EUROPEAN ACADEMY OF CANCER SCIENCES
under the auspices of ECCO

Response to European Commission Green Paper 'From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation funding'

INTRODUCTION

The European Academy of Cancer Sciences is a body grouping together representatives with outstanding scientific and academic backgrounds from all cancer disciplines to provide knowledgeable and unbiased advice on matters of policy and priorities at the national, European and global level.

The European Academy of Cancer Sciences strives for excellence, independence, leadership, diversity and flexibility.

Throughout its work, the European Academy of Cancer Sciences provides independent, authoritative and evidence-based advice to underpin policy for the prevention, management and palliation of cancer in Europe.

Europe has a number of important structures in place for advanced cancer research: strong basic research centres, cancer registries (in some countries population-based) and epidemiology, in many countries healthcare systems which can contribute to clinical research, biobanks and well-functioning organisations for clinical trials.

There are obvious advantages of European collaboration in cancer research. The European Academy of Cancer Sciences warmly welcomes the opportunity to respond to the European Commission Green Paper 'From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation Funding' in which we define the aspects of the future EU research infrastructure that may maximise the benefit for cancer research and thereby lead to a decreased burden of death and suffering from cancer in Europe.

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Section 4.1 Working together to deliver on Europe 2020

Q2. How should EU funding best cover the full innovation cycle from research to market uptake?

The European Academy of Cancer Sciences insists on **comprehensiveness** as a guiding principal for addressing the challenge of cancer, in particular in relation to innovation.

The full innovation cycle from research to market uptake must be seen in relation to an effectively linked cancer research continuum, from basic research to preclinical research, and clinical research through to clinical application and evaluation. A model for complete translational cancer research is the **Comprehensive Cancer Centre** which integrates cancer prevention and care with research and education and where there is a clear link between research and innovation.

In this regard, it is imperative that EU funding supports and promotes **multidisciplinary** and **multiprofessional** research teams equipped with the necessary critical mass covering total or significant parts of the research continuum. As concluded by the Eurocan+Plus project, funding should also support **collaboration between centres** to guarantee the critical mass of patients, biological materials, technological resources and competences.

Q3. What are the characteristics of EU funding that maximise the benefit of acting at EU level? Should there be a strong emphasis on leveraging other sources of funding?

All available scientific expertise in Europe must be harnessed and exploited in order for innovative and multidisciplinary solutions and breakthrough discoveries to be found and utilised to combat the growing societal challenge of cancer – from prevention through to early detection and treatment.

Such solutions will only successfully redress the burden of cancer if carried out in partnership with **all stakeholders** (i.e. Member States, the European Commission, the European Parliament, universities, scientific organisations, research performing and funding organisations, NGOs, healthcare providers, industries and businesses, legal and ethical bodies, individual citizens and the media) and **across the entire cancer continuum** (basic, clinical, translational, epidemiology, behavioural and health service research).

EU funding programmes can be extremely effective in bringing international teams together in collaborative partnerships. Moreover, most domestic sources provide funding in insufficient

levels and/or for too short periods of time to produce research that is cutting-edge internationally. In order to maximise the benefit of EU funding for cancer research, and to ensure that studies are of sufficient quality and originality to provide novel evidence relevant for all - or large parts - of Europe, it will be necessary to **re-assess the suitability** of the currently available instruments to support research at national and European level. It may be necessary to **transfer a greater proportion of national research budgets to European level** or to devise instruments for the **coordination of national resources at supranational level.**

Deeper, longer-term collaborative projects or infrastructures allowing for **sustainable networks** are key for more complex, more challenging or more innovative projects which may lead to ground-breaking research findings for Europe.

Meeting Europe's societal challenges will not only require a great deal of **commitment** by Member States, but also **political innovation** by the European Commission, European Parliament and Council.

The European Academy of Cancer Sciences has identified the **coordination of funding for cancer research across the continuum** as a major problem for the future and in particular, **sustainability issues** will have to be addressed quickly if we are to fight cancer in partnership using all the expertise (variable geometry approach) and resources available in Europe.

A major problem is funding of **cancer prevention research** which today is largely dependent on public funding. The EU must adopt an infrastructure that leverages all available other sources of funding in order to reach the goals of the Innovation Union 2020 Strategy and most importantly, meet the needs of cancer patients.

Q4. How should EU research and innovation funding best be used to pool Member States resources? How should Joint Programming Initiatives between groups of Member States be supported?

Cancer is a huge societal challenge and a **major blight on the health of European citizens**. Given the breadth of the cancer continuum and the fact that no single Member State or cancer centre has the critical mass of patients, expertise or quality infrastructures to address every facet of the disease, it is an excellent example of how EU research and innovation funding may be used to pool Member State resources and of how Joint Programming Initiatives can be effectively supported by groups of Member States.

Researchers, groups and centres in Europe need to create networks of collaboration between each other and acquire access to the best possible technologies to tackle the cancer problem. With this in mind, the European Commission´s 7th Framework programme recently funded the **EurocanPlatform**, a Network of Excellence that aims at structuring translational cancer research between 23 cancer centres in Europe. The Platform brings together Comprehensive Cancer Centres (CCCs) with a strong research agenda with basic/preclinical Cancer Centres in an integrated network to collaborate and share resources to optimize the translational process, to increase global competitiveness, and to achieve significant breakthroughs in cancer prevention and treatment.

An important conclusion from the Eurocan+Plus project was that **collaboration between cancer research centres is mandatory to reach the necessary critical mass and provide research groups with the necessary infrastructures for translational cancer research**. The concept of **personalised cancer medicine** is fundamental for the development of therapeutics. Advanced translational research strategies using a **variable geometry approach**, permitting the use of **patients, biological materials, technological resources and competences** must be a key focus. Collaborations involving multicentre studies will lead to **cross-fertilisation** as well as improvement in the **coordination of research activities**. Importantly, they will guarantee optimal research efforts with patients' interests at the core.

One way that EU research and innovation funding could support collaboration between the main cancer research centres in Europe is to **pool Member State resources for cancer centres and research groups** - Member States would provide **in-kind contributions** – and these would be **matched by EU funding**. Such a model would address sustainability in the long-run and could serve as an example for other diseases, examples being cardiovascular and neuro-degenerative diseases. For this to work and in order to preserve excellence, it would be necessary to give high priority to **competitiveness in the selection and renewal processes** and to **quality assurance** of cancer centres and research groups.

Joint programming is another possibility, although the European Academy of Cancer Sciences favours a process in which the scientific community is consulted right from the beginning.

On a more general note, **bidirectional tools** are needed to communicate policy needs and research results between policy makers and the research community. Such tools, or

communication channels, should allow quick uptake of research results by policymakers and effective steering of the research agenda to address societal and policy needs.

Section 4.2 Tackling societal challenges

Q9. How should a stronger focus on societal challenges affect the balance between curiosity-driven research and agenda-driven activities?

A focus on societal challenges is vital but should not be at the expense of curiosity-driven research as there are no applications without discovery.

Patient advocates have a crucial role to play in helping promote innovative research by steering the agenda towards research that addresses critical societal challenges. The European Academy of Cancer Sciences believes the European Commission can help **bridge the gap** between science and society and may be aided in this respect by involving patient advocates in its prioritisation of funding topics.

Q10. Should there be more room for bottom up activities?

Bottom up activities are of crucial importance for appropriate policymaking. Cancer research and care involves a large number of different professions and disciplines and we are seeing **increased complexity in practically all areas of the cancer continuum**. The expanding knowledge in cancer biology offers new possibilities to innovate research on prevention, early detection and therapy. **Personalized cancer therapy** will be the focus in the coming decades. **Coordination and prioritisation** will increase in importance, as will the need for **multidisciplinary/multiprofessional collaboration** as well as a **multi-sectoral approach** spanning research, employment, public health, education and agricultural policies amongst others.

The European Commission as well as Member States may expect **independent, high level, authoritative and evidence-based advice** on all aspects of cancer research and innovation from the European Academy of Cancer Sciences. Independent academic activities of the European Academy of Cancer Sciences greatly enhance European options for bottom-up approaches and may serve as a validated role model in this respect.

In particular, the European Academy of Cancer Sciences is able to provide **insights and predictions** on the growth of the cancer problem and the **innovative research areas** which are anticipated to address the problem. The European Academy of Cancer Sciences will be

able to **outline future strategies and roadmaps** for research in cancer prevention, early detection and therapeutics – strategies which also involve late translational research.

Increasing the quality of reviews is important to encourage applications from top researchers. It is an **enormous waste of resources** to invest substantial time and effort in writing grant proposals and receive feedback that indicates that the reviewers lack even basic expertise on the topic they were reviewing. The European Academy of Cancer Sciences, which is growing and which boasts at present over 130 eminent experts from all oncology disciplines, is a **valuable pool of multidisciplinary expertise** which may be consulted during the evaluation of proposals.

Q11. How should EU research and innovation funding best support policy making and forward-looking activities?

The continuing increase in cancer incidence and prevalence, the increasing number of patients with incurable disease and survivors with long-term problems after treatment make cancer a **significant societal challenge**. The predicted time trends for the next decades indicate that the cancer problem will grow to a magnitude which will be **difficult to handle by most nations**. At the same time, increasing knowledge in basic research areas/cancer biology offers new possibilities to tackle the negative trends. Population-based prevention must be a pillar of any efforts to reduce the cancer burden in the long term.

Needs within and between healthcare systems are changing over time. Indeed there is an increasing problem of a **west-east gradient in research and funding**, a problem that is jeopardising the whole European research/healthcare landscape.

Present and future shortcomings in cancer prevention, early detection and treatment within and between Member States should be a focus for research. The European Academy of Cancer Sciences is able to identify areas where research is needed to underpin more effective policy.

For innovative cancer prevention, early detection and treatment, cancer medicine should be more **predictive and personalized**. This is expressed clearly in the 4P Medicine Strategy in the US. With present technologies and knowledge, development of predictive and personalized cancer medicine is a realistic goal.

What is more, views are polarised in **areas of oncology policy where common misconceptions exist** such as screening and treatment policy and protocols. The European Academy of Cancer Sciences can provide examples of such areas so that EU research and

innovation funding may be directed at projects aimed at **expanding the evidence base** in order to make progress in areas that are currently at a standstill.

Q13. How could EU research and innovation activities attract greater interest and involvement of citizens and civil society?

The Commission could create greater interest and participation in its research and innovation activities not only through communicating them in a **clear and jargon-free manner**, but also by communicating the **value and role of research to society** including the **economic benefits** thereof. Science must have a **central position** in society, rather than a distant, inaccessible one, in order for research and innovation activities to attract greater involvement of citizens and civil society. Umbrella organisations and the scientific community can help disseminate **clear messages** from the EU about its activities in the field. The engagement of **patients as partners** in research initiatives can help make science more accessible to a lay public.

Education is a key aspect in involving citizens in EU research and innovation activities. Inspiring the next generation can play a major part in ensuring research and innovation has a key role in society whilst a **clearer career pathway for post-doctorates** will promote the accessibility and attractiveness of research careers.

Scientists can help ensure accurate and reliable reporting of scientific matters by the media. Science journalism courses should be promoted in order to foster **better understanding and relationships** between the worlds of science and journalism.

Section 4.4 Strengthening Europe´s science base and the European Research Area

Q22. How should EU support assist Member States in building up excellence?

EU support may assist Member States in building up excellence through **enhancing knowledge development and transfer**. The EU should support investment in CME courses, national as well as international collaborations, grants supporting placements/research in other countries and educational courses such as the **ECCO FLIMS** annual workshop which aims at developing a strong, expanding base of well-trained clinical researchers by providing them with the training they need to develop and conduct better clinical/translational trial

designs. Fellowship programs that enhance the mobility of researchers, particularly for younger researchers, are of crucial importance.
Furthermore, data protection regulations should be revised to ensure that tissue banks and patient data can be exchanged easily and facilitate large scale epidemiologic research.

Q26. How should international cooperation with non-EU countries be supported e.g. in terms of priority areas of strategic interest, instruments, reciprocity (including IPR aspects) or cooperation with Member States?

There must be a shift in the current cultural attitude towards research if today's societal challenges are to be addressed. Cancer is a societal challenge that is **not contained within single nations or regions** and as such it requires international collaboration in research and innovation. **Non-EU Member States should be invited to participate** in EU research and innovation projects, notably where such involvement would enable research results to be **translated into products and services** to address societal challenges such as cancer. Collaboration with **international organisations** including the WHO, World Bank, OECD etc is also of importance.