Brain Injury
MedTech Co-operative

National Institute for Health Research

Neuro-oncology

MIC Theme 6

Mr. Stephen Price

The NIHR Brain Injury MedTech Co-operative is a partnership between the Cambridge University Hospitals NHS Foundation Trust and the University of Cambridge

Background

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- Glioblastomas (GBM) = commonest malignant brain tumour
  - Appalling prognosis
  - Little improvement in outcome over a decade
  - Failure of trials
  - “Lack of investment by successive Governments”

House of Commons Petition Committee, 2016

- ‘*Aggregation of minimal gains*’

Sir David Brailsford, British Cycling

I feel like I've lost 'me'

A fundamental difference between a brain tumour and a tumour in other parts of the body is the effect it can have on the mind and interaction with other people. Brain tumours frequently lead to the loss of the characteristics and faculties that make us who we are as individuals: personality, memories, cognition and the ability to communicate with others.

1 in 3 experience personality changes

1 in 2 experience memory loss

1 in 4 experience cognitive problems

Did you know?

A number of factors can cause changes in brain functioning, such as the location, size and grade of the tumour. Interventions intended to treat the tumour, such as radiotherapy and surgery, can also produce cognitive and behavioural symptoms as severe as those caused by the tumour itself.

Finding the Tumour Margin

Balance between leaving tumour and causing deficits

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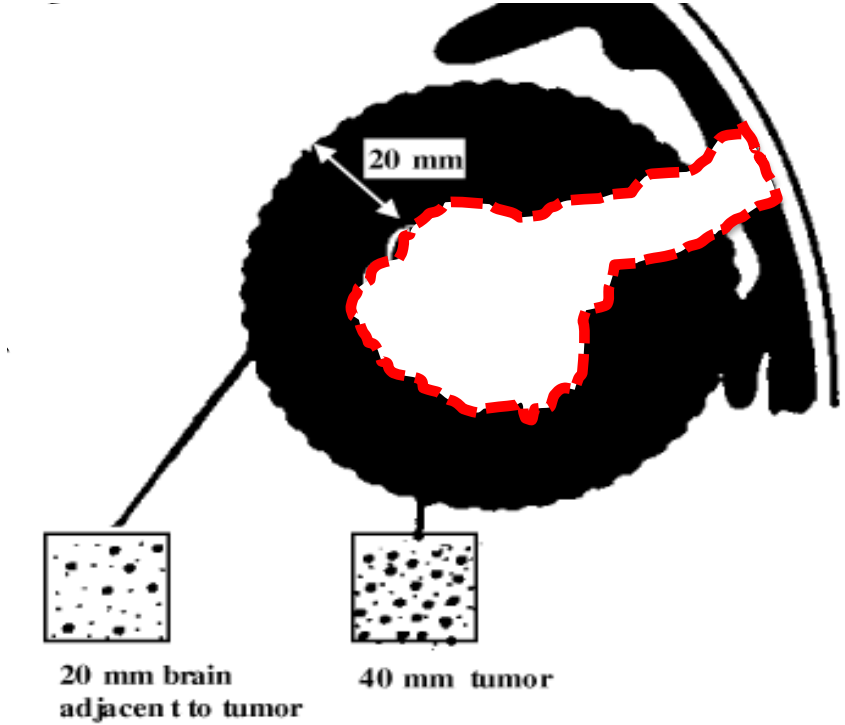

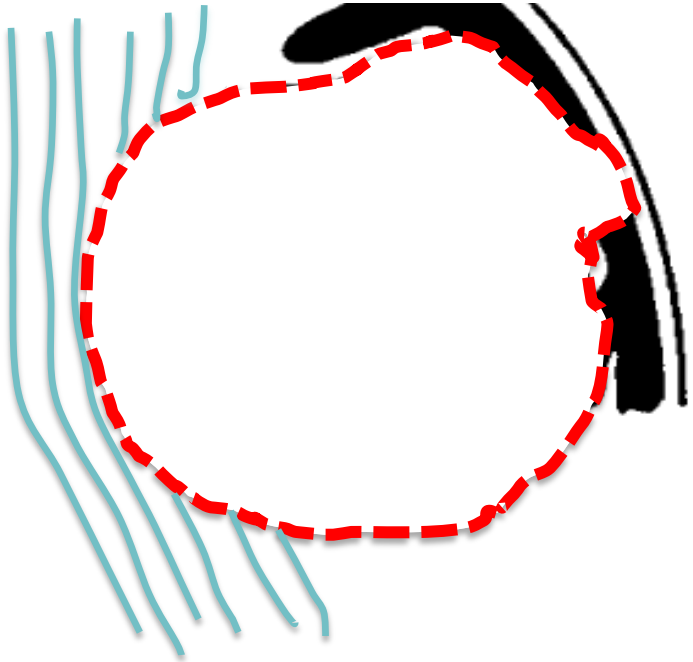

Surgical Induced Brain Injury

Impact on Survival

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	Median Survival (months)	2-year Survival (%)	
No neurological deficit	12.8	23%	
New motor deficit	9.0	8%	P<0.05
New language deficit	9.6	0%	P<0.05

N = 306

McGirt et al (2009) *Neurosurgery*

Functional Deficits

Hierarchy of outcomes

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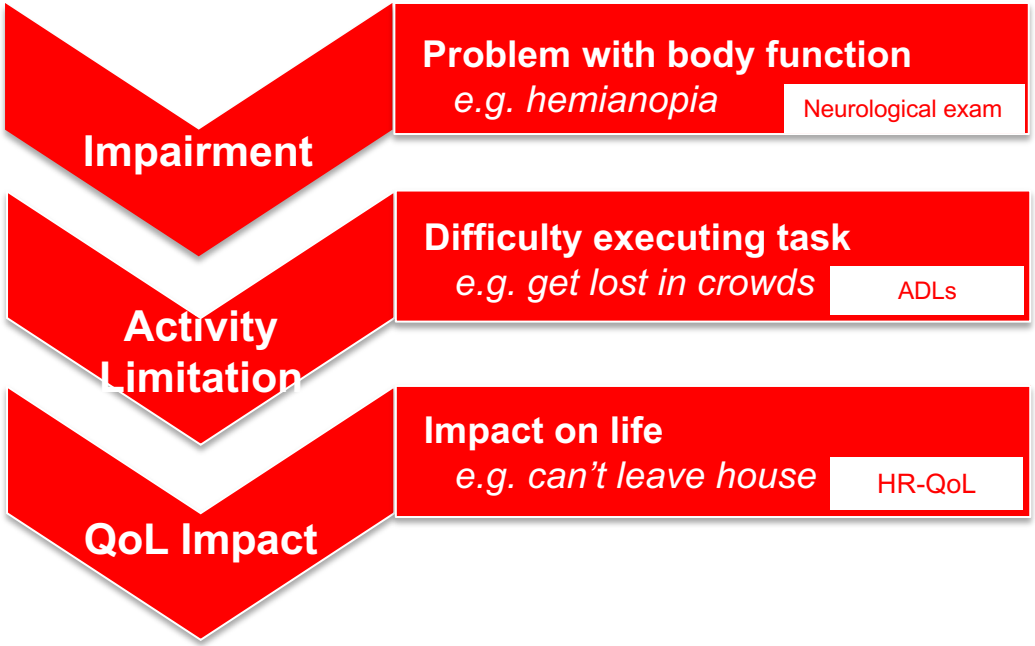

Sub-themes

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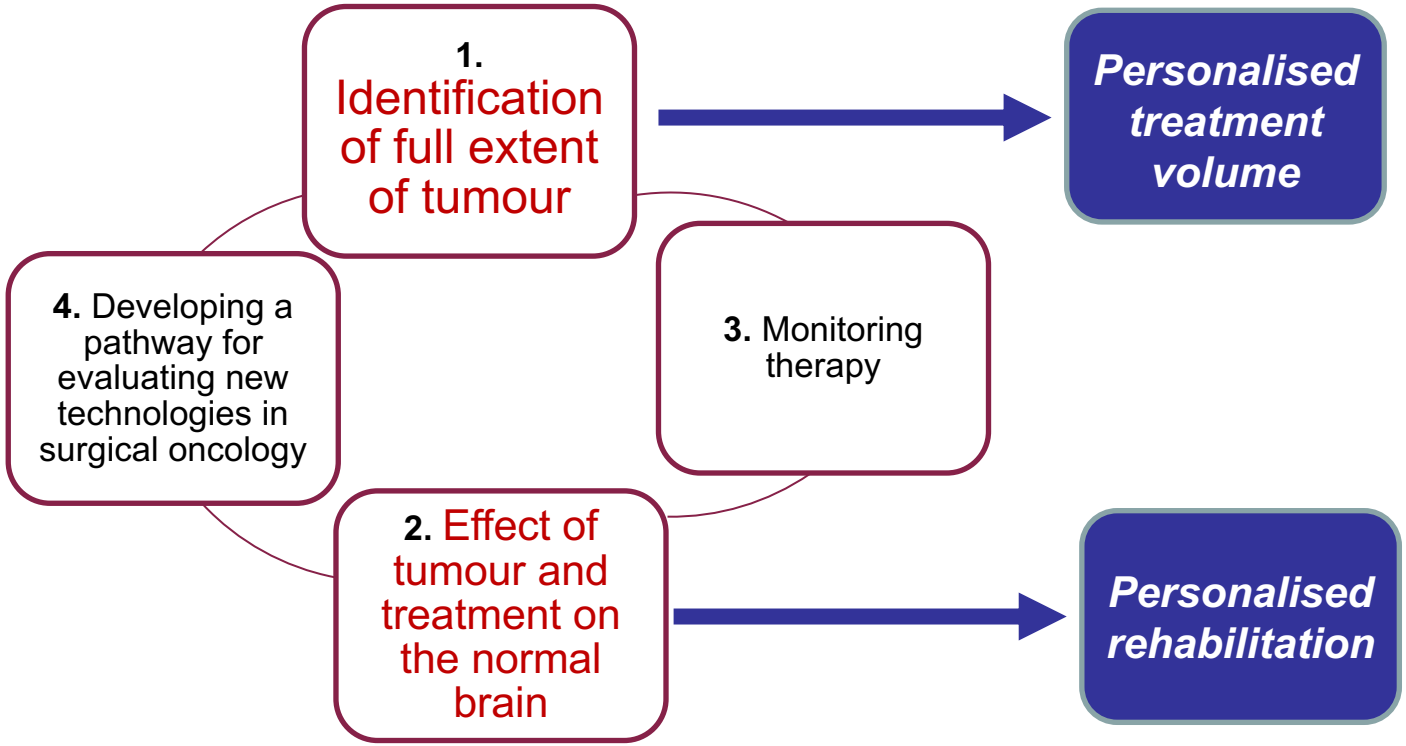

Team

Neuro-oncology

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NCRI Future of Surgery Initiative

Evaluating New Technologies
Prof Jane Blazeby and Bristol BRC

Identifying Tumour Extent
Cambridge Brain Tumour Imaging Laboratory
Dr Raj Jena (Oncology)
Dr Tanya Hutter (Chemistry)

Neuro-oncology Theme

Effect on Normal Brain
Alexis Joannides (QoL)
ORION
DAMSEL Group
Dr Tom Manley (CBU)
Rohit Sinha (Neurosurgery)

Response to Therapy
Dr Tomasz Matys (Radiology)
Prof Adam Waldman (Edinburgh)
Prof Kevin Brindle (CRUK CI)

NCRI Brain CSG

NCRI Brain Supportive & Palliative Care Sub-group

Strategy

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Year 1

Short-term

- Develop and validate new technology approaches to measuring quality of life and cognitive function
- Determining the true extent of tumours.

Year 2-3

Medium - term

- Effect of treatment on normal brain functioning and validate methods to assess treatment response.
- Develop methods that integrate new imaging methods into surgical and radiotherapy treatment planning.

Year 4-5

Long-term

- Translate these technologies into clinical practice to personalise surgery, radiotherapy and rehabilitation.

16th April 2018

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NIHR Highlight Notice: Specification Document

A call by NIHR for research on brain tumours.

This call supports the report of the Department of Health & Social Care Task & Finish Working Group on Brain Tumour Research. It encourages collaborative applications that demonstrate how they build on recent initiatives and investment in the area made by the NIHR, the MRC and other research funders.

Research may involve any aspect of the diagnosis, treatment, support or care of patients with brain tumours, including access to or the delivery of services. Applications must be in the remit of one or more of the participating NIHR programmes. Research methods may involve primary research or evidence synthesis, including systematic reviews, modelling studies or the analysis of existing datasets.

Proposals should clearly identify the research context of their proposal in terms of recent and currently funded UK and international research in the area and the potential impact of their proposed research for patients, carers and the NHS.