

Putting NICE guidance into practice

Resource impact report: Brain tumours (primary) and brain metastases in adults (NG99)

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Summary

This report focuses on the recommendation from NICE's guideline on [brain tumours \(primary\) and brain metastases in adults](#) that we think will have the greatest resource impact nationally (for England), and will need the most additional resources to implement or potentially generate the biggest saving. It is:

- Offer 5-amino-levulinic acid (5-ALA) as an adjunct to maximise resection of high-grade glioma.

The estimated annual cost to commissioners of implementing this guideline for the population of England based on the resource impact assumptions is shown in table 1.

Table 1 Estimated annual cost of implementing the guideline

	2018/19 (£'000)	2019/20 (£'000)	2020/21 (£'000)	2021/22 (£'000)	2022/23 (£'000)
Resource impact each year for offering 5-ALA-guided resection as an adjunct at initial surgery	1,264	2,528	2,528	2,528	2,528

The resource impact for 2018/19 contains a part year effect for 6 months activity.

Implementing the guideline may result in the following additional costs:

- increased use of 5-ALA to help guide resection of glioma.

Implementing NICE's guideline may result in the following benefits and savings:

- an increase in the number of fully resected tumours
- a reduction in follow-up surgeries for additional resection.

This report is supported by a resource impact template which may be used to calculate the resource impact of implementing the guideline by amending the variables.

Neuro-oncology services are commissioned by NHS England. Providers are NHS hospital trusts.

1 Introduction

- 1.1 The guideline offers best practice advice on primary brain tumours and brain metastases in adults.
- 1.2 This report discusses the resource impact of implementing our guideline on primary brain tumours in England. It aims to help organisations plan for the financial implications of implementing this NICE guideline.
- 1.3 A resource impact template accompanies this report to help with assessing the resource impact at a local level in England, Wales or Northern Ireland.
- 1.4 We have considered direct costs and savings to the NHS (and local authorities if applicable) and not those for the individual, the private sector or the not-for-profit sector. Any cost savings arising from a change in practice have been offset against the cost of implementing the change.
- 1.5 Neuro-oncology services are commissioned by NHS England. Providers are NHS hospital trusts.

2 Background

- 2.1 There are around 5,000 adults in England diagnosed with brain tumours per year according to the [Office for National Statistics](#).

3 Significant resource impact recommendations

- 3.1 If a person has a radiologically-suspected enhancing high-grade glioma, and the multidisciplinary team believes maximal surgical resection is possible, offer 5-amino-levulinic acid (5-ALA)-guided resection as an adjunct to maximise resection at initial surgery (**Recommendation 1.2.36**).

Background

- 3.1.1 5-ALA is a non-protein amino acid, which can be used to help visualise tumours for fluoroscopy guided resection.

Assumptions made

- 3.1.2 Clinical expert opinion is that there are currently around 200 resections a month in England that are suitable for 5-ALA guided fluoroscopy for radiologically-suspected enhancing high-grade glioma. This is equivalent to around 2,400 a year.
- 3.1.3 Clinical expert opinion is that around half (1,200) of these resections currently use 5-amino-levulinic acid (5-ALA) guided fluoroscopy.
- 3.1.4 It is assumed that following implementation of the guideline, all 2,400 resections for radiologically-suspected enhancing high-grade glioma where maximal resection is believed to be possible will use 5-ALA guided fluoroscopy.
- 3.1.5 It is assumed that 30% of 5-ALA guided fluoroscopy patients and 37% of resection alone patients receive repeat surgery (Stummer et al, 2006).

Costs

- 3.1.6 The average tariff price for a resection without 5-ALA is £6,105; this average increases with complexity when 5-ALA is used to £9,112 ([national tariff 2018/19](#)).
- 3.1.7 The net cost of using 5-ALA to guide resection is summarised in table 2.

Table 2 Estimated annual cost of offering 5-amino-levulinic acid (5-ALA) as an adjunct in surgeries and the number of people affected

	Current practice	2018/19	2019/20	2020/21	2021/22	2022/23
Estimated number of people who will be offered 5-ALA guided resection in surgeries	1,200	1,800	2,400	2,400	2,400	2,400
Resource impact as a result of offering 5-ALA guided resection as an adjunct at initial surgery (£'000)		1,804	3,608	3,608	3,608	3,608
Resource impact due to reduced number of people requiring secondary resection (£'000)		-540	-1,080	-1,080	-1,080	-1,080
Total resource impact each year for offering 5-ALA guided resection (£'000)		1,264	2,528	2,528	2,528	2,528

Benefits and savings

3.1.8 Using 5-ALA guided resection will increase the number of complete resections for glioma and improve outcomes for people having a resection.

3.1.9 Improving the number of complete resections will reduce the potential for follow-up surgeries to be performed for additional resection.

Other considerations

3.1.10 5-ALA guided resection also requires fluoroscope microscopes. Associated costs have not been included in this analysis since expert opinion is that all 26 specialised centres in England already

have this equipment as they are used for a variety of other interventions.

4 Resource impact over time

4.1 The estimated annual cost of implementing this guideline for the population of England based on the uptake in the resource impact assumptions is shown in table 3. The cost from year 2 is equivalent to £4,600 per 100,000 population.

Table 3 Resource impact of implementing the guideline using NICE assumptions

	Current practice	2018/19	2019/20	2020/21	2021/22	2022/23
Estimated number of people who will be offered 5-ALA guided resection in surgeries	1,200	1,800	2,400	2,400	2,400	2,400
Resource impact as a result of offering 5-ALA guided resection as an adjunct at initial surgery		1,804	3,608	3,608	3,608	3,608
Resource impact due to reduced number of people requiring secondary resection		-540	-1,080	-1,080	-1,080	-1,080
Resource impact each year for offering 5-ALA guided resection (£'000)		1,264	2,528	2,528	2,528	2,528

5 Implications for commissioners

5.1 Brain tumours falls under programme budgeting category 02A 'Cancer, Head and Neck'.

6 Assumptions made

- 6.1 The resource impact template makes the following assumptions:
- The resection is costed using an average tariff cost of resections with and without 5-ALA to illustrate the potential resource impact from an increased use of 5-ALA.
 - Follow-up surgeries have been priced at a higher tariff than the initial surgery both with and without 5-ALA using the national tariff for HRG AA50C, £12,857.
 - It is assumed that from year 2, 100% of surgery for radiologically-suspected enhancing high-grade glioma where maximal resection is believed to be possible will use 5-ALA guided fluoroscopy.
 - The total number of primary resections performed per year is not expected to change as a result of this guidance.
- 6.2 If a [national tariff](#) price or indicative price exists for an activity, this has been used as the unit cost. The resource impact template can be used to amend unit costs to account for any local market forces factor.
- 6.3 Using these prices ensures that the costs in the report are the cost to NHS England of commissioning predicted changes in activity at the tariff price, but may not represent the actual cost to individual trusts of delivering the activity.

References

Stummer et al, 2006: Stummer, W., Pichlmeier, U., Meinel, T., Wiestler, O. D., Zanella, F., Reulen, H. J., 12 Fluorescence-guided surgery with 5-aminolevulinic acid for resection of malignant glioma: a 13 randomised controlled multicentre phase III trial, *Lancet Oncology*, 7, 392-401, 2006).

About this resource impact report

This resource impact report accompanies the NICE guideline on [Brain tumours \(primary\) and brain metastases in adults](#) and should be read in conjunction with it. See [terms and conditions](#) on the NICE website.

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