When President Richard Nixon declared war on cancer in 1971 no one could have imagined the true magnitude of the undertaking. Nearly a half-century on, great strides have been taken in the battle against this lethal enemy, yet millions still die from cancer every year.

According to the World Health Organization, 20 percent of all deaths in Europe are caused by cancer and their 2014 World Cancer Report forecasts a swell in incidental cases to 27 million worldwide by 2030. As populations and life expectancies around the world continue to rise, so too will instances of the disease. Add in a crippling economic cost of over one trillion dollars and the need to reinvigorate the fight against this pandemic is becoming ever more apparent. But the question remains: what will a modern cancer initiative look like?

On October 20th, global leaders in oncology gathered at The Economist's inaugural War on Cancer summit to explore leading initiatives in policy and financing, innovation in prevention, treatment and diagnosis and new methods of community engagement. Together they worked to reinvigorate the fight against this NCD and to shape the future dialogue on cancer.
There are more people being diagnosed with the illness, but fewer are dying from it. For many, cancer has become a chronic condition. And yet there is little focus on a patient’s quality of life and, fearing stigma and lack of support, a large number never return to employment. Meanwhile, lost productivity and escalating healthcare costs place an increasing burden on the economy.

War on Cancer 2015 brought together a wide range of stakeholders to discuss some of the top concerns. Chaired by The Economist Intelligence Unit’s Vivek Muthu, delegates looked at addressing inequalities in cancer care, the challenges in delivering personalised medicine, and, as the number of cases of cancer and other non-communicable diseases (NCDs) rise with an ageing population, the imperative in addressing cancer and comorbidity.

We thank all participants for their hugely valuable contributions, the highlights of which we present in this summary paper.

Lost productivity and escalating healthcare costs place an increasing burden on the economy.
Europe’s Aspirations and Outcomes

The conference looked in detail at what Europe is doing in its war on cancer.

John Ryan, Acting Director for the Public Health Directorate, Health and Food Safety Directorate General, European Commission, noted that in 2012 there were 3.4 million new cancer cases in Europe. Although the number of those surviving five years after diagnosis and beyond is rising, survival rates vary widely between member states.

In 2009, the European Commission set an objective that all members would produce national cancer control plans, which would ultimately reduce the cancer burden by 15% by 2020. The scheme is voluntary and designed not to be a bureaucratic process but an opportunity for improvement and mutual support. Some 24 out of the 28 EU states now have a cancer control plan in place, although there are significant differences in terms of scope and each country adapts the principles to its own resources.

A study by the Economist Intelligence Unit found that while European cancer plans are of good quality, countries could do better in several areas such as integration with chronic diseases and budget planning. There are also big variations in how much each country allocates to cancer.

The conference looked at prevention strategies in Europe. Many cancers are preventable through lifestyle changes such as stopping smoking and being more physically active, and these measures apply to other diseases such as diabetes and heart disease, yet the messages are still not getting through. Financing cancer prevention initiatives is a big problem. It was stressed that only 3% is spent on prevention, 97% on care.

England’s Hopes

England’s response to the cancer crisis was explored.

Sean Duffy, National Clinical Director for Cancer for NHS England, said that while the country has made a great deal of progress, particularly in conditional five-year relative survival rates, there are some cancers such as pancreatic and lung, where England fares poorly against comparative countries.

There are regional variations that need to be addressed. In some parts of the country, 75% of people are diagnosed with cancer at stages one and two of the disease, and in other regions this is only 30%. This is not just down to socioeconomic factors but also issues within the system.

Professor Duffy added that we must put the patient at the centre of cancer care. This is something that must be monitored, measured and published, he said.
Empowering Patients

While many more people are living for longer with cancer, it doesn’t necessarily mean they are living well.

Delegates looked at what is needed to improve the quality of life for those living with cancer, better support survivors, and help people back to work if they wish.

Francesco De Lorenzo, President of the European Cancer Patient Coalition and President of the Italian Federation of Volunteer Based Cancer Organisations, has himself recovered from colon cancer. He said that cancer survivors need more support to return to work and lead normal productive lives. To do this, we have to fight stigma in the workplace, he said.

Stuart Fletcher, Chief Executive Officer for Bupa, echoed his view, pointing out that over a third of people diagnosed with cancer do not return to employment even though they are physically able. This has major economic implications but also being able to work can be important for people’s mental wellbeing, gives them structure and a social network. Employers have a duty of care to their employees and should provide appropriate help. For some people, support might be needed for many years.

Addressing Comorbidity

A large number of people with cancer will have another disease such as arthritis, heart disease or diabetes.

Jane Maher, Joint Chief Medical Officer of Macmillan Cancer Support and NHS Clinical Leader and Consultant Clinical Oncologist for the Mount Vernon Cancer Centre, spoke in detail about the issues this brings.

The majority of those with other illnesses will not be entered into clinical trials, and it’s sometimes not known how they will react to a certain medicine.

We face a comorbidity crisis, and at the same time, a decrease in the number of generalists in the healthcare workforce. Indeed, there won’t be enough of anybody in the EU, we will be short of one million health professionals by 2020. In the NHS, 40% of the workforce is over 50. They will be retiring just as they are needed most.

Specialists should share their perspectives, Specialist nurses could expand their reach with administrative support and lay helpers.

Peter Lebowitz, Head of Global Oncology Research and Development, Janssen Pharmaceutical Companies of Johnson & Johnson, said disease interception could make this possible as there is potentially a decade to intervene before an abnormal cell becomes cancerous.

This approach is already being used to some extent such as employing colonoscopies to look for and remove pre-malignant lesions. But this is 20th century technology, he said, and there are many tumour types where we cannot remove pre-malignancy. If we apply more advanced knowledge to this concept, better understanding of what causes pre-malignancy and identify those people who could live with the pre-malignancy without it turning to cancer, and those who need treatment, we would make a big impact on the war on cancer.

This approach would, however, require a big change in how we approach healthcare. The system is based around treating disease, and reimbursement is done on this basis. How do you reimburse disease prevention? We have shown the benefits of preventing high blood pressure and cholesterol but not yet with cancer.

The Next Frontier: Disease Interception

Could we see a future where no one even gets a diagnosis of cancer?
The Killer Cell Approach

Patrick Soon-Shiong, Chairman and Chief Executive Officer of the Chan Soon-Shiong Institute of Molecular Medicine and Founder of NantWorks, said that we have treated cancer on the assumption that it is a single clone to be destroyed with the maximum tolerated dose of chemotherapy or other targeted therapies. But there are thousands of mutations in a single patient, which sometimes makes this approach ineffective.

Our own immune system could offer the best solution when treating cancer. While this has been known for some time, engineering our natural killer cell to work more efficiently is an exciting development.

Next-gen sequencing takes this further, allowing doctors to look at what is driving someone’s cancer, and provide the most appropriate treatment accordingly.

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Personalised Medicine: Challenges Ahead

A panel discussion between Andrew Schiermeier, Senior Vice-president and Head of Global Oncology, Merck Serono; Michael Zaiac, Head of Medical Affairs EMEA, Celgene; Alain Huriez, Founder and Chairman of The European Personalised Medicine Association (EPEMED) and Alfredo Covelli, Head of Clinical Development and Medical Affairs, Region Europe, Novartis Oncology, examined the challenges and opportunities in personalised medicine.

As diagnostics play an increasing role in delivering more tailored treatments, the relationship between the pharma industry, diagnostics companies, regulators and payers becomes highly complex. How is value rather than cost determined? Does the value come from the diagnostic or the drug? We have ever more complex diagnostics but we have still not solved the reimbursement issue.

More fundamentally, could pharma be put off using diagnostics if the result might be to push a patient towards a rival product? Morally you have a duty to bring the right medicine to the right patient, delegates said. It also makes business sense for pharmaceutical companies to have a drug that will work in 80 to 90% of patients rather than 20%. Doctors will automatically prescribe the most appropriate drug, and payers don’t want to fund ineffective treatments.

Who should pay for the diagnostics? To prevent possible bias, it was put forward that diagnostics should be decoupled from the drugs that come after them.

Greater collaboration between diagnostic companies is also needed. There are competing companies in just one area and if they come to the market at the same time, it could create confusion.

Next-gen sequencing takes this further, allowing doctors to look at what is driving someone’s cancer, and provide the most appropriate treatment accordingly.

“Morally you have a duty to bring the right medicine to the right patient...”
New Funding Models

While we are seeing major advances in cancer treatment, costs are escalating and budgets are tighter than ever.

The problem is only going to get worse; chronic conditions already account for around 70% of healthcare expenditure and the number of people above 65 by 2050 will be over 1.5 billion. Meanwhile costs are increasing: the median monthly cost of new cancer drugs in the US has risen by more than 700% since 1990. How can the needs of patients be balanced with what healthcare systems can actually afford?

Silvia Ondategui-Parra, Partner – MED Healthcare and Life Sciences Leader – EY; Paul Catchpole, Value and Access Director of The Association of the British Pharmaceutical Industry; Carole Longson, Director of the Centre for Health Technology Evaluation and Executive Director for the National Institute for Health and Care Excellence (NICE), and Peter Clark, Oncologist and Chairman of the Cancer Drugs Fund, looked at the issues.

A flexible pricing system for drugs would help with the cost rising or falling depending on the value a drug provides in its lifecycle. To be held hostage to a price set years ago is madness, it was said. We need to shape the system so we collect information in real time and feed that back to decision makers. However, while the argument for dynamic pricing is compelling, if it is done at scale for all new drugs it becomes complex and puts further pressure on healthcare systems.

How to bring innovation to patients more quickly was discussed. Moving away from a sequential drug development process could speed things up with all stakeholders working in parallel. Earlier and more frequent dialogues during the R&D process are needed. European joint efficacy assessments would also bring efficiencies.

But with innovative drugs that show promise but not yet proof, how do you manage risk, and how do you get them to patients when payers are not yet convinced? The NHS patient access scheme is one such way that pharma companies can get innovative and expensive medicine to patients. A drug for multiple myeloma, for instance, showed promise and so an outcomes-based scheme was implemented with access to the drug continued on the basis of meeting certain outcomes. The Cancer Drugs Fund has also been set up to provide additional funding for treatments that would not be routinely available on the NHS.

In an earlier presentation, Hans-Georg Eichler, Senior Medical Officer at the European Medicines Agency spoke about the MAPPs (medicines adaptive pathways to patient) approach, which supports areas of high unmet need where there is a credible promise of a treatment to address. A small well-defined group is selected to take part at the earliest part in a product lifespan, with the evidence collected in an ongoing and real-time fashion. The model becomes one of lifelong learning of a product, where decisions by licensing and payer bodies can be reversed as more evidence becomes available.

The War on Cancer: Measuring Success

How do we gauge whether we are winning the war on cancer?

The conference brought together Christopher Wild, Director of the International Agency for Research on Cancer; Kevin Harrington, Joint Head of the Division of Radiotherapy and Imaging, The Institute of Cancer Research; Alojz Peterle, MEP, Member of the European Parliament, Co-Chair, Health Working Group and President of MEPs Against Cancer Group, and Cary Adams, Chief Executive Officer of the Union for International Cancer Control, to look at how we might define success.

If we are to truly win the war, we need to get better at prevention and early detection, it was argued. Given the number of cancer cases are increasing and costs are spiralling, no country, however rich, can treat its way out of the cancer problem.
targets. There is a natural tendency for scientists to go back to fertile territory and an emphasis on me-too drugs. They have to be secure that it won’t harm their careers if they are seen to ‘fail’ when trying to break new ground.

An increase in vaccination programmes could also reduce the number of cancer cases. HPV vaccines, given to girls to prevent cervical cancer, are now being given to boys in Australia as it could prevent some throat cancers.

Equality in access to treatments is also a concern that urgently needs to be addressed. There is a big disparity across the world in paediatric cancers, it was noted: in developed countries, 80% of childhood cancers are resolved but in low to middle income countries it is only 20%. Europe also faces inequalities and more regulated data should be collected to measure results.

Researchers need to be empowered to explore new targets. There is a natural tendency for scientists to go back to fertile territory and an emphasis on me-too drugs. They have to be secure that it won’t harm their careers if they are seen to ‘fail’ when trying to break new ground.

While the conference addressed the many challenges ahead, it ended on an upbeat note. Cancer is firmly on the global agenda and there is top-level commitment to reduce the number of deaths from cancer and other NCDs. Civil societies are working in partnership with governments, and the private sector is developing its role beyond drug discovery. The drug pipeline looks good, we have breakthrough radiotherapies, and we are making some inroads into living healthier lifestyles. The audience heard that we are now at a stage where the stars are aligning, and the future for preventing and treating cancer looks hugely positive.

We know how to prevent many cancers, but still far too many people are not adjusting their lifestyles. Low to middle income countries face a major problem in the number of people who still use tobacco but these countries have little cash for anti-smoking campaigns – Europe could play a role in offering support.

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