

Catherine McKinnell MP
Chair of the Petitions Committee
House of Commons
London
SW1A 0AA

13 July 2021

Re: Brain tumour and childhood cancer research in the UK

Dear Ms McKinnell,

Thank you for your letter regarding brain tumour and childhood cancer research in the UK and in particular, the need for basic research funding for brain tumours to be increased.

I have answered your specific questions below.

During the session, Mike Batley suggested you plan to hold “a sandpit event that will bring together neuroscientists with oncologists”, as well as already “funding quite a few PhDs and doing a fair amount of capacity-building in this space”. Can you provide further details of the initiatives Mr Batley was referring to?

Medical Research Council (MRC) held a successful [workshop in 2018](#) to bring together neuroscientists and brain tumour researchers. The follow-on sandpit activity planned for early 2022 is more ambitious, aiming to bring together experts from relevant areas across different disciplines, for example engineering. This allows us to facilitate inter-disciplinary collaborations across the broad basic to translational research pathway.

UKRI is committed to the training and development of the next generation of research leaders by supporting the breadth of research careers, while attracting a diverse range of people into research. A limited analysis of data available on UKRI PhD studentships relevant to brain tumour research (for funding ended or due to end between 2020–2025, across the remit of MRC, Biotechnology and Biological Sciences Research Council (BBSRC) and Economic and Social Research Council (ESRC) suggests there is a diverse cohort of at least 113 PhD students supported, an investment of approximately £11m.

The MRC specifically has awarded five clinical fellowships between 2015-2020, an investment of £2.5m supporting clinical researchers at different career stages. In addition, the UKRI Future

Leaders Fellow Scheme has supported several awards covering diverse research questions in this area; including two awards to UCL on improving MRI scanning for ill children and exploring tumour cell dormancy; and a project at KCL seeking to develop imaging strategies to study tumour invasion at the molecular level¹.

Beyond these actions, what other funding or support are UKRI and the MRC providing for basic research relevant to brain tumours, or to help develop the research environment for brain tumour research?

MRC always welcomes high-quality applications related to brain tumour research, through our responsive-mode schemes. Cancer is an area of strong activity for MRC. In 2017/18 the MRC's gross research expenditure was over £814m, of which £145m supported science relevant to cancer. The MRC typically receives 800-1000 "research grant"² applications a year across the breadth of our medical research remit, of which 70-100 (approximately 10%) are relevant to cancer. Within this, applications specifically relevant to brain tumours represent a small proportion (7-17 per year between 2015-2020), with an average success rate of 18% during this time period. The 2018 brain tumour workshop aimed to stimulate demand and as a result, the number of project applications submitted peaked in 2019/2020 (17), with a success rate of 17.6%, close to the average for MRC Research Boards that year (18%). The 2022 sandpit will hopefully provide another boost in interest for MRC funding from the community, as well as expanding disciplinary relevance.

MRC has invested £9.6m between 2015-2020 on brain tumour research projects (in addition to a much larger number of projects with wider cancer relevance including on underpinning cancer biology). In 2020/2021, two examples of substantial projects in brain tumours are those awarded to Dr Rebecca Hill³ and Professor Nicola Sibson⁴. Dr Hill's project will study the biology of relapsing medulloblastomas in children, and Professor Sibson's research aims to improve drug deliverability into brain metastases.

Working with UKRI partners, MRC also leads the £38m Industrial Strategy Challenge Fund Digital Innovation Hub Programme within the Data to Early Diagnosis and Precision Medicine Challenge, delivered in partnership with Health Data Research UK, which is also funded by UKRI. This supports the Health Data Research Innovation Gateway, a national portal to enable discovery and access to more than 650 health-related datasets and resources, including over 70 relevant to brain cancer research. The programme also enabled the establishment of the Health Data Research Alliance, a growing membership of key UK data controllers and including The Brain Tumour Charity. Alliance members are committed to making working with UK health-related data

¹ <https://gtr.ukri.org/projects?ref=MR%2FT04067X%2F1>

² This does not include Fellowship applications.

³ <https://gtr.ukri.org/projects?ref=MR%2FV001647%2F1>

⁴ <https://gtr.ukri.org/projects?ref=MR%2FV005995%2F1>

within secure and trusted governance and research environments easier. The associated Health Data Research Hubs include DATA-CAN – the Health Data Research Hub for Cancer - where researchers and innovators across industry, academia, the NHS and third sector can source expert cancer data services and expertise. The Hub brings together a unique partnership of NHS organisations, patients, charities, academia and industry working across all four nations of the United Kingdom.

MRC also has several long-term, strategic investments that undertake research relevant to brain tumours and relevant underpinning cancer biology research, including:

- **MRC Oxford Institute for Radiation Oncology (OIRO)**⁵: The OIRO explores aspects of radiation biology that could yield new advances in the treatment of cancer, through understanding how cells respond to and repair radiation-induced DNA damage, defining the micro-environmental factors that affect these responses and identifying targets to alter tumour or normal tissue responses to radiation.
- **MRC Clinical Trial Unit (CTU), UCL**⁶: The CTU carries out challenging and innovative clinical trials. It develops and implements methodological advances in study design, conduct and analysis to resolve internationally important questions in infectious diseases and cancer.
- **Francis Crick Institute**⁷ (£42m p.a.; with co-investment from CRUK and Wellcome, and in partnership with KCL, UCL and Imperial College). The Crick was established to understand the fundamental biology underlying health and disease. Work at the Crick aims to improve the understanding of disease progression and to develop novel approaches for the diagnosis, treatment and prevention of major illnesses including cancer. There are 24 groups researching different aspects of cancer at the Crick.
- In addition, MRC supports collections of brain tumour tissue through BRAIN UK⁸, which is a partner in the Brain Banks Network and receives funding from Brain Tumour Research. BRAIN UK facilitates access to brain tumour samples for researchers from the archives of 26 of the NHS regional clinical neuroscience centres in the UK, effectively covering about 90% of the UK population.

Alongside basic research funding, Innovate UK have invested over £8.2m in 18+ projects that are focussed on brain tumours. These investments have been made through a range of competitions, including the Biomedical Catalyst Programme, which is accelerating the development of therapeutics, diagnostics and treatment platforms for brain tumours.

⁵ <https://www.oncology.ox.ac.uk/mrc-oiro>

⁶ <https://www.ctu.mrc.ac.uk/>

⁷ <https://www.crick.ac.uk/>

⁸ <https://www.southampton.ac.uk/brainuk/index.page>



NIHR previously issued a highlight notice to encourage applications for brain tumour research via its funding programmes, and to raise awareness within the research community that NIHR was actively seeking to fund research applications in this area. Have you discussed with Government the possibility of issuing a similar targeted call on brain tumour research for UKRI funding programmes, or would you consider issuing such a notice?

As described above, the planned UKRI Brain Tumour sandpit/workshop is anticipated, in a similar way to an NIHR highlight notice, to stimulate interest both within the existing brain tumour research community for both adult and paediatric cancer, as well as to facilitate innovative dialogue with potential new players across research disciplines and communities and along the research pathway from fundamental biology to translation.

Written evidence provided to us by NIHR notes that officials from NIHR have “recently begun engaging with UKRI colleagues”, and have had “some positive discussions” – can you provide more details of these conversations and how they may impact your future work to support brain tumour research in the UK?

The tangible outcome of the discussions between NIHR and MRC/UKRI so far has been the agreement to organise the 2022 sandpit/workshop. We look forward to working with NIHR on the sandpit, engaging with other relevant stakeholders to ensure the pipeline of strong research moves towards patient benefit.

Thank you again for contacting me and please don't hesitate to get in touch if I can help further.

Best Wishes,

A handwritten signature in black ink, appearing to read 'Ottoline Leyser', enclosed within a thin black rectangular border.

Professor Dame Ottoline Leyser

Chief Executive, UK Research and Innovation