

Briefing on the impact of Brexit

Background

The UK's decision to leave the EU is likely to have an impact on research into brain tumours in the UK and EU member states. The impact will be particularly acute for rarer cancers like brain tumours which benefit from a critical mass of expertise and knowledge and a wider pool of patients for clinical trials across the EU.

UK co-ordination with the EU enables progress to be made on research into brain tumours, through access to research programmes which facilitate collaboration with other member states and compatible regulation which encourages research into rarer cancers with small patient populations.

There are a number of risks and uncertainties which could undermine collaboration and joint working between the UK and EU member states. We have outlined three key issues relating to Brexit which could impact those personally affected by a brain tumour.

The issues

1. Research Funding

The Brain Tumour Charity does not receive EU funding for research projects. However, the UK is currently the second largest recipient of research grants from the EU's Horizon 2020 Framework Programme and in the period between 2009/10 and 2013/14 research income from the EU to UK universities saw an increase of 68%. (1)

In cases where the outcome of our initial investment shows promise, a research project may receive further funding from other sources. In 2014 for every £1 we invested, a further £2.30 was leveraged in further funding for this research. Of the further funding in that year, 22% was acquired from the European Union. (2)

One of the beneficiaries from further funding from the EU has been the Samantha Dickson Brain Cancer Unit, led by Prof Paolo Salomoni at the UCL Cancer Institute, which carries out research into childhood and adult glioblastomas (high-grade brain tumours). (3)

After initial investment of £1.5 million by The Brain Tumour Charity, the Unit was able to obtain £1.7 million of further funding from the European Research Council (ERC), a European Commission funding scheme, which allowed Prof Salomoni and his team to expand the capacity of research work in the lab.

Some of his research findings have been translated into a clinical trial. Work directly funded by the European Research Council has led to the generation of a much needed preclinical model of paediatric glioblastoma that will accelerate discovery and translation into new clinical studies.

Moving forward, we are concerned that not being able to apply for another EU programme would substantially affect the Samantha Dickson Brain Cancer Unit's ability to drive scientific discovery and translation.

Whilst the UK Government has pledged to guarantee funding for research projects supported by Horizon 2020 once the UK leaves the EU, it is critical that we are able to participate and lead applications in Horizon 2020's successor Framework Programme (FP9), which is due to begin in 2020, and that UK based researchers are able to continue accessing grants from EU research programmes.

Without full access to Horizon 2020 and FP9, UK science is likely to be at a disadvantage compared to our European partners, who will be able to lead on research applications to EU institutions and therefore influence the direction of research across the EU. It is important to note that whilst non-EU member states are associate members of Horizon 2020, this limits their influence on research applications, and recent restrictions on ease of movement in Switzerland have impacted the ability of researchers to apply for grants from the programme.

2. People

During negotiations, it is critical that the Prime Minister's objective to ensure control of immigration from the European Union does not affect the ability to deliver her other stated objectives to make Britain a magnet for international talent, and one of the best places in the world for science, research and innovation.

Restrictions to ease of movement are likely to have an impact on charities that fund research and their ability to attract the best international talent in scientific research from across the EU. For example, the Samantha Dickson Brain Cancer Unit at UCL currently attracts some of the best PhD students and post-docs from across the European Union whose skills and expertise help drive progress in brain tumour research.

However, Prof Paolo Salomoni, an EU citizen, who has led the research work at the Samantha Dickson Brain Cancer Unit, is now relocating to an academic position in Germany, partly as a result of the uncertainty following the EU referendum. This means that research funding to the Unit has been paused whilst we work with UCL to identify a senior researcher to lead and re-establish this particular project.

We also know of several prominent people in research who have turned down positions in the UK or moved into another field of research as a direct result of the UK's decision to leave the EU.

Our concern is that further restrictions on ease of movement could have more impact on the ability to attract the necessary expertise to drive forward projects at UK research institutions. In May 2016, the Social Market Foundation published analysis which suggested that if the same VISA restrictions on non-EEA workers was applied to EEA workers, it could affect the ability of employees to fill skills shortages in the science sector. (4)

3. Regulation

When the "Great Repeal Bill" passes into law, it is vital that the UK Government ensures an aligned and compatible regulatory framework between the UK and the EU on crucial areas of regulation affecting research into childhood cancers and brain tumours. This includes the Paediatric Medicines Regulation and Clinical Trials Regulation which were introduced in the European Parliament.

Established in 2007, the Paediatric Medicines Regulation (5) aims to address the lack of cancer medicines specifically developed for and tested on the paediatric population (ages 0-18) as a result of small patient population and ethical concerns around trials that involve children. With such a small cohort of patients, it can be impossible to recruit sufficient numbers to a clinical trials in one country, so collaboration at a European level is crucial.

Whilst the Paediatric Medicines Regulation needs revision to ensure more medicines are developed for paediatric patients, it is crucial there is alignment between UK and EU legislation in this area following Brexit.

The European Clinical Trials Regulation (6) establishes common procedures between member states that can reduce delay, bureaucracy and maximise the impact of investment from medical research charities. The regulation also encourages and facilitates the inclusion of multiple member states which is vital for research into rarer cancers with small, disparate patient populations.

For example, Great Ormond Street Hospital are leading on a trial, co-funded by The Brain Tumour Charity, that tests new treatments in children affected by diffuse intrinsic pontine gliomas (DIPG). The

median survival of a DIPG is 9-10 months and there is no validated treatment except radiotherapy, which is essentially palliative. (7)

This trial will recruit children from across Europe to ensure a sufficient sample size to give meaningful data. Almost half of the 150 children recruited to the trial over a four year period will be recruited in France. Many other trials like this one could not take place without pan-European collaboration.

Recommendations

- The UK Government should ensure that the UK medical research community is able to participate in and lead applications to EU research funding programmes once Horizon 2020 has ended.
- During negotiations, it is crucial that the UK Government's objective to control immigration from the EU does not restrict the ability of UK institutions in the science and research sector to attract and recruit talent from EU member states.
- The UK Government should ensure an aligned and compatible regulatory framework between the UK and the EU on crucial areas of regulation affecting childhood cancers like the Paediatric Medicines Regulation (2007).

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