggregation generates more stable predictions; more aggregated models vary less when you change samples. But aggregation is less relevant for the individual: more aggregated models are more systematically wrong about particular cases (i.e., the model is “biased” against those cases). This is a fundamental trade-off that we see in data science because you are not a statistic, you are you.

Aggregation vs. Disaggregation: COVID

If we look around the world, we see a lot of variation in the rates of COVID vaccination. The United States are different from Canada, from Germany, Turkey, Russia and so on. So, you may think that those are the variations you should be looking at. However, the US is a very large place. And so, within it there is a lot of variation. In some states people are highly vaccinated, in others they are not, but even within that, there is a lot of variation, if you break it down by county. And if you zoom into just one state, say, Colorado, it can go anywhere from very vaccinated, around the University in Boulder, to almost not at all, in the Northwest corner. And perhaps, that is not even far enough to disaggregate, perhaps what you really care about are COVID clusters: if you are at the Los Alamos National Laboratory, it is very different than if you are somewhere else. And that might just have to do with the dynamics and mechanisms of contagion. There are a lot of different levels of aggregation/disaggregation that you might want to investigate.

Aggregation vs. Disaggregation example: Insurance

MetLife has been working with Zesty.ai to make property-specific predictions about wildfire risk. In the Western United States, Australia, Greece, etc, wildfires are taking off with climate change, the risk is increased, and insurance companies are losing big money. And so, they are looking at all the rich data, such as local regulations, building permits, construction plans, down to homeowner behaviour, drone imagery, and micro-climates. They use the data to drill down with a complex AI model that can de-average the risk of fire. They can get all the way down to a risk model for that specific house. This is what we would like to see in healthcare management.

Aggregation vs. Disaggregation example: Farming

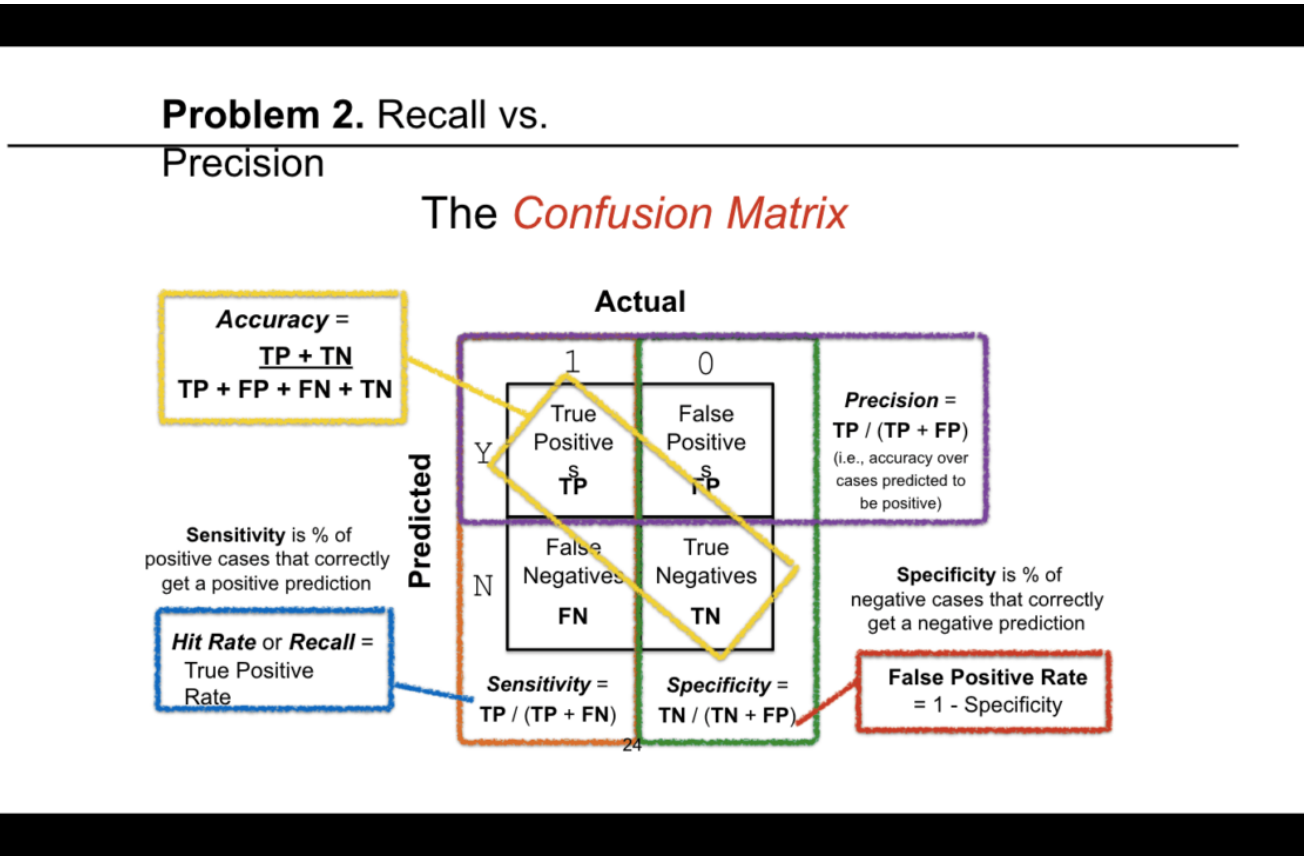
Germany is a large place. It has 4 million different agricultural fields, but within each field there are thousands of different sections. Each section can have different conditions and requirements, different treatment plans for that field. Now, each plant could have its own treatment plan. But we typically treat crops "on average." When the field is not wet enough, you water all the plants. When there seems to be some pests around, you spray pesticide across all the plants, there is no plant-to-plant treatment plan. But disaggregation can generate powerful results. We already see this in tele-farming. We have seen a revolution in the last five years in agriculture, with online tools that use everything from satellite imagery, all the way down to very specific predictions about what to do on parts of a field. In other words, "You are not a statistic little plant. You are you!"

Aggregation vs. Disaggregation: Medicine

To what extend can we use disaggregation in medicine? There are reasons to be cautious. Two excellent books, Fooled by Randomness by Nassim Nicholas Taleb, and the recently published Noise by the Nobel Laureate Daniel Kahneman, make a similar point, that too much disaggregation can lead to superstitious learning and randomness. Data science focuses on two interrelated problems: 1. Finding the right balance between aggregating or disaggregating evidence (i.e., data and predictors) 2. Finding the right balance between being accurate about what you predict (precision) and finding what you are looking for (recall). Prediction can be confusing…

The Confusion Matrix

The Confusion Matrix is a tool used in data science. In any classification there are basically four possible outcomes. Actual values are described as true or false. Predictions are described as positive or negative. Accuracy is the two correctly predicted outcomes divided by all the four possible states. But often that is not what is important. Sometimes, precision is more important, i.e., the accuracy over the cases predicted to be positive. Other times you may care about sensitivity. Sensitivity is the percentage of positive cases that correctly get a positive prediction. An example of sensitivity would be screening for Ebola. If you are a screener for Ebola at an airport you do not want any false negatives. If one person with Ebola gets through the screening, they can bring the whole place down. Therefore, a highly sensitive test is required. We often need to balance between precision and recall (sensitivity). Specificity is the percentage of negative cases that correctly get a negative prediction, it is useful to clear those subjects who do not have a certain condition.



Artificial Intelligence is making progress!

A lot of more sophisticated, in-depth analysis, such as ROC curves (receiver operating characteristic), or the AUC mentioned earlier by Dr. Scotté, can come out of the application of this basic tool. We are all becoming analysts. Physicians are becoming analysts, and they need to be familiar with data science. Using tools from data science to tune models to the right level of aggregation, precision, and complexity, can get us closer to the goal where you are no longer a statistic, you are you.
We see articles even in mainstream publications now, for instance, about blood tests that can reveal how individuals react to exercise, based on protein biomarkers. Of course, there will be setbacks along the way. Google AI, DeepMind, created a system to predict macular degeneration more accurately than human doctors, but when it was rolled out into the field and had to face the variations of the real world, it did not perform so well. Happily, more recent work in this area indicates that deep learning is now producing excellent results. AI systems are approaching the accuracy of human pathologists. They are also much faster, sometimes in the order of 150 seconds. Progress has been particularly good for cancers, for instance, near real-time intra operative brain tumour diagnosis using Stimulated Raman histology; the FDA has just approved an AI application for prostate cancer; Google is working on another AI system to detect breast cancer; Intel is working on one to detect the boundaries of brain tumours. And there are many more. And of course, the goal of all of this is to arrive to AI driven personalised healthcare. In a sense, cancer mutations can be very personal, they are a combination of you and the disease. But the great thing is we already have a very personalised healthcare system: the immune system. AI is going to be able to predict which proteins are eliciting an immune response for a particular disease in that particular individual.

Data Science, AI, and Telemedicine

Data science and AI are going to enable more frequent screening, more diagnostic testing, and earlier intervention. But assessing such information is probabilistic. Tests and options have different

levels of sensitivity, specificity, and precision. Patients will want to review the results with a doctor, leading to an increase in the demand for consultations, but of a shorter duration. Short office visits are inefficient for everyone involved. Telemedicine will be the logical solution to respond to an increased need for short consultations.
The last speaker was **Mark Lawler**, Associate Pro-Vice Chancellor and Professor of Digital Health, Queen's University Belfast; Scientific Director at DATA-CAN

How Digital Health and Telemedicine have shone a light on Covid and Cancer

In March 2020, when Dr Lawler was grieving the loss of a relative to a Covid-related illness, to reach out to him, Edward Vrdolyak, a colleague oncologist in Croatia, said something poignant, "People are starting to fear a COVID-19 diagnosis more than a cancer diagnosis." At that time there was a suspicion that the same was true in the UK, but no real evidence. To be able to support or refute such claim, a data-driven collaboration started between DATA-CAN, of which Dr. Lawler is Scientific Director, and University College London. The research had two parts: accessing real time data from hospital trusts across the UK and modelling excess deaths due to the adverse effects of the COVID-19 pandemic.

COVID-19 and cancer: "Real Time" data analysis

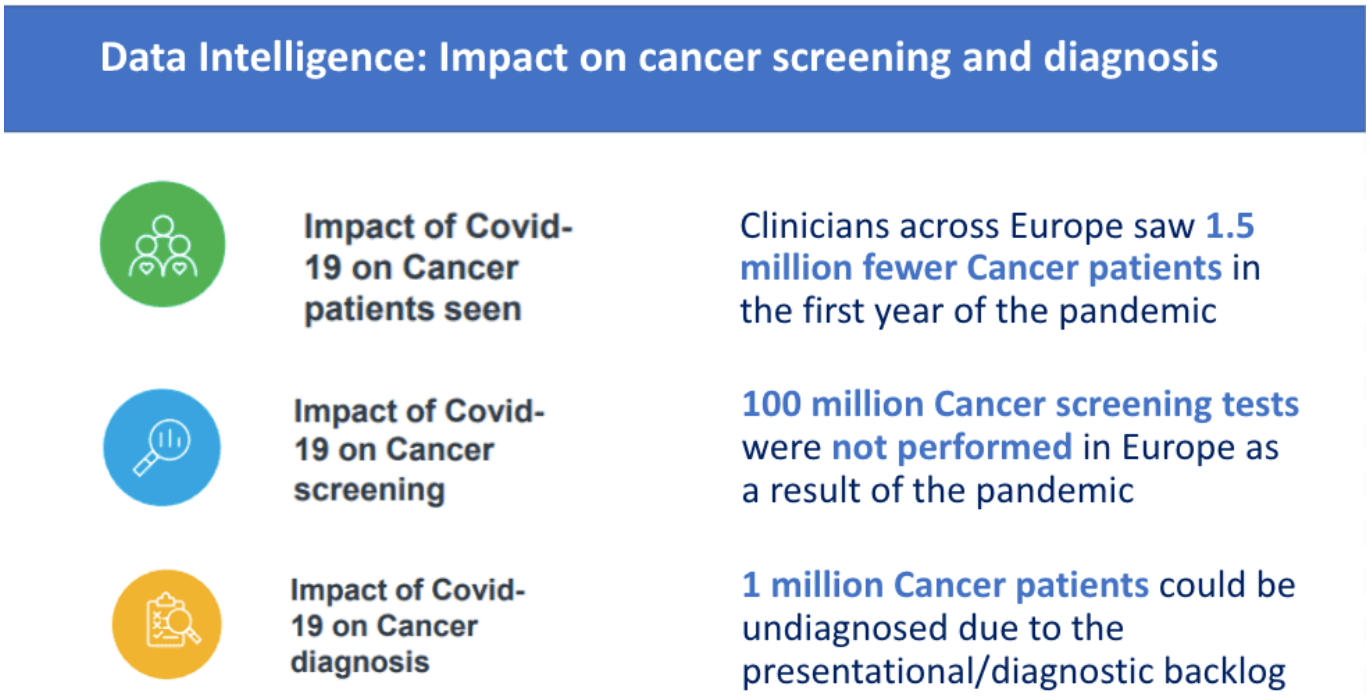
DATA-CAN researchers looked at two measures to determine the effect of the pandemic on cancer services. The first was cancer referrals, and it was discovered that 7 out of 10 people with suspicion of cancer were not getting referred to specialist services. The second was chemotherapy attendances: 4 out of 10 cancer patients were not getting access to their chemotherapy. These were the first data that drew attention from government, academia, NHS and the public to the disastrous effect of COVID-19 on cancer services and patients. Disruptions due to the pandemic were felt across the entire cancer pathway: presentational and diagnostic delay and impact on treatment. There was also a significant disruption in cancer research, with as much as 80% reduction in clinical trials and, obviously, many laboratories remaining shut.

COVID-19 and cancer: excess mortality

To model excess deaths of cancer patients due to the impact of the Covid pandemic, DATA-CAN researchers looked at data from nearly 4 million citizens in England and modelled different scenarios. They were able to predict 7-18,000 excess deaths among people with cancer. In relation to the improvements made in the past two decades, for example, in the five-year anticipated survival for a variety of cancers, even three months of disruption caused a step backward instead of forward. For certain cancers, e.g., colorectal, the pandemic might have set us back nearly a decade.

Data is also helping us to support the recovery

Data does not only help to identify challenges, but also support recovery. A DATA-CAN modelling study on colorectal cancer showed that it was possible to triage patients by using faecal immunochemical testing (FIT). This way of testing decreased many of the excess deaths that were projected. It can also reduce presentational and diagnostic delays and the immediate requirement for colonoscopy, thus lessening capacity issues. From the data, we can see that we can get back to where we were before the pandemic, but it depends on what disease we are looking at, for certain ones it is more difficult than for others, because of disruptions in screening, and so on. The impact on cancer services has been catastrophic, just to give an example, there was a 91% drop in endoscopies in the first year of the pandemic.



But there have been some silver linings

One of these is telemedicine. We have seen a significant shift from face-to-face to virtual consultations. Telemedicine services have been increasingly used to facilitate post-treatment cancer survivorship care. Virtual medicine was particularly relevant in the context of patients' concerns about exposure to Covid infection when attending their health service. A survey of brain tumour patients and their carers conducted by the International Brain Tumour Alliance indicated that 61% of patients were less willing to attend medical appointments and were quite attracted to the virtual consultation. The review conducted by prof. Raymond Chan and his team, mentioned earlier by Dr. Scotté, found a considerable body of evidence highlighting the benefits of telemedicine in the management of psychosocial and physical effects, particularly for improving fatigue and cognitive function. There is less evidence, though, on the use of telemedicine in the prevention and surveillance for recurrences and new cancers, as well as in the management of chronic medical conditions. More research is needed in this area. The recommendations given in the article are to look at different design considerations for telemedicine services and interventions; determine to which cancer survivor group(s) telemedicine is a suitable care option; promote telemedicine uptake by cancer survivors and caregivers; address implementation barriers and incorporation of effective facilitators for telemedicine interventions.

COVID-19 (like cancer) does not respect borders

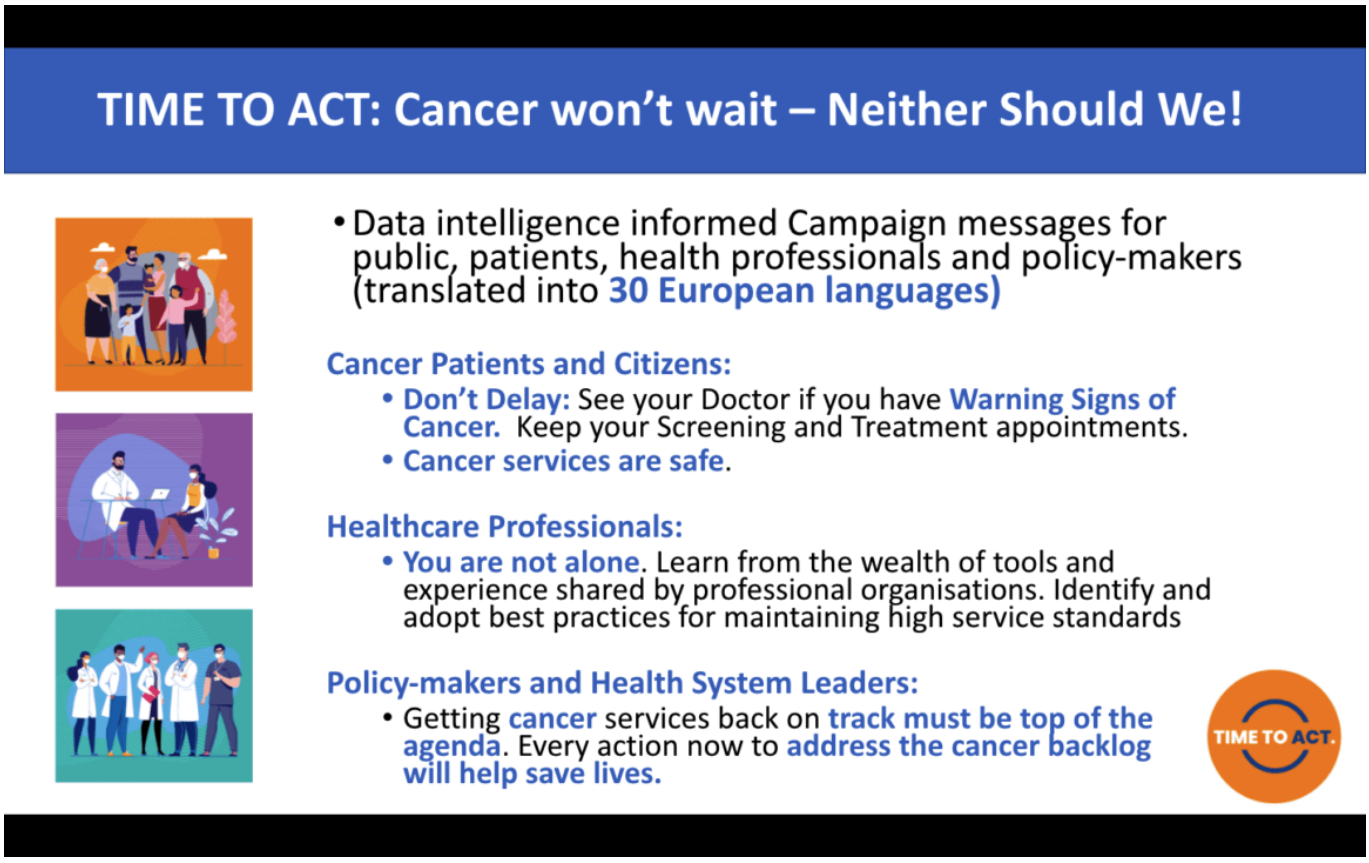
DATA-CAN presented their data on Covid to the European Cancer Organisation (ECO) and to WHO Europe. In light of the dramatic impact of the COVID-19 pandemic, the Board of ECO decided to launch a "Special Network on the Impact of Covid-19 on Cancer", co-chaired by Board members Mirjam Crul and Mark Lawler. The Special Network brings together a wide range of stakeholders, from ECO's Member Societies to patient, industry, and IT communities, and has developed a 7-Point Plan to mitigate the impact of Covid in cancer services. Launched at the European Cancer Summit, the seven priorities recommended by the Plan are to:

1. Urgently address the cancer backlog
2. Restore the confidence of European citizens and patients in cancer health services
3. Tackle medicines, products, and equipment shortages

4. Address cancer workforce gaps across the European continent
5. Employ innovative technologies and solutions to strengthen cancer systems and provide optimal care to cancer patients
6. Embed data collection and the rapid deployment of cancer intelligence to enhance policy delivery
7. Secure and sustain deeper long-term European health cooperation.

But the most important message is that **Cancer must not become the forgotten "C" in the fight against Covid-19.**

Following the Summit and launch of the 7-point plan, the Board and the Co-Chairs of the Special Network developed the "Time to Act" campaign. A data intelligence study underpinned the campaign with some headline evidence-based messages. The study was presented to the Europe Beating Cancer Committee in May 2021. Some significant finds: clinicians across Europe saw 1.5 million fewer cancer patients in the first year of the pandemic; 100 million cancer screening tests were not performed in Europe because of the pandemic; 1 million cancer patients could be undiagnosed due to the presentational/diagnostic backlog.



TIME TO ACT: cancer won't wait – neither should we!

The campaign has now been translated into 30 different European languages. It is targeted at three different stakeholders for cancer: patients, healthcare professionals and policymakers. The messages to patients are to see their doctor if they have warning signs of cancer, and to keep their appointments: **cancer services are safe.** Healthcare professionals should support and share best practices. As for policy makers and health system leaders: getting cancer services back on track must be top of the agenda. **Every action now to address the cancer backlog will help save lives.**

Next webinar