
Summary

- Medical research underpins sustainable and innovative health care by delivering new medicines, informing preventative health measures, and evaluating the impact of treatments. As such, the UK benefits from being home to a world-leading medical research community.
- EU membership delivers significant opportunities to the medical research community, and as the UK reappraises its relationship with the EU it is vital that the complex interdependencies around medical research are appropriately acknowledged and sustained.
- Collaboration is embedded deeply within EU programmes such as Horizon 2020, and freedom of movement across the EU has allowed the UK to attract talented medical researchers from across Member States. During the negotiation process, this dynamic exchange should be protected and urgent action should be taken to clarify the long-term future of EU researchers already working in the UK.
- Significant financial support for UK medical research is delivered through EU grants, capital projects, and targeted programmes such as the Innovative Medicines Initiative. Future access to these programmes must be clarified, and measures such as the Treasury's promise to underwrite of EU grants are to be welcomed.
- The UK has pioneered the development of transnational governance systems such as the European Research Area, to support efficient and effective cooperation. Options to retain and grow this voice should be considered within Brexit negotiations.
- Harmonised EU research regulations have eased the exchange of expertise, data and research resources across Member States. This benefits research in both the private and public sector, and the Government must carefully balance the value of alignment against potential gains from greater tailoring of regulations to UK circumstances.
- The global influence of UK medical research is amplified by EU membership, and Brexit negotiations should include a long-term vision for to continue demonstrating leadership, how to work productively with EU partners, and how to deliver a global research agenda that benefits all.

Introduction

The Academy of Medical Sciences promotes advances in medical science, and supports efforts to see these advances translated into healthcare benefits for society. Our elected Fellowship includes experts drawn from a broad and diverse range of research areas.

We welcome the opportunity to respond to the Committee's inquiry into priorities around health and social care relating to the UK's departure from the European Union. Research and innovation are vital to developing and delivering the best health care for patients. If the UK community is to continue delivering these improvements in health and wealth, then the needs of research must be at the heart of Brexit negotiations.

We have been actively engaged with the wider debate around Brexit and research, including submitting evidence to the Commons Science and Technology Committee

inquiry.¹ We have taken this opportunity to focus specifically on issues relating to medical research, and the challenges and opportunities that Brexit may present to the medical research sector. Medical research ensures that health care in the UK remains at the forefront of innovation – delivering new medicines, informing the development of preventive health measures, and evaluating the impact of treatments.

Our written evidence has been informed by engagement with our Fellows, from across the disciplines and sectors we represent. We would be pleased to provide further evidence, and copies of our previous relevant outputs, if required.

Collaboration and mobility

Membership of the EU facilitates researcher mobility and collaboration, generating what has been referred to as the 'Fifth Freedom' – the free movement of knowledge.² The medical research community in the UK benefits from this environment which supports increased collaboration, faster uptake of innovative ideas, and access to specialised expertise – particularly important for emerging health concerns.

The UK currently acts as a hub for EU researchers. EU nationals comprise around 20% of the UK academic community, a proportion which rises further in many leading research institutions.³ These mobile researchers are frequently accompanied by external funding, and continue to attract funds once here: more than 30% of 2014 European Research Council grantees in the UK were non-UK EU nationals.⁴ The circulation of talented individuals develops the research leaders of tomorrow, and builds an influential network of collaborators across the world when those who have worked or studied here move on.

The future strength of the UK's medical research base depends on maintaining access to talented individuals, wherever they are from. As the UK relationship with the EU changes, it is vital that an efficient, fair and transparent immigration system is in place to allow this dynamic exchange to continue. Our research community is national asset, and the Government must broadcast a strong and welcoming message that research is a valued part of the UK's future. Our competitor nations recognise this and are building immigration systems which attract and retain talented individuals - the US allows those training in STEM fields to extend their visas for an additional 2.5 years to work. If the UK is facing a future without free movement from across the EU, we must minimise barriers and ensure that the UK remains a preferred destination for researchers.

Financial support

EU research funding currently plays a significant role in supporting the UK research base, and within health research the UK attracts greater funding than any other Member State.⁵ The UK currently ranks bottom of OECD countries in investment per capita in research, and EU funds have played an important in sustaining the sector through several years of 'flat cash' settlements in the UK. In addition to research grants, the EU

¹ www.acmedsci.ac.uk/policy/policy-projects/submission-to-the-parliamentary-inquiry-on-leaving-the-eu/

² europa.eu/rapid/press-release_SPEECH-07-257_en.pdf

³ www.hesa.ac.uk/index.php?option=com_content&view=article&id=1898&Itemid=634

⁴ https://erc.europa.eu/sites/default/files/document/file/erc_2014_cog_statistics.pdf

⁵ European Commission (2015). *Horizon 2020 first results*.

https://ec.europa.eu/programmes/horizon2020/sites/horizon2020/files/horizon_2020_first_results.pdf

Investment Bank provides grants and loans for research-related capital projects, such as providing £60m to Swansea University to expand science facilities.⁶

Future access to such funds should be clarified as soon as possible, and Academies from across the UK have jointly called for the 'closest possible association' with EU research programmes post-Brexit.⁷ Several options for affiliation are demonstrated across non-EU states such as Norway and Switzerland, and the merits and risks of each should be considered. Greater surety will not only benefit the academic community, but also provide a more stable landscape for private investment in medical research. With negotiations expected to take several years, the Government should consider how it can best set national investment levels over the coming years to provide greatest possible assurances to the research community.

Governance and infrastructure

Increasingly, global health challenges require resources or expertise that is beyond the scope of single nations. The EU represents one of the largest funders of international networks globally, and has simplified the process of establishing large-scale, complex transnational and interdisciplinary networks of researchers and facilities. These include a focus on capacity building, as demonstrated by the NABATIVI (Novel Approaches to Bacterial Target Identification Validation and Inhibition) initiative to discover new antibiotics, which has supported regional pools of talent in the UK such as in Nottingham. The EU Innovative Medicines Initiative has also invested heavily in UK research to accelerate development of medicines, including the ABIRISK project with GlaxoSmithKline, and K4DD consortium with Heptares therapeutics.^{8,9}

The European Research Area (ERA) seeks to promote the sharing of scientific information to reduce unnecessary duplication of research and make infrastructure investment more strategic. The ERA has pioneered work to catalogue pan-European research infrastructure centres, to support and utilise unique research services across member states. The UK has been a leading voice in the establishment of the ERA, and negotiations around Brexit should fully explore the options for the UK to continue to show leadership in transnational research governance systems which deliver greater efficiency and connectivity to all members.

Regulatory harmonisation

The introduction of EU legislation and regulation across the 28 Member States has harmonised the procedures under which medical research is conducted. This is the case for both academic and industry-based research activities, and has delivered greater continuity across data sharing, clinical trials, the use of animals in research, and the approval of new medicines. In cases such as research into rare diseases, this harmonised platform has allowed the coordination of the critical mass of research participants needed to study rare conditions, which would be impossible in the UK alone.

The legislative process which has delivered this harmonisation has received considerable attention from UK stakeholders, particularly in areas where improvements were felt to be

⁶ www.swansea.ac.uk/media-centre/latest-news/swanseassingletonparkcampustobettransformedwith60millionneweuropeaninvestmentbankbacking.php

⁷ www.acmedsci.ac.uk/more/news/joint-academies-publish-statement-on-research-innovation-after-the-eu-referendum/

⁸ www.abirisk.eu/index.html

⁹ www.heptares.com/news/76/74/Heptares-Provides-GPCR-Expertise-To-New-European-Drug-Discovery-Consortium.html

required. An example is the EU Regulation on Clinical Trials on Medicinal Products for Human Use, which seeks to further harmonise the approval and monitoring of clinical trials. This provided an opportunity to improve on the preceding clinical trials Directive, which had several weaknesses and complexities that had concerned the medical research community. The Academy worked alongside UK and EU partners to inform the new Regulation and address key issues such as streamlining approval for multi-centre trials and administrative burden which was believed to be causing a decrease in trial initiation.¹⁰

In a future outside the EU, the UK will need to carefully balance the value of remaining harmonised with EU legislation, versus opportunities to develop tailored regulation according to the UK's circumstances. The UK was frequently a leading voice in the development of research-relevant legislation, and outside the EU the opportunities for such influence will be greatly diminished. Understanding potential benefits and risks of over harmonisation will require input from all research sectors, and the Government should consider how the UK would be best served in the long term so that appropriate steps can be taken in the coming negotiations.

Global influence

The EU has provided additional weight to the voice of the UK in steering global trends in medical research, both through membership of international organisations and through major global institutions such as the European Medicines Agency, based in London. As the UK looks to reappraise its place on the international stage, consideration should be given to how best to retain the global influence that UK medical research exerts, and how to work with counterparts across the EU to retain the cooperative networks which have lent disproportionate weight to UK ideas and leadership in the past.

Concluding remarks

A changing relationship with the EU has the potential to create significant challenges for the UK medical research sector. Medical research delivers the innovative medicines and treatments which underpin high-quality health care, national and global health is best served when the UK research sector is able to operate in a stable and supportive environment. Negotiations around Brexit should give consideration to the complex relationship between the UK research community, the EU, and other EU Member States. If research is not kept at the heart of the agenda for negotiations, the UK risks losing the talented researchers, funding and connections which deliver patient benefits.

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¹⁰ www.acmedsci.ac.uk/policy/policy-projects/test-clinical-trials-regulation/