**Public Health Impact of Hemorrhagic Stroke**

- 15% of Strokes are Hemorrhagic
- Higher predilection in racial & ethnic minorities
- Currently, Standard of Care is Medical Management of Symptoms
  - **High Rate of Mortality** - 32-50% Mortality at 30 days
  - **High Rate of Disability** - Only 20% of Survivors are Functionally Independent

**In Hemorrhagic Stroke... Time is Brain**

**STEP 1**
**Artery Rupturing**
Bleeding occurs inside or around brain tissue

**STEP 2**
**Blood Accumulating/Clotting**
Formation of blood clot

**STEP 3**
**Brain Tissue Necrosis**
Region of decreased blood flow resulting in the development of dead brain tissue

**General Clinical Considerations**

<table>
<thead>
<tr>
<th>Age</th>
<th>Hematoma: Location Volume</th>
<th>Symptom Onset</th>
<th>Pre-ICH Disability</th>
<th>Glasgow Coma Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye Opening</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spontaneous</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>To sound</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>To pressure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Verbal Response</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Oriented</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Confused</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Words Sounds</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Motor Response</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Obey commands</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Localising</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Normal flexion</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Abnormal flexion</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Extension</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>None</td>
</tr>
</tbody>
</table>

**GLASGOW COMA SCALE SCORE**

- **Mild**: 13-15
- **Moderate**: 9-12
- **Severe**: 3-8

**Non-Candidates**

- Anticoagulants that cannot be rapidly reversed
- End stage renal disease or liver failure
- Bilateral fixed and dilated pupils
- Active systemic bleeding (gastrointestinal, etc)
- Substantial drug or alcohol dependence
- Comfort care or DNR

---

¹National Stroke Association: http://www.stroke.org/understand-stroke/what-stroke/hemorrhagic-stroke
²Mayo Clinic: http://www.mayoclinic.org/diseases-conditions/stroke/symptoms-causes/dxc-20117265
⁴American Heart Association: let’s talk about Hemorrhagic Stroke fact sheet, 2012
⁵Mayfield Brain & Spine: Intracerebral Hemorrhage (ICH): http://www.mayfieldclinic.com/PE-ICH.HTM#.Vdcj2H3qW3N
What is the BrainPath Approach?

The NICO BrainPath changes how surgeons can move through the natural folds and delicate fibers of the brain.

The tip of the BrainPath’s obturator is designed to minimize injury to healthy tissue. It moves between the brain fibers to the targeted area rather than through them.

The sheath remains in the brain after the obturator is removed. It serves as a protective opening to maintain access to the surgical site and allow the surgeon enough space to remove the clot.

Clinical Data suggests benefit compared to matched medical controls with respect to:

- Improvement in Post-Operative GCS
- Hemorrhage Volume Reduction
- 30 day Mortality

Example of ICH pre- and post-op images using The BrainPath Approach

NICO BrainPath is a “tool” and not a “treatment”. The device enablesatraumatic access and visualization to primary and secondary brain tumors, intracerebral hemorrhages that include primary and secondary bleeds, and intraventricular tumors and cysts. BrainPath is not intended to treat, cure, prevent, mitigate or diagnose any specific cranial, ENT, spinal or otolaryngologic disease, including cancer or stroke.

Physicians should use their best judgment and clinical experience when deciding where to use BrainPath. Consult product labeling through your local representative for intended use, contraindications, warnings, precautions, etc. for NICO products.