1. **Aim/Purpose of this Guideline**

1.1 The aim of this document is to inform clinicians on the pathway for patients with signs of malignant MCA syndrome (increased intracranial pressure due to large stroke) to consider referral to Derriford Hospital for early decompressive surgery to improve survival and reduce severe disability in patients with acute middle cerebral artery infarction and a decreased conscious level within 24 hours of onset.

1.2 The guidance enables clinical staff to give patients with acute stroke the best chance of survival and recovery.

2. **The Guidance**

2.1 Consider referral for early decompressive surgery to improve survival and reduce severe disability in patients with middle cerebral artery infarction and a decreased conscious level. Patients should be referred to neurosurgery within 24 hours of stroke onset and treated within 48 hours of stroke onset.

2.2 Pre-morbid modified Rankin Scale score less than 2 (no significant disability, despite symptoms)
   - Able to achieve surgery within 48 hours of stroke onset
   - Clinical deficits indicating MCA territory infarction with a NIHSS score of more than 15
   - Decreased Level of consciousness score of 1 or more on item 1a of the NIHSS
   - Signs on CT of an infarct of at least 50% of the MCA territory, with or without additional infarction in the territory of the anterior or posterior cerebral artery on the same side.

2.2.1 **Consider all available information regarding the patient’s prior expressed wishes about survival with moderately severe disability**

Early decompressive surgery increases the chance of survival (NNT of 2) but a substantial proportion of those who do survive (45%) are unable to walk or attend to their own bodily needs without assistance.

2.3 **Arrange immediate CT brain scan to exclude alternative causes of deterioration in conscious level**
   - Record GCS and NIHSS score;
   - Send bloods for electrolytes, full blood count, clotting, if none available from within the last 12 hours, but do not delay referral while waiting for results
   - Treat and correct hypoxia, hypercapnia, hyperthermia (temp >37.5°C), hyperglycaemia
   - Sit patient upright at 20-30° if posture allows

2.4 **IF the attending Senior Physician considers Hemicraniectomy to be appropriate AND consideration for surgery is consistent with any prior wishes of the patient THEN refer to neurosurgical registrar on call, Derriford Hospital:**
   - They will take details of the case for discussion with on-call Consultant Neurosurgeon
   - Have patients details, GCS and clinical history available for discussion
• If agreed for transfer, discuss the indication for 20% Mannitol 0.5-1g/kg, intubation, intravenous anaesthesia and/or hyperventilation prior to transfer immediately by emergency road ambulance

3. Monitoring compliance and effectiveness

<table>
<thead>
<tr>
<th>Element to be monitored</th>
<th>Timely referral of patients for consideration of surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>Stroke Team</td>
</tr>
<tr>
<td>Tool</td>
<td>SENTINEL STROKE NATIONAL AUDIT PROGRAMME</td>
</tr>
<tr>
<td>Frequency</td>
<td>Yearly</td>
</tr>
<tr>
<td>Reporting arrangements</td>
<td>Stroke Operational Group Meeting</td>
</tr>
<tr>
<td>Acting on recommendations and Lead(s)</td>
<td>Stroke Operational Group Meeting held weekly, led by manager Naomi Wakeley</td>
</tr>
<tr>
<td>Change in practice and lessons to be shared</td>
<td>At Stroke Operational Group Meetings, led by manager Naomi Wakeley</td>
</tr>
</tbody>
</table>

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the 'Equality, Diversity & Human Rights Policy' or the Equality and Diversity website.

4.2. Equality Impact Assessment
The Initial Equality Impact Assessment Screening Form is at Appendix 2.
## Appendix 1. Governance Information

<table>
<thead>
<tr>
<th>Document Title</th>
<th>Early Decompressive Surgery in Acute Ischaemic Stroke Peninsula Referral Guideline V2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Issued/Approved:</td>
<td>17/01/2018</td>
</tr>
<tr>
<td>Date Valid From:</td>
<td>December 2018</td>
</tr>
<tr>
<td>Date Valid To:</td>
<td>December 2021</td>
</tr>
<tr>
<td>Directorate / Department responsible (author/owner):</td>
<td>Dr Katja Adie</td>
</tr>
<tr>
<td>Contact details:</td>
<td>01872 253458</td>
</tr>
</tbody>
</table>

### Brief summary of contents

Patients with signs of malignant MCA syndrome (increased intracranial pressure due to large stroke) may require referral to Derriford Hospital for early decompressive surgery to improve survival and reduce severe disability in patients with acute ischaemic stroke and a decreased conscious level within 24 hours of onset. The guideline sets out rational and pathway.

### Suggested Keywords:

Stroke, Malignant MCA syndrome, Hemicraniectomy, Decompressive surgery

### Target Audience

<table>
<thead>
<tr>
<th>RCHT</th>
<th>PCT</th>
<th>CFT</th>
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</thead>
<tbody>
<tr>
<td>✔</td>
<td></td>
<td></td>
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</table>

### Executive Director responsible for Policy:

Medical Director

### Date revised:

January 2018

### This document replaces (exact title of previous version):

Peninsula Referral Guidelines for Early Decompressive Surgery in Acute Ischaemic Stroke V1.0

### Approval route (names of committees)/consultation:

Stroke Operational Group

### Divisional Manager confirming approval processes

Debra Shields

### Name and Post Title of additional signatories

Not Required

### Name and Signature of Divisional/Directorate Governance

Not Required
Lead confirming approval by specialty and divisional management meetings | Name: Dr Steven Creely
---|---
Publication Location (refer to Policy on Policies – Approvals and Ratification): | Internet & Intranet ✓ Intranet Only
Document Library Folder/Sub Folder | Clinical/Elder Care
Links to key external standards
Related Documents: | Advanced Stroke Management Pathway, Stroke Thrombolysis, Secondary Prevention Guidelines Stroke and TIA, Stroke and TIA Care pathway
Training Need Identified? | No

Version Control Table

<table>
<thead>
<tr>
<th>Date</th>
<th>Version No</th>
<th>Summary of Changes</th>
<th>Changes Made by (Name and Job Title)</th>
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</thead>
<tbody>
<tr>
<td>2014</td>
<td>V1.0</td>
<td>Initial Issue, reviewed 22/10/2015</td>
<td>K Adie, consultant D Nash, medical student</td>
</tr>
<tr>
<td>2018</td>
<td>V2.0</td>
<td>Reviewed and updated 03/01/2018</td>
<td>K Adie</td>
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This document is to be retained for 10 years from the date of expiry.

This document is only valid on the day of printing

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Appendix 2. Initial Equality Impact Assessment Form

<table>
<thead>
<tr>
<th>Directorate and service area:</th>
<th>Is this a new or existing Policy?</th>
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<tbody>
<tr>
<td>Elder Care/stroke</td>
<td>Existing</td>
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<table>
<thead>
<tr>
<th>Name of individual completing assessment:</th>
<th>Telephone:</th>
</tr>
</thead>
<tbody>
<tr>
<td>K Adie</td>
<td>07717714009</td>
</tr>
</tbody>
</table>

1. **Policy Aim***

   *Who is the strategy / policy / proposal / service function aimed at?*
   
   The aim of this document to guide clinicians at RCHT on management of patients with severe ischaemic stroke requiring consideration of decompressive surgery.

2. **Policy Objectives***

   Improve outcome for patients with severe ischaemic stroke who may benefit from decompression surgery.

3. **Policy – intended Outcomes***

   Gold standard stroke care

4. **How will you measure the outcome?***

   Sentinel Stroke National Audit Programme

5. **Who is intended to benefit from the policy?***

   Patients with severe ischaemic stroke requiring consideration of decompression surgery.

6a **Who did you consult with**

   Workforce Patients Local groups External organisations Other

   X

   Eldercare and Stroke, ED and Critical Care Unit Clinicians at RCHT, neurosurgical team Derriford hospital.

6b **Please identify the groups who have been consulted about this procedure.**

   It has been signed off by the eldercare governance group 05/01/2018 and stroke operational group (see notes of meeting 17/01/2018).

7. **The Impact**

   Please complete the following table. **If you are unsure/don’t know if there is a negative impact you need to repeat the consultation step.**

   Are there concerns that the policy **could** have differential impact on:
<table>
<thead>
<tr>
<th>Equality Strands:</th>
<th>Yes</th>
<th>No</th>
<th>Unsure</th>
<th>Rationale for Assessment / Existing Evidence</th>
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<tbody>
<tr>
<td>Age</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex (male, female, trans-gender / gender reassignment)</td>
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<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Race / Ethnic communities /groups</td>
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<td></td>
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<tr>
<td>Disability - Learning disability, physical impairment, sensory impairment, mental health conditions and some long term health conditions.</td>
<td></td>
<td>X</td>
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<td>Religion / other beliefs</td>
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<td>X</td>
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<td>Marriage and Civil partnership</td>
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<td>Pregnancy and maternity</td>
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<td>Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian</td>
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</tr>
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</table>

You will need to continue to a full Equality Impact Assessment if the following have been highlighted:

- You have ticked “Yes” in any column above and
- No consultation or evidence of there being consultation - this excludes any policies which have been identified as not requiring consultation. or
- Major this relates to service redesign or development

8. Please indicate if a full equality analysis is recommended. | Yes | No | X |
9. If you are not recommending a Full Impact assessment please explain why.

N/A

Signature of policy developer / lead manager / director | Date of completion and submission
Katja Adie | 07/12/2018

Names and signatures of members carrying out the Screening Assessment
1. Katja Adie
2. Human Rights, Equality & Inclusion Lead

Keep one copy and send a copy to the Human Rights, Equality and Inclusion Lead
c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Knowledge Spa, Truro, Cornwall, TR1 3HD

This EIA will not be uploaded to the Trust website without the signature of the Human Rights, Equality & Inclusion Lead.

A summary of the results will be published on the Trust’s web site.

Signed: Katja Adie

Date: 07/12/2018