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Editorial

Cancer Core Europe: A first step towards a virtual cancer institute in Europe?

During the last decades, we have witnessed remarkable advances in basic cancer research as well as related disciplines. These developments together with the advent of novel and powerful technologies have provided new opportunities for delineating innovative clinical research strategies. However, implementation of translational research discoveries in the clinical setting in order to improve cancer care is a main challenge today due to the ever increasing cancer problem. By and large, translation of laboratory discoveries into better outcomes for patients takes many years to complete, and within the European Union (EU) this has to some extent been exacerbated by the lack of a unified vision and strategy for fighting the disease(s) in partnership, especially in today's era of personalised/stratified cancer medicine. The dearth of coordination at European, national, and regional levels has led to a fragmentation of efforts, priorities, funding sources, and regulations.

Already in September 2002, the European Commission (EC) together with the European Parliament (EP) organised a conference entitled "Towards greater coherence in European Cancer Research" in an effort to identify why Europe was not delivering the outcomes awaited by both healthcare professionals and patients (http://ec.europa.eu/research/info/conferences/cancer/canconf_prog.pdf). Prompted by the outcome of this meeting as well as by further discussions with leading scientists and scientific organisations (Saul, 2008), the former EU Commissioner with responsibility for research Philippe Busquin set up in 2004 a temporary Working Group on the Coordination of Cancer Research in Europe "to advise the EC and make recommendations on the subject". The group – chaired by Member of the European Parliament M. Vim van Velzen and composed of representatives from clinicians, basic researchers, health authorities, funders, patient organisations, and industry – was invited to identify areas, topics and research subjects with a significant level of activity in the Member States (MS) that could benefit from coordination at the European level. Barriers against collaboration in cancer research had to be identified, and ways pursued to foster the development of collaborations among the MS. The advice and recommendations of the Working Group were

expected to be used by the EC in preparing a call for proposals. The EP had supported increased funding for cancer research in the EU's Sixth Framework Programme (FP6; 2002–2006), and the need to optimize the efforts to fight the disease in partnership was urgent.

Following the recommendations of the Working Group, the EC in 2004 launched a call for proposals in FP6 that led to the funding of the Eurocan+Plus project in October 2005 as a Specific Support Action. The overall objective of this two-year project (2005–2007) was to identify barriers detrimental to the progress of scientific knowledge and quality of care in Europe. The consortium was expected to address issues of co-ordination of cancer research activities in Europe, and identify how improved coordination could be implemented through already existing support schemes such as ERA-NET schemes and Article 169 of the Nice Treaty. The main reasons single out as underlying fragmentation were suboptimal translational cancer research and lack of critical mass, and the role of Comprehensive Cancer Centres (CCCs) was considered critical given the complex infrastructures needed for advanced translational cancer research. One of the main recommendations of this comprehensive and inclusive EU project in which researchers, clinicians, funders, patient organisations, regulators, and industry participated, was the creation of a platform for translational cancer research composed of interlinked cancer centres with shared infrastructures and collaborative projects to facilitate rapid advances in knowledge and their translation into better cancer care; a precursor to the creation, in the long-term, of a European cancer initiative to stimulate innovative cancer research. A European Cancer Institute (ECI; a proposal already made in 2001 by Fritz Schroder and leading European scientists; Saul, 2008) was discussed and agreed upon, provided it would be a virtual structure.

Encouraged by the outcome of the Eurocan+Plus project, the directors of 16 leading European cancer centres met in Stockholm in September 2008 to define the "European platform for translational cancer research" concept, and to discuss steps towards its implementation. To mark their commitment to working towards its realization, a manifesto called "the Stockholm Declaration" was published, clearly

stating their intention to join forces and share resources (Ringborg, 2008). This key event prompted a series of meetings and activities among the cancer community (Brown, 2009) leading in 2011 to the funding in FP7 of the EurocanPlatform Network of Excellence. The consortium, which is funded until the beginning of 2016, includes 23 European cancer centres, as well as scientific and patient organisations, and has as a remit to structure translational cancer research in Europe with a focus on personalised cancer medicine. The long-term goal being the creation of a virtual ECI having the critical mass of expertise, resources, infrastructures, and number of patients that is needed to innovate and perform in all areas of cancer research.

In July this year, six CCCs belonging to the EurocanPlatform consortium (Gustave Roussy Cancer Campus Grand Paris, the Cambridge Cancer Centre, Karolinska Institutet, the NKI - Netherlands Cancer Institute, Vall d'Hebron Institute of Oncology and the German Cancer Research Centre with its comprehensive cancer centre the National Centre for Tumour Diseases (DKFZ-NCT) Heidelberg) took the initiative to establish the Cancer Core Europe (Eggermont et al., 2014). The plan, which was spearheaded by A. Eggermont and O. Wiestler, was supported by the Scientific Steering Committee of the EurocanPlatform consortium and may represent the first significant step towards establishing a sustainable virtual ECI. The six centres, which are complementary in many aspects, will address the cancer care-cancer research continuum in partnership, with emphasis on the development of personalised cancer therapy. Together, they have good critical mass with a large number of patients, biological materials, and technological resources. Cancer Core Europe is likely to be highly competitive when applying for research funds at national and international level, and it is expected that other centres may join the consortium in the long-run in order to further strengthen other research areas, such as outcomes research, early detection, and prevention. The EurocanPlatform consortium in collaboration with the European Academy of Cancer Sciences (EACS; <http://www.europeancanceracademy.eu/>) has developed quality criteria and methodologies for designation of CCCs of excellence in an effort to further quality assure cancer research centres. The methodology will be tested in practice during the autumn 2014.

The establishment of the Cancer Core Europe – more than twelve years since the strategic developments triggered by the EC, the EP, and the cancer community – is undoubtedly a very important milestone in the quest towards expediting the implementation of new discoveries and technologies into clinical practice. There are still, however, many obstacles that need to be removed in order to achieve the final goal of creating a sustainable virtual ECI that can provide a more rational structure for addressing the cancer research-care continuum; these include (i) increasing research coordination at national, regional, and EU level, (ii) tackling the issue of sustainability, (iii) support for high end technology platforms in personalized oncology, (iv) training and education for the next generation of young oncologists and physician scientists, (v) encouraging collaboration between the Directorate General for Health & Consumers and the Directorate General for

Research & Innovation (including national research and health ministries), (vi) ensuring that science policy makers acknowledge the value of long-term research, (vii) creating an appropriate legal and ethical framework to encourage collaboration between all stakeholders in the cancer continuum, (viii) promoting academia-industry collaboration, and (ix) informing civic society of the benefits of research. The EurocanPlatform has already gained some ground in tackling a number of these challenges in collaboration with the European CanCer Organisation (ECCO), a patient centred organisation that has oncopolicy as one of its major priorities (<http://www.ecco-org.eu/>) (Celis and Gago, 2014).

Finally, it should be pointed out that the eventual creation of a virtual ECI may pave the way towards the creation of a European Institute(s) for Health Research in the long-run, similar to the NIH in the USA. This attractive possibility has already been considered by the pharmaceutical industry (http://ec.europa.eu/health/ph_overview/Documents/key08_en.pdf), the EC (<http://blogactiv.eu/blog/author/stavros/>), as well as biomedical organisations such as ECCO (<http://www.ecco-org.eu/>), EACS (<http://www.europeancanceracademy.eu/>) and the BioMed Alliance (<http://www.biomedalliance.org/index.php/about-the-biomed-alliance>), and will surely be a topic for discussions in the near future.

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