Supporting Excellence in Stroke Care

SPEECH AND LANGUAGE THERAPY STROKE EDUCATION WORKBOOK

Name:
This workbook was originally designed by a team of St George’s Hospital physiotherapists and students to aid both students and rotational staff in meeting the minimum competencies for the management of stroke patients. This has been adapted to be suitable for use with Speech and Language Therapists.

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As you work through the book, there will be different activities to complete relating to different aspects of stroke care.

The book is designed to allow you to work at your own pace but you may set some targets for completion with your clinical educator or senior.
GUIDANCE FOR COMPLETION

Students:
In your initial objective setting session with your clinical educator, it may be useful to plan which sections of the workbook you want to look at different stages of your placement. This will differ according to the length of your placement and your previous experience or knowledge.

Week 1:

Week 2:

Week 3:

Week 4:

Week 5:

Qualified staff:
You may want to work through at your own pace or set yourself targets.

Month 1:

Month 2:

Month 3:

Month 4:
What does this diagram show?

Can you label it?
What are the basic functions of each part of the brain?

Frontal lobe:

Parietal lobe:

Temporal lobe:

Occipital lobe:

Brainstem:

Cerebellum:
Can you identify the Cranial nerves?

- **Sensory fibres**
- **Motor fibres**

**Optic (II)**
- Sensory: eye

**Trochlear (IV)**
- Motor: superior oblique muscle

**Abducent (VI)**
- Motor: external rectus muscle

**Oculomotor (III)**
- Motor: all eye muscles except those supplied by IV and VI

**Trigeminal (V)**
- Sensory: face, sinuses, teeth, etc.
- Motor: muscles of mastication

**Facial (VII)**
- Motor: muscles of the face

**Vestibulocochlear (VIII)**
- Sensory: inner ear
- Vestibular: cochlear

**Intermediate nerve**
- Motor: submaxillary and sublingual gland
- Sensory: anterior part of tongue and soft palate

**Vagus (X)**
- Motor: heart, lungs, bronchi, gastrointestinal tract
- Sensory: heart, lungs, bronchi, trachea, larynx, pharynx, gastrointestinal tract, external ear

**Glossopharyngeal (IX)**
- Motor: pharyngeal musculature
- Sensory: posterior part of tongue, tonsil, pharynx

**Hypoglossal (XII)**
- Motor: muscles of the tongue

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Can you identify the muscles of the face?
What are the definitions of the terms below?

1. Stroke:

2. TIA (Transient Ischaemic Attack):

3. Cerebral infarct:

4. Cerebral haemorrhage:

What percentage of strokes are ischaemic?

What proportion of all strokes are fatal?

What proportion of TIA's will go on to have a stroke within five years?

Does a cerebral embolus or a cerebral thrombus have a better outcome and why?

What type of stroke is more fatal, ischaemic or haemorrhagic?
What are the main risk factors for the causes of stroke and why are they a risk factor?

Example 1:
- Left sided weakness affecting the leg and the arm
- Inappropriate social behaviour
- Cognitive Communication disorder
- Urinary and faecally incontinent

Example 2:
- A 65 year old right handed gentleman
- Right sided weakness and paraesthesia affecting the arm more than the leg
- Hemianopia
- Aphasia

Example 3
- Altered vision
- Reduced balance / Vertigo
- Dysphonia
- Dysphagia
A selection of medications are commonly used in early post stroke management including the following:
- Antiplatelet therapy
- Anticoagulants
- Antihypertensives
- Statins

What is the main purpose in the use of these medications post stroke?

What do antiplatelets do?

Can you name 3 commonly used antiplatelet medications?

How do anticoagulants work?

Can you name 3 commonly used anticoagulants?

What is the difference between anticoagulants and thrombolysis?

What is thrombolysis?
THROMBOLYSIS

What type of stroke is thrombolysis used in?

How does thrombolysis work?

In what time frame can thrombolysis be used?

When will thrombolysis not be used in an acute stroke?

What is the main benefit of thrombolysis?

What are the implications to the therapists following thrombolysis?
What is the FAST campaign?

Which guideline was developed for stroke care in London based on the National Stroke Strategy?

From this strategy, complete the following sentences:

- All Londoners should be no more than .............. from a specialist stroke unit
- All patients identified as potentially eligible for thrombolysis treatment to be scanned within next available CT slot. This must support a door to needle time of ........minutes

What is the National Sentinel Stroke Audit?

What are the 9- key indicators?

From the audit standards for patient care for Speech and Language Therapists, complete the following sentences:

- Screening for swallowing disorders within ...... hours of admission
- Swallowing assessed by Speech and Language Therapist within ........hours of admission
- Initial assessment of communication problems by Speech and Language Therapist within ........days of admission

NICE guidelines published in 2010 implicate quality standards for SLT-related intervention after stroke. From these guidelines, complete the following sentences:

- Patients with a stroke are offered a minimum of .... minutes of each active therapy that is required for a minimum of .... days per week at a level that enables the patient to meet their rehabilitation goals.
What is a HASU and which government guideline outlined the need for them?

How many HASUs are there in London and where are they located?

What is a clinical network?

When were the South London Cardiac and Stroke Networks formed?

Which PCTs does the network include?

Where are the other stroke units in this network?

If you want to know a patient’s local stroke unit, you can look it up on the London stroke unit lookup (www.londonsulookup.nhs.uk). Find out which stroke unit the following patients would come under:

- SW12 0PG – CR0 6SY –
- SW17 0AD – SE16 6HP –
- SM4 6RB – SE11 4TJ –
- BR5 2NJ –
**Stroke Pathway**

This is to help you understand what may happen to you after you have had a stroke. It also tells you what kind of help and support you can get, depending on your needs.

**When the stroke happens**

- Hyper-acute stroke unit: Admission to hospital
  - Assessment and management by a specialist stroke team
  - Quick access to brain scan and other tests
  - Start rehabilitation

**Local stroke unit**

- **Transfer to local stroke unit and continue rehabilitation**
  - Getting you well enough to leave hospital
  - Thinking about what you, your family, and friends can do to help
  - Finding out about stroke and living healthily

- **Planning to leave hospital.**
  - Plans for your discharge from hospital will involve you, your family, social services, and the community rehabilitation team.
  - This includes making plans for:
    - Practical help
    - Any equipment you need
    - Support for your carer and family
    - Support from other people who have had a stroke
    - Any ongoing rehabilitation
  - You will be given information about living with stroke.
  - You may be referred to other services when you leave hospital.
  - You will be given a named contact person

**Rehabilitation and long term management**

- Rehabilitation after hospital: This will help you to learn to live with long-term effects of stroke.
  - You may be seen by:
    - Therapy staff
    - Social care staff
    - Nurses

- Social care assessment or review:
  - Review of help that you and your carer need
  - Information on available services

- Other support services:
  - These may be voluntary organisations or charities. E.g. stroke clubs, carer groups etc

- Management by your GP – checking:
  - Cholesterol
  - Blood Pressure
  - Blood sugar
  - Diet
  - Medication
  - Mood

**In hospital**

Some patients may leave hospital from the hyper-acute stroke unit.

**At home**
| When a patient is due to be discharged from hospital, what is the role of the community team? | What Speech Therapy services can be made available for patients living in the Community? Use internet searches and speak to colleagues to find this information. |
How does the approach differ between an acute/inpatient rehabilitation team and a Community rehabilitation team e.g. therapy approach, goal setting, prioritisation?
Different types of scans will be used following CVA including CT and MRI which are covered in the next section of the workbook. A diffusion weighted MRI can also be used if an infarct cannot be identified on CT or MRI. A new infarct will show up like a light bulb on the scan in the early stages (see picture).

Why would an MRA/CTA (Angiography) and carotid doppler be carried out?

What is a carotid endarterectomy?

Can you name two cardiac investigations that may be completed and why?

A chest X-ray is also carried out. There are two reasons for this, can you think of them?
CT AND MRI SCANS

A **computed tomography** (CT) scan, uses **x-rays** to take pictures of the head from many different angles. The pictures provide a detailed, **cross-sectional** view of specific areas of the brain.

**Magnetic resonance imaging** (MRI) uses **radio waves** and magnets to produce detailed pictures of the brain’s structure.

CT scans are usually performed before an MRI scan. Can you think of three reasons for this?

1)  
2)  
3)  

Below is an image of a CT scan and an MRI scan. Can you look at the differences between the two images and work out what colour bone, fluid and soft tissue would appear as on each image?

**CT scan:**

Bone –  
Fluid –  
Soft tissue –  

**MRI scan:**

Bone –  
Fluid -  
Soft tissue –

**N.B.** in MRIs, colours can change depending on enhancement to show up different tissues.
Haemoglobin contains iron. Iron is a mineral which is dense like bone, therefore a bleed (haemorrhage) will show up as white on a CT scan. An ischaemic infarct will lead to a lack of oxygen supplying the brain tissue and will cause the tissue around the lesion to become necrotic. This will therefore show up darker on a CT scan.

On the 2 images below a circle has been drawn around the area of the lesion. Label it an infarct or a haemorrhage.

MRI measures the way hydrogen atoms absorb and give off electromagnetic energy. Bodies are 60% hydrogen atoms. Water and fat contains lots of hydrogen atoms. Tissues that have the least hydrogen atoms appear darkest on MRI. Therefore bone will appear dark and fat will appear white. Blood contains some hydrogen atoms so it will therefore appear as a grey like colour. However MRIs can be a bit more complicated as the colour of the structures can vary depending on whether how the scan is weighted.

Can you identify the infarct on this MRI?
CT AND MRI SCANS

These are 10 images of CT scans at different cross sections. On each CT scan there is an area highlighted. Can you identify the structure that is highlighted and label each image with the correct letter to match the structure?

a. Spinal cord  
b. Sylvian fissure  
c. Cerebellar hemisphere  
d. Body of caudate nucleus  
e. Midbrain

f. Posterior limb of internal capsule  
g. Corona radiata  
h. Anterior horn of lateral ventricle  
i. Sulci  
j. Thalamus
You should now be a little more confident with how the different types of strokes show up on a CT scan and where the different structures within the brain are located.

Identify whether the following CT scans show an image of an infarct or a haemorrhage and describe the area in which the lesion is located and the circulation involved i.e. ACA, MCA or posterior circulation.
This is a CT scan of a patient who has had a stroke.

Answer the following true or false questions:

a) The area affected is in the patient’s left cortical hemisphere.

b) The patient has had a brain haemorrhage.

c) The artery involved is the anterior cerebral artery.

d) The patient is most likely to have greater neurological deficits in the right upper limb as opposed to the right lower limb but both may be affected.

e) The area of damage is in the frontal region.

f) The patient is likely to have some degree of sensory impairment.

g) The patient may have problems with communication - Broca’s and Wernicke’s areas are usually located on the left side of the brain.
THE MULTIDISCIPLINARY TEAM

Fill in the members of the MDT:

During your time on the Acute Stroke Unit arrange a joint session with two other members of the MDT and reflect on your experience.

<table>
<thead>
<tr>
<th>Date:</th>
<th>MDT member:</th>
<th>Date:</th>
<th>MDT member:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main learning points:</td>
<td></td>
<td>Main learning points:</td>
<td></td>
</tr>
</tbody>
</table>
It is essential to complete a thorough assessment of the cranial nerves affecting speech and swallowing at baseline. This allows you to identify impairments and potential implications, as well as plan appropriate treatment programs.

**What general information might you consider before commencing an assessment?**

**Neurological observations:**
What are the three sections of the Glasgow Coma Scale (GCS)?

What score on the GCS is classed as a coma?

What other neurological observation will be recorded on the obs chart and why?

**Initial physical observations:**
What can you gain from looking at the patient from the end of the bed?
COMMUNICATION: This table lists the Cranial nerves you would need to assess. What impairments would you see if these nerves were affected?

<table>
<thead>
<tr>
<th>Cranial nerves</th>
<th>Potential impact on communication</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>V –</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VII –</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IX –</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X –</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XI –</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XII -</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**SWALLOWING ASSESSMENT**

**SWALLOWING**: This table shows a list of Cranial Nerves involved in swallowing. What impairments might you see if these were affected by a Stroke?

<table>
<thead>
<tr>
<th>Cranial nerves</th>
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<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>V –</td>
<td></td>
<td></td>
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<tr>
<td>VII –</td>
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<td>IX –</td>
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<td>X –</td>
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<tr>
<td>XI –</td>
<td></td>
<td></td>
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<tr>
<td>XII -</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Observe and record your observations in a logical order in order to ensure that you don’t miss anything. Being as descriptive as possible enables another therapist to follow-up treatment with a clear baseline. What sort of things might you put under the following headings?

<table>
<thead>
<tr>
<th>Observe</th>
<th>Features of impairment you may see (consider pre-, during and post- swallow trials)</th>
<th>Impairment hypothesis/ impact on swallow safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alertness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory status</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Observe and record your observations in a logical order in order to ensure that you don’t miss anything. Being as descriptive as possible enables another therapist to follow-up treatment with a clear baseline. What sort of things might you put under the following headings?

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<tr>
<td>Positioning</td>
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<tr>
<td>Respiratory status</td>
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</tbody>
</table>
There are many different presentations of aphasia that you may come across. This is often related to the site and size of the lesion. Below are some different types of aphasia described in the literature. Fill in the features you may expect from these different diagnoses:

<table>
<thead>
<tr>
<th>Communication disorder</th>
<th>Comprehension</th>
<th>Expression</th>
<th>Reading/Writing/Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-fluent aphasia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluent aphasia</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Communication Disorder

<table>
<thead>
<tr>
<th></th>
<th>Receptive Language</th>
<th>Expressive Language</th>
<th>Reading/Writing/other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduction Aphasia</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Global Aphasia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transcortical motor aphasia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transcortical Sensory Aphasia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication disorder</td>
<td>Receptive language</td>
<td>Expressive language</td>
<td>Reading/Writing/Other</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------</td>
<td>---------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Thalamic aphasias</td>
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</tr>
</tbody>
</table>
Differential diagnosis of communication disorders can be challenging. Use the following to identify key features of these disorders that may help with differential diagnosis.

<table>
<thead>
<tr>
<th>Expressive aphasia</th>
<th>Verbal Apraxia</th>
<th>COGNITIVE COMMUNICATION DISORDER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Non – fluent | tangential | Involves all word classes | Written language is fine | confabulation |
---|---|---|---|---|
Difficulty with repetition | Intact comprehension | Spelling errors accompany speech problem | Anomia | Acute awareness of errors |
Slow processing of information | Increasing difficulty with multisyllabic words | Flat affect | Substitutions not distorted | Poor problem solving |
Agrammatic | Reduced attention and concentration | Poor self monitoring/awareness | Reduced DDK rates – even at single syllable | Difficulty interpreting information |
Variable groping | verbosity | Errors restricted to content words | Distractable therefore difficulty attending to conversation | Distorted substitutions present |
POSITIONING IN THE STROKE PATIENT WITH A HEMIPLEGIC ARM

What are the implications for communication work with a client whose dominant limb is hemiplegic?

We will frequently work with clients with weak or hemiplegic upper limbs in our sessions.

- Which upper limb is more likely to be affected in a client with aphasia?

**True or false, when working with a client with a hemiplegic upper limb you should:**

Pull on the arm when helping the client to reposition in bed or the chair

Place a pillow under the affected arm

Let the arm hang over the edge of the chair

Support the arm under the elbow when moving/positioning the patient

Use the hand as the point of contact to guide the rest of the upper limb

Encourage the client to attend to their arm, touch and reposition as able to

Seek guidance from your Physiotherapy and OT colleagues about any specific techniques
What other issues might mean we have to adapt our assessment strategy?

e.g. you may want to think about physical, cognitive factors etc

- Medical
- Physical
- Cognition
- Environmental
- Other
These case study videos are available to download from the South London Cardiac and Stroke Network Website (click on video still or link for each patient).

**Using video**

Using videos for a baseline/outcome measure and during therapy can be an essential part of speech and language therapy. A typical baseline video would be about 10 minutes long and consist of a natural conversation (with very little support by the Speech and Language Therapist), either with the treating therapist or someone who doesn't know the patient well.

At the end of the spontaneous conversation, a structured task is given (ask the patient how to make scrambled eggs, or tell the story of Cinderella). This can be very enlightening e.g. how much/little information the patient gives, how verbose or passive the patient is. The video is then reviewed with the patient, in order to demonstrate what strategies they are/are not using, and to see their level of insight.
There are three patients with different speech and language impairments. Follow these guidelines for each patient:

**Patient 1**

- Describe this patient in terms of the WHO classification (Impairment, Activity, Participation)

- Suggest suitable therapy activities

- How could you help? What strategies could you use?

- Identify how you would negotiate a short term SMART goal with this patient

Patient 2

- Describe this patient in terms of the WHO classification (Impairment, Activity, Participation)

- Suggest suitable therapy activities

- How could you help? What strategies could you use?

- Identify how you would negotiate a short term SMART goal with this patient

www.slcsn.nhs.uk/media/salt-wkbk/pt-int-2a/wkbk2.html
**Patient 3**

- Describe this patient in terms of the WHO classification (Impairment, Activity, Participation)

- Suggest suitable therapy activities

- How could you help? What strategies could you use?

- Identify how you would negotiate a short term SMART goal with this patient

Match up the outcome measures with what they are measuring:

- **MCLA**: Mood
- **Frenchay Dysarthria Assessment**: Speech intelligibility
- **CAT**: High level language
- **Pyramids and Palm Trees**: Overall language function
- **Boston Naming Test**: Speech intelligibility
- **Apraxia Battery**: Cognitive communication skills
- **Mt Wilga**: Semantic Processing
- **VASES**: Expressive language
See below for the key features of some of the more functional outcome measures commonly used in stroke management:

**TOM's: Therapy Outcome Measures**
- Developed by Pam Enderby in the UK
- Assess client across four domains, based on the World Health Organization’s (WHO) International Classification of Impairment, Disability, and Handicap
- One domain describes impairment of body structure/body function
- Another domain describes disability
- Remaining two domains address psychosocial status: handicap and well-being/distress
- There are a set of TOM’s for different SLT disorders
- Australian TOM’s (Aus TOM’s)- created to include additional clinical information and address differences in terminology from the UK version.
- Both versions are entirely clinician scored, and do not require client involvement.

**GAS: Goal Attainment Scale**
- GAS is a process worked through jointly with the clinician and individual, to provide achievable aims for therapy
- Jointly define ‘expected’, ‘more than expected’ and ‘less than expected’ outcomes
- Set time period for review
- Provides associated numerical scores against goals
- Time consuming process
- Highly individualised outcome measure- client involved
- Care needs to be taken that expected goals are realistic.

**FIM FAM: Functional Independence Measure – Functional Assessment Measure**
- Focuses on the level of assistance the individual requires to perform activities of daily living
- FIM = 18 items on a scale from 1 – 7 based on physical ability
- FAM = additional 12 items based more on cognitive ability, including community integration, emotional status, safety awareness, reading, writing, swallowing, speech intelligibility
- FIM FAM is completed jointly by MDT
- Is sensitive to change throughout rehabilitation.

**Client Centered Outcome Measures**
- Pound et al (2000)- highlighted importance of client focused outcome measures for people with aphasia
- Need to look not only at language and communication skills, but also the experience and opinions of client with regards to intervention effectiveness
- Self rating scales = quick and easy measure for use in any setting

**Video feedback**
- Useful to highlight changes pre and post intervention
- Can also function as a therapy tool to raise client’s awareness of communication skills
Videofluoroscopy is regularly used for assessment of dysphagia in Stroke patients. Answer the following questions relating to the use of this procedure:

What is videofluoroscopy?

What is involved in this procedure?

When would you consider doing a VF?

Why would you not use VF?

For examples of videofluoroscopy please follow these links:
www.slcsn.nhs.uk/media/salt-wkbk/clin/vid1.wmv
www.slcsn.nhs.uk/media/salt-wkbk/clin/vid2.wmv
www.slcsn.nhs.uk/media/salt-wkbk/clin/vid3.wmv
FEES is not as readily available in all hospitals however is proven to be as effective as VF in identifying the cause of dysphagia and in identifying aspiration. Answer the following questions in relation to the use of fees

What does FEES stand for?

What is involved in this procedure?

When would you consider doing a FEES?

When would you not use FEES?

www.slcsn.nhs.uk/media/salt-wkbk/fees1/fees1.html

www.slcsn.nhs.uk/media/salt-wkbk/fees2/fees2.html
Advantages and disadvantages of different types of assessment. List the key advantages and disadvantages of using FEES and VFS:

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>VFS</td>
<td>VFS</td>
</tr>
<tr>
<td>FEES</td>
<td>FEES</td>
</tr>
</tbody>
</table>
Dysphagic stroke patients are at high risk of malnutrition. The diagram below demonstrates how the potential consequences of dysphagia can lead to malnutrition and how the consequences of malnutrition can compound a patient's swallowing difficulties.

Dysphagia can cause:
- Decreased ability to swallow
- Impaired recovery—physically and psychologically
- Increased length of stay
- Lethargy and confusion
- Increased risk of infection
- Weight loss
- Low mood

Malnutrition: which will cause:
- Dehydration
- Low mood
- Weight loss
- Fatigue
- Increase risk of infection
- Poor mouth state
- Decreased intake
• What is the role of the Dietitian in stroke?

• What are common problems which negatively impact on nutritional status of Stroke patients

• What is the percentage of patients that are malnourished on admission to hospital?

  10%   20%   40%

• Have a look in a patients’ nursing notes for a weight history and food chart. Why do you think these tools are useful when managing patients who are at risk or who are already malnourished?

**TASK:**

Observe two mealtimes and note down all potential barriers a patient faces whilst on a modified consistency diet and fluids compared with a patient on normal diet and fluids.
STROKE AND DIETICIANS: NUTRITIONAL MANAGEMENT

- Screen all patients for their risk of Malnutrition
- Monitor dietary intake, fluid balance and weight
- Oral Nutritional support
- Tube feeding

**TASKS:**
Find out which nutritional screening tool is used in your trust and the action plan attached to each level of risk:

Find out which nutritional supplements are available in your trust and list four examples:

Taste a modified consistency diet and thickened fluids. Reflect of the taste mouth feel, palatability and volume:
Feeding tubes are a common nutritional intervention used with dysphagic patients; either to provide supplementary nutrition or as the patients’ sole source of nutrition and hydration.

Name 3 of the most frequently used feeding tubes in Stroke patients. Explain why and when each tube would be indicated:

1. 
2. 
3. 
Find the words relating to apraxia in the word search. What do they mean and how do they relate to apraxia (of speech)?

<table>
<thead>
<tr>
<th>Prosody</th>
<th>Groping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diadochokenesis</td>
<td>Repetition</td>
</tr>
<tr>
<td>Repetition</td>
<td>Substitutions</td>
</tr>
<tr>
<td>Substitutions</td>
<td>Distortions</td>
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<tr>
<td>Distortions</td>
<td>Insula</td>
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<tr>
<td>Insula</td>
<td>Expressive aphasia</td>
</tr>
<tr>
<td>Expressive aphasia</td>
<td>Volitional movement</td>
</tr>
<tr>
<td>Volitional movement</td>
<td>Motor planning</td>
</tr>
<tr>
<td>Motor planning</td>
<td>Effortful</td>
</tr>
<tr>
<td>Effortful</td>
<td>Perseveration</td>
</tr>
<tr>
<td>Perseveration</td>
<td>Oro-facial</td>
</tr>
<tr>
<td>Oro-facial</td>
<td>Syllable</td>
</tr>
</tbody>
</table>

**Related Words:**
- Prosody
- Groping
- Diadochokenesis
- Repetition
- Substitutions
- Distortions
- Insula
- Expressive aphasia
- Volitional movement
- Motor planning
- Effortful
- Perseveration
- Oro-facial
- Syllable

**Word Search:**

```
EEVATNES  REP  FESLOTLAN
TXSOGMDAOBEOVTFGNAND
HPFLSISDERLTTATMPIOA
TRRSIEIDSEXRNRMCSFS

NEOMETDASEYSYAVOAIY
HSAKMFIDRVOLEDTEFML
VSSLORYOTEANLIONOOL

OINNFSTSCNRUEOACSRT
LVOONDILHSASREDBTOON

NEIUREOEOETLOTSHLGRP

OATACMNKDOKINMETSREP

IPURLNSNIFONOOETPNLF

HTKIUENYNYSRVEODAR

NAIYALSTETFTOTTELNSG

ESTWLPTNSFINIIIMPNO

SISTEASAIEBSTNMFSEIW

RABEMXNUSNFIRSSVNRNM

ESUSNLUTFUFFEALEOGT

PESGGRPPINGNLPRETOME
```
ALTERNATIVE AND AUGMENTATIVE COMMUNICATION (AAC)

Low and high tech aids are commonly used to support people with communication difficulties.

What factors might you need to consider before trialling a communication aid?
These are some communication aids commonly used by people with communication difficulties. Label the communication aids stating what they are and whether they are high or low tech aids.

- a) Big Mac 
  - HIGH TECH: H
- b) Basic picture chart 
  - LOW TECH: L
- c) Listen to me 
  - LOW TECH: L
- d) Talking mats 
  - LOW TECH: L
- e) lightwriter 
  - HIGH TECH: H
- f) E- tran Frame 
  - LOW TECH: L
- g) alphabet chart 
  - LOW TECH: L
Using the examples previously shown, select one or more communication aids that could be used to support the patients described in the examples here and explain why you would use that particular aid.

Case study 1 – 80 year old gentleman with left middle cerebral artery stroke. Presents with moderate receptive and expressive aphasia, right hemiparesis and right hemianopia having difficulty with indicating need for toileting and other basic needs with ward staff.

Case study 2 – 48 year old woman with left parietal infarct working as a lecturer, presents with good mobility but severe oral dyspraxia and becoming frustrated when communicating with family.
RECOMMENDED READING

ARTICLES/JOURNALS
Cochrane Database Syst Rev. 2010 May 12;(5):CD000425 Speech and language therapy for aphasia following stroke. Kelly H, Brady MC, Enderby P.

RESOURCES

BOOKS
Pound, C., Parr, S., Lindsay, J & Woolf, C (2000), Beyond Aphasia: Therapies For Living With Communication Disability, Bicester; Speechmark
A lot of research is currently being done in Stroke. What research (stroke specific) is happening in your hospital/local area? Speak to the research team and the medical teams on your ward to find out.

**Acute Stroke:**

**ALL patients incl community:**

**CAROTID and VERTEBRAL DISSECTION**
IMPAIRMENTS

Define the following terms:

Agnosia –

Agraphia –

Akinesia –

Alexia –

Anosognosia –

APHASIA:

Global Aphasia –

Receptive Aphasia

Expressive Aphasia –

GLOSSARY
IMPAIRMENTS cont.

Apraxia -

Ideational Apraxia –

Ideomotor Apraxia –

Ataxia –

Bradykinesia –

Clonus –

Confabulation –

Cognitive Communication disorder –

Dysarthria –

Dysdiadochokinesia –

Dysphagia –
Dysmetria –

Dysphonia –

Dyslexia –

Dystonia –

Echolalia –

Emotional lability –

Hemianopia –

Hypertonicity –

Hypotonicity –

Ischaemic cascade –
Ischaemic penumbra –

Neglect –

Nystagmus –

Rigidity –

Spasticity –

Stereognosis –
MEDICAL DISORDERS AND INVESTIGATIONS:

Describe the following terms:

Atrial fibrillation (AF) –

CADASIL –

Carotid sinus syndrome –

Carotid endarterectomy (CEA) –

Carotid Doppler Ultrasound –

Decompressive craniectomy –

Epilepsy –
MEDICAL DISORDERS AND INVESTIGATIONS cont.

Haemorrhagic transformation –

Moyamoya disease –

Postural hypotension –

Thrombolysis –

Todd's paralysis –

Lacunar infarct -
What are the indications and any SLT relevant side-effects for the following medications?:

<table>
<thead>
<tr>
<th>Drug name</th>
<th>Indications</th>
<th>SLT relevant side-effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alteplase</td>
<td></td>
<td></td>
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<tr>
<td>Amiodarone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amoxicillin (penicillin)</td>
<td></td>
<td></td>
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<tr>
<td>Aspirin</td>
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</tr>
<tr>
<td>Ceftriaxone plus azithromycin, levofloxacin, or moxifloxacin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atenolol (beta-adrenoceptor blocker)</td>
<td></td>
<td></td>
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<tr>
<td>Atorvastatin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-amoxiclav (Augmentin)</td>
<td></td>
<td></td>
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<tr>
<td>Baclofen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bendroflumethazide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bisoprolol fumarate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ciprofloxacin</td>
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</tr>
</tbody>
</table>
What are the indications and any SLT relevant side-effects for the following medications?

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<tr>
<th>Drug name</th>
<th>Indications</th>
<th>SLT relevant side-effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citalapram (also Cipramil)</td>
<td></td>
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<tr>
<td>Clopidogrel</td>
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<td></td>
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<tr>
<td>Haloperidol</td>
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<tr>
<td>Nifedipine Coracten SR</td>
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<td></td>
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<tr>
<td>Dabigatran etexilate</td>
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<tr>
<td>Diazepam</td>
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<td></td>
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<tr>
<td>Dipyridamole</td>
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<tr>
<td>Clexane</td>
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<tr>
<td>Gentamicin</td>
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<td></td>
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<tr>
<td>Heparin</td>
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<tr>
<td>Hyoscine / Atropine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lansoprazole (or omeprazol)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What are the indications and any SLT relevant side-effects for the following medications?:

<table>
<thead>
<tr>
<th>Drug name</th>
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</thead>
<tbody>
<tr>
<td>Mannitol (Osmatrol)</td>
<td></td>
<td></td>
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<tr>
<td>Methylprednisolone</td>
<td></td>
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<tr>
<td>Metoprolol</td>
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<tr>
<td>Perindopril</td>
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<tr>
<td>Pilocarpine hydrochloride</td>
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<tr>
<td>Propranolol</td>
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<td>Ramipril</td>
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<tr>
<td>Simvastatin</td>
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<tr>
<td>Verapamil</td>
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<tr>
<td>Warfarin</td>
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</tbody>
</table>
South London Cardiac and Stroke Network – [www.slcsn.nhs.uk](http://www.slcsn.nhs.uk)

**Evidence/Research**

- [http://www.cochrane.org/reviews/en/ab002840.html](http://www.cochrane.org/reviews/en/ab002840.html)
- [http://www.library.nhs.uk/default.aspx](http://www.library.nhs.uk/default.aspx) (requires athens login)
- [http://www.improvement.nhs.uk/stroke/](http://www.improvement.nhs.uk/stroke/)

**Guidelines**

- [http://www.healthcareforlondon.nhs.uk/](http://www.healthcareforlondon.nhs.uk/)
- [http://www.nice.org.uk/](http://www.nice.org.uk/)
- [www.rcplondon.ac.uk/](http://www.rcplondon.ac.uk/)
- National clinical guideline for stroke (RCP)
RESOURCES

ACCESSING LONG-TERM SUPPORT IN SOUTH LONDON:
Find out what your local community services are and what they provide outside the community SLT service
ORGANISATIONS / OTHER USEFUL LINKS

- http://www.stroke.org.uk/
- http://www.strokecare.co.uk/
- http://www.headway.org.uk
- http://www.brainandspine.org.uk
- http://www.differentstrokes.co.uk/
- http://www.connect.org.uk/
- http://www.speakability.org.uk/
- **London Stroke Strategy**
- http://www.nhs.uk/ACTFAST/Pages/stroke.aspx
- [http://www.uksrn.ac.uk/](http://www.uksrn.ac.uk/) (The library section contains several links to relevant presentations)
- http://www.ebrsr.com/
- http://bnf.org/bnf/bnf/58/104945.htm
- **National Sentinel Stroke Audit Phase II (clinical audit) 2008**
- http://www.strokecorecompetencies.org/node.asp?id=home