Case Report Form

**Augmented Upper Limb Physiotherapy for Acute Stroke Survivors undergoing Inpatient Stroke Rehabilitation; a feasibility study**

Chief Investigator: Dr Eileen Cowey

Principle Investigator: Abdullah Alhusayni

REC ref: 18/WS/0101

Study Sponsor: NHS Glasgow & Clyde & University of Glasgow

Name of Site: Hairmyres Hospital

CRF version: 1, Date: 06.09.18

Time point: Screening & Baseline assessment Time of the assessment:

Participants: **Stroke Survivor**

Patient Initials: Participant ID: SS

Researcher(s):

**CRF Completion Instructions**

**General**

The CRF should be completed during the scheduled visit. Complete the CRF using a **black ballpoint pen** and ensure thatall entries are complete and legible.

Avoid the use of abbreviations and acronyms.

Do not use participant identifiers anywhere on the CRF, such as name, hospital number etc., in order to maintain the confidentiality of the participant. Ensure that the header information (i.e. participant initials and ID number) is completed consistently throughout the CRF.

Each CRF page should be initialled and dated by the person completing the form. This must be legible on each page and **CRFs should only be completed by individuals delegated to complete CRFs on the Site Delegation log. Assessments should be completed at 0 and 12 weeks ± 2 weeks.**

Ensure that all fields are completed on each page:

* + If a test was Not Done record **ND** in the relevant box(es)
  + Where information is Not Known write **NK** in relevant box(es)
  + Where information is not applicable write **NA** in the relevant box(es)

**Corrections to entries**

If an error is made, draw a single line through the item, then write the correct entry on an appropriate blank space near the original data point on the CRF and initial and date the change.

**Do NOT**

* Obscure the original entry by scribbling it out
* Try to correct/ modify the original entry
* Use Tippex or correction fluid

If a participant prematurely withdraws from the trial a single line must be drawn across each uncompleted page to correspond with the last visit of the participant. The protocol deviation/violation/serious breach log should be used to record comments relating to each CRF visit that cannot be captured on the page itself. This includes reason for delayed or missed protocol visits or trial assessments, unscheduled visits etc.

**Adverse Events (AEs) and Serious Adverse Events (SAEs)**

AEs and SAEs should be emailed **within 24 hours** of the site being aware of the event using the trial specific SAE report form to **Mr Abdullah Alhusayni**, **Dr Eileen Cowey, Dr Aleksandra Dybus and Dr Lorna Paul**

**Storage**

CRF documents for each time point should kept separately and stored on site in a locked, secure area when not in use where confidentiality can be maintained. Ensure that they are stored separately to any other documents that might reveal the identity of the participant.

**Equipment**

1- 2 chairs 2- Action Research Arm Test Kit 3- Goniometer 4- Bed 5- Table

**ASSESSMENT 1 (SCREENING) PATIENT CONTACT DETAILS**

* **Once completed remove this page from CRF, enter contact details into ‘Contacts Database’**

**and store in ‘Participant Contacts File’**

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| **Patient Name:** |
| **Phone Number:**  **Mobile Number:**  **Email address:** |

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| **ASSESSMENT 1 (Screening) the Action Research Arm Test score** |
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| Instructions  There are four subtests: Grasp, Grip, Pinch, Gross Movement. Items in each are ordered so that:  • if the subject passes the first, no more need to be administered and he scores top marks for that subtest;  • if the subject fails the first and fails the second, he scores zero, and again no more tests need to be  performed in that subtest;  • otherwise he needs to complete all tasks within the subtest   |  |  | | --- | --- | | **Scoring (taken from Carroll, 1965, p.484):** | | | 0 | Can perform no part of test | | 1 | Performs test partially | | 2 | Completes test, but takes abnormally long time or has great difficulty | | 3 | Performs test normally |  |  |  |  | | --- | --- | --- | | **Activity** | **Score** | | | **Grasp** | **Left** | **Right** | | 1. Block, wood, 10 cm cube (If score = 3, total = 18 and to Grip)  Pick up a 10 cm block |  |  | | 2. Block, wood, 2.5 cm cube (If score = 0, total = 0 and go to Grip)  Pick up 2.5 cm block |  |  | | 3. Block, wood, 5 cm cube |  |  | | 4. Block, wood, 7.5 cm cube |  |  | | 5. Ball (Cricket), 7.5 cm diameter |  |  | | 6. Stone 10 x 2.5 x 1 cm |  |  | | **SUBTOTAL** Grasp | /18 | /18 |  |  |  |  |  | | --- | --- | --- | --- | | **Activity** | **Score** | | | | **Grip** | **Left** | **Right** | | | 1. Pour water from glass to glass (If score = 3, total = 12, and go to Pinch) |  |  | | | 2. Tube 2.25 cm (If score = 0, total = 0 and go to Pinch) |  |  | | | 3. Tube 1 x 16 cm |  |  | | | 4. Washer (3.5 cm diameter) over bolt |  | |  | | **SUBTOTAL** Grip | /12 | | /12 |      |  |  |  | | --- | --- | --- | | **Activity** | **Score** | | | **Pinch** | **Left** | **Right** | | 1. Ball bearing, 6 mm, 3rd finger and thumb (If score = 3, total = 18 and go to Grossmt) |  |  | | 2. Marble, 1.5 cm, index finger and thumb (If score = 0, total = 0 and go to Grossmt) |  |  | | 3. Ball bearing 2nd finger and thumb |  |  | | 4. Ball bearing 1st finger and thumb |  |  | | 5. Marble 3rd finger and thumb |  |  | | 6. Marble 2nd finger and thumb |  |  | | **SUBTOTAL** Pinch | /18 | /18 |  |  |  |  | | --- | --- | --- | | **Activity** | **Score** | | | **Gross Movement** | **Left** | **Right** | | 1. Place hand behind head (If score = 3, total = 9 and finish) |  |  | | 2. (If score = 0, total = 0 and finish) |  |  | | 3. Place hand on top of head |  |  | | 4. Hand to mouth |  |  | | **SUBTOTAL** Gross movement | /9 | /9 | |
| |  |  |  | | --- | --- | --- | | Action Research Arm Test (ARAT) score | **Left /57** | **Right /57** | |

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| **ASSESSMENT 1 (Screening) THE Mini Mental State Examination score** |
| **Instructions: Score one point for each correct response within each question or activity.**   |  |  |  | | --- | --- | --- | | **Maximum**  **Score** | **Patient’s**  **Score** | **Questions** | | **5** |  | “What is the year? Season? Date? Day? Month?” | | **5** |  | Where are we now? State? County? Town/city? Hospital? Floor?” | | **3** |  | The examiner names three unrelated objects clearly and slowly, then the instructor asks the patient to name all three of them. The patient’s response is used for scoring. The examiner repeats them until patient learns all of them, if possible. | | **5** |  | “I would like you to count backward from 100 by sevens.” (93, 86, 79, 72, 65, …) Alternative: “Spell WORLD backwards.” (D-L-R-O-W) | | **3** |  | “Earlier I told you the names of three things. Can you tell me what those were?” | | **2** |  | Show the patient two simple objects, such as a wristwatch and a pencil, and ask the patient to name them. | | **1** |  | “Repeat the phrase: ‘No ifs, ands, or buts.’” | | **3** |  | “Take the paper in your right hand, fold it in half, and put it on the floor.”  (The examiner gives the patient a piece of blank paper.) | |  |  | “Please read this and do what it says.” (Written instruction is “Close your eyes.”) | | **1** |  | “Make up and write a sentence about anything.” (This sentence must contain a noun and a verb.) | | **1** |  | “Please copy this picture.” (The examiner gives the patient a blank piece of paper and asks him/her to draw the symbol below. All 10 angles must be present and two must intersect.)  **C:\Users\2279066A\Desktop\MMSE.PNG** | | **30** |  | **TOTAL** | |
| Mini Mental State Examination (MMSE)= |

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| **ASSESSMENT 1 (SCREENING) Inclusion/EXCLUSION Criteria** | | | |
| **The following criteria MUST be answered YES for participant to be included in the trial (except where NA is appropriate):** | | **Yes** | **No** |
| 1. | Over 18 years old |  |  |
| 2. | Have moderate to severe upper limb functional limitation due to stroke (score 0-39 in the Action Research Arm Test (ARAT)) |  |  |
| 3. | Diagnosed with first stroke and admitted to the rehabilitation unit |  |  |
| 4. | Able to sit in a chair or a bed |  |  |
| 5. | Able to use computer or tablet with or without help from carers |  |  |
| 6. | Able to understand English language |  |  |
| 7. | Able to provide informed written consent |  |  |

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| **The following criteria MUST be answered NO for the participant to be included in the trial:** | | **Yes** | **No** |
| 1. | Have significant cardiorespiratory, orthopaedic, neurological or other condition which would preclude them from taking part in an exercise programme |  |  |
| 2. | Have moderate to severe cognitive impairment (score less than 25 in the Mini Mental State Examination (MMSE) |  |  |
| 3. | They score grade 3 or more in the measure of shoulder subluxation. |  |  |
| 4. | Currently participate in another project |  |  |

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| **Informed Consent:** | |
| **Date participant** **signed written consent form:** | **\_\_ \_\_ / \_\_ \_\_ / \_\_ \_\_ \_\_ \_\_**  (DD / MM / YYYY) |
| **Name of person taking informed consent: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | |

**ASSESSMENT 1 (BASELINE ASSESSMENT) demographic data**

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| **Age:** ……………………… |  | | |  |  |
| **Gender:**  Male (0)  Female (1)  Other: …………….. (2) | | | | | |
| **Time since diagnosis with stroke: ……………………………** | | | | | |
| **Ethnicity**: ………………………… | | | | | |
| **Educational level (tick all that apply)** | Primary school  (0) | | Secondary school  (1) | | College  (2) |
| University (Undergraduate) (3) | | University (Postgraduate)  (4) | | Other: …………….. (5) |
| **How long ago did you start using computers in years/months?** ……………………… | | | | | |
| **How often do you use computers?** | Daily  (0) | Occasionally  (1) | | Never  (2) | Only when my relative helps me  (3) |
| **Ability to walk before stroke:** | Independent with or without gait aid  (0) | Walk with assistance  (1) | | Unable to walk  (2) | |
| **Living arrangements before stroke: Living alone** | Yes  (0) | | | No  (1) | |
| **Living arrangements before stroke: Were you living at your own home?** | Yes  (0) | No  (1) Please specify: ……………………. | | | |
| **Are you able to move your hands after stroke?** | Yes  (0) | No  (1) | | | |
| **Are you able to walk after stroke?** | Yes  (0) | | | No  (1) | |
| **General health status:** | Excellent  (0) | Fair  (1) | | Poor  (2) | Other: ………………(3) |
| **Function before stroke:**   * Modified Rankin Scale (mRS): ……………………… | | | | | |
| **Stroke severity:**   * National Institute of Health Stroke Scale (NIHSS): ……………………… | | | | | |
| **Arm function:**   * The Action Research Arm Test (ARAT): ……………………… | | | | | |
| **Cognitive impairment:**   * Mini–Mental State Examination (MMSE): ……………………… | | | | | |
| **Will the participant be using his/her own tablet/laptop?** | Yes  (0) | | | No  (1) | |

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| **ASSESSMENT 1 (BASELINE) Trunk Impairment Scale** |
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| **Instructions** |
| * The starting position for each item is the same. The patient is sitting on the edge of a bed or treatment= table without back and arm support. The thighs make full contact with the bed or table, the feet are hip width apart and placed flat on the floor. The knee angle is 908. The arms rest on the legs. If hypertonia is present the position of the hemiplegic arm is taken as the starting position. The head and trunk are in a midline position. * If the patient scores 0 on the first item, the total score for the TIS is 0. * Each item of the test can be performed three times. The highest score counts. No practice session is allowed. * The patient can be corrected between the attempts. * The tests are verbally explained to the patient and can be demonstrated if needed. |
| |  |  |  | | --- | --- | --- | | **Static sitting balance** | | | | **ITEM** | **STATEMENT** | **SCORE** | | **Item 1** | Patient falls or cannot maintain starting position for 10 seconds without arm support | (0) | | Patient can maintain starting position for 10 seconds  **If score 0, then TIS total score 0** | (2) | | **Item 2**, starting position:  Therapist crosses the unaffected leg over the hemiplegic leg | Patient falls or cannot maintain sitting position for 10 seconds without arm support | (0) | | Patient can maintain sitting position for 10 seconds | (2) | | **Item 3**, starting position:  Patient crosses the unaffected leg over the hemiplegic leg | Patient falls | (0) | | Patient cannot cross the legs without arm support on bed or table | (1) | | Patient crosses the legs but displaces the trunk more than 10 cm backwards or assists crossing with the hand | (2) | | Patient crosses the legs without trunk displacement or assistance | (3) | | **Total static sitting balance : /7** | | | |
| |  |  |  | | --- | --- | --- | | **Dynamic sitting balance** | | | | **ITEM** | **STATEMENT** | **SCORE** | | **Item 1**, starting position:  Patient is instructed to touch the bed or table with the hemiplegic elbow (by shortening the hemiplegic side and lengthening the unaffected side) and return to the starting position | Patient falls, needs support from an upper extremity or the elbow does not touch the bed or table | (0) | | Patient moves actively without help, elbow touches bed or table  **If score 0, then items 2 and 3 score 0** | (1) | | **Item 2**, repeat item 1 | Patient demonstrates no or opposite shortening/lengthening | (0) | | Patient demonstrates appropriate shortening/lengthening  **If score0, then item 3 scores 0** | (1) | | **Item 3**, repeat item 1 | Patient compensates. Possible compensations are: (1) use of upper extremity, (2) contralateral hip abduction, (3) hip flexion (if elbow touches bed or table further then proximal half of femur), (4) knee flexion, (5) sliding of the feet | (0) | | Patient moves without compensation | (1) | | **Item 4**, starting position:  Patient is instructed to touch the bed or table with the unaffected  elbow (by shortening the unaffected side and lengthening the  hemiplegic side) and return to the starting position | Patient falls, needs support from an upper extremity or the elbow does not touch the bed or table | (0) | | Patient moves actively without help, elbow touches bed or table  **If score 0, then items 5 and 6 score 0** | (1) | | **Item 5,** repeat item 4 | Patient demonstrates no or opposite shortening/lengthening | (0) | | Patient demonstrates appropriate shortening/lengthening  **If score 0, then item 6 scores 0** | (1) | | **Item 6,** repeat item 4 | Patient compensates. Possible compensations are: (1) use of upper extremity, (2) contralateral hip abduction, (3) hip flexion (if elbow touches bed or table further then proximal half of femur), (4) knee flexion, (5) sliding of the feet | (0) | | Patient moves without compensation | (1) | | **Item 7,** starting position:  Patient is instructed to lift pelvis from bed or table at the hemiplegic side (by shortening the hemiplegic side and lengthening the unaffected side) and return to the starting position | Patient demonstrates no or opposite shortening/lengthening | (0) | | Patient demonstrates appropriate shortening/lengthening  **If score 0, then item 8 scores 0** | (1) | | **Item 8,** repeat item 7 | Patient compensates. Possible compensations are: (1) use of upper extremity, (2) pushing off with the ipsilateral foot (heel loses contact with the floor) | (0) | | Patient moves without compensation | (1) | | **Item 9,** starting position:  Patient is instructed to lift pelvis from bed or table at the unaffected side (by shortening the unaffected side and lengthening the hemiplegic side) and return to the starting position | Patient demonstrates no or opposite shortening/lengthening | (0) | | Patient demonstrates appropriate shortening/lengthening  **If score 0, then item 10 scores 0** | (1) | | **Item 10,** repeat item 9 | Patient compensates. Possible compensations are: (1) use of upper extremities, (2) pushing off with the ipsilateral foot (heel loses contact with the floor) | (0) | | Patient moves without compensation | (1) | | **Total** **dynamic sitting balance: /10** | | |  |  |  |  | | --- | --- | --- | | **Co-ordination** | | | | **ITEM** | **STATEMENT** | **SCORE** | | **Item 1,** starting position:  Patient is instructed to rotate upper trunk 6 times (every shoulder should be moved forward 3 times), first side that moves must be hemiplegic side, head should be fixated in starting position | Hemiplegic side is not moved three times | (0) | | Rotation is asymmetrical | (1) | | Rotation is symmetrical  **If score 0, then item 2 scores 0** | (2) | | **Item 2,** repeat item 1 within 6 seconds | Rotation is asymmetrical | (0) | | Rotation is symmetrical | (1) | | **Item 3,** starting position:  Patient is instructed to rotate lower trunk 6 times (every knee  should be moved forward 3 times), first side that moves must be  hemiplegic side, upper trunk should be fixated in starting position | Hemiplegic side is not moved three times | (0) | | Rotation is asymmetrical | (1) | | Rotation is symmetrical  **If score 0, then item 4 scores 0** | (2) | | **Item 4,** repeat item 3 within 6 seconds | Rotation is asymmetrical | (0) | | Rotation is symmetrical | (1) | | **Total co-ordination: /6** | | |   **Total Trunk Impairment Scale (TIS): /23** |

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| **ASSESSMENT 1 (Baseline) Modified Ashworth Scale** |
| **General Information (derived Bohannon and Smith, 1987):**   * Place the patient in a supine position * If testing a muscle that primarily flexes a joint, place the joint in a maximally flexed position and move to a position of maximal extension over one second (count "one thousand one”) * If testing a muscle that primarily extends a joint, place the joint in a maximally extended position and move to a position of maximal flexion over one second (count "one thousand one”) * Score based on the classification below |
| |  |  | | --- | --- | | **Scoring (taken from Bohannon and Smith, 1987):** | | | 0 | No increase in muscle tone | | 1 | Slight increase in muscle tone, manifested by a catch and release or by minimal resistance at the end of the range of motion when the affected part(s) is moved in flexion or extension | | 1+ | Slight increase in muscle tone, manifested by a catch, followed by minimal resistance throughout the remainder (less than half) of the ROM | | 2 | More marked increase in muscle tone through most of the ROM, but affected part(s) easily moved | | 3 | Considerable increase in muscle tone, passive movement difficult | | 4 | Affected part(s) rigid in flexion or extension- | |
| **Patient Instructions:**  The patient should be instructed to relax. |
| |  |  |  | | --- | --- | --- | | **Muscle Tested** | **Left/right** | **Score** | | Arm adductor muscle group |  |  | | Elbow flexor muscle group |  |  | | Wrist flexor muscle group |  |  | | Finger flexor muscle group |  |  | |

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| **ASSESSMENT 1 (Baseline) TARDIEU SCALE** |
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| **Instructions** |
| * This scale quantifies muscle spasticity by assessing the response of the muscle to stretch applied at specified velocities. * Grading is always performed at the same time of day, in a constant position of the body for a given limb. For each muscle group, reaction to stretch is rated at a specified stretch velocity with 2 parameters x and y. |
| **Velocity to stretch (V)** |
| |  |  | | --- | --- | | **V1** | As slow as possible | | **V2** | Speed of the limb segment falling | | **V3** | As fast as possible (> natural drop) | | V1 is used to measure the passive range of angle,  Motion. (PROM). Only V2 and V3 are used to rate spasticity | | |
| **Quality of muscle reaction (X)** |
| |  |  | | --- | --- | | 0 | No resistance throughout passive movement | | 1 | Slight resistance throughout, with no clear catch at a precise  angle | | 2 | Clear catch at a precise angle, followed by release | | 3 | Fatigable clonus (<10secs) occurring at a precise angle | | 4 | Unfatigable clonus (>10secs) occurring at a precise angle | | 5 | Joint Immobile | |
| **Angle of muscle reaction (Y)** |
| Measure relative to the position of minimal stretch of the muscle (corresponding at angle)   |  |  | | --- | --- | | **R1** | Angle of catch seen at Velocity V2 or V3 | | **R2** | Full range of motion achieved  when muscle is at rest and  tested at V1 velocity |  * A large difference between R1 & R2 values in the outer to middle range of normal m. length indicates a large dynamic component * A small difference in the R1 & R2 measurement in the middle to inner range indicates predominantly fixed contracture |
| **Testing Positions** |
| **Upper Limb**  To be tested in a sitting position, elbow flexed by 90° at the recommended joint positions and velocities.   |  |  |  |  | | --- | --- | --- | --- | | Shoulder | Horizontal Adductors | V3 |  | | Vertical Adductors | V3 | | Elbow | Flexors | V2 | Shoulder adducted | | Extensors | V3 | Shoulder adducted | | Wrist | Flexors | V3 |  | | Extensors | V3 | |  | Fingers |  | Angle PII of digit III- MCP | |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **Muscle Teste** | **Left/right** | **Starting position°** | **V** | **X** | **R1** | **R2** | ° | | Arm adductor muscle group |  |  |  |  |  |  |  | | Elbow flexor muscle group |  |  |  |  |  |  |  | | Wrist flexor muscle group |  |  |  |  |  |  |  | | Finger flexor muscle group |  |  |  |  |  |  |  | |

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| **ASSESSMENT 1 (Baseline) NIH Stroke Scale** |
| **Instructions**  Administer stroke scale items in the order listed. Record performance in each category after each subscale exam. Do not go back and change scores. Follow directions provided for each exam technique. Scores should reflect what the patient does, not what the clinician thinks the patient can do. The clinician should record answers while administering the exam and work quickly. Except where indicated, the patient should not be coached (i.e., repeated requests to patient to make a special effort). |
| |  |  |  | | --- | --- | --- | | **Instructions** | **Scale Definition** | **Score** | | **1a.** **Level of Consciousness:** The investigator must choose a response if a full evaluation is prevented by such obstacles as an endotracheal tube, language barrier, orotracheal trauma/bandages. A 3 is scored only if the patient makes no movement (other than reflexive posturing) in response to noxious stimulation. | **0 =** **Alert**; keenly responsive.  **1 =** **Not alert**; but arousable by minor stimulation to obey, answer, or respond.  **2 = Not alert**; requires repeated stimulation to attend, or is obtunded and requires strong or painful stimulation to make movements (not stereotyped).  **3 =** Responds only with reflex motor or autonomic effects or totally unresponsive, flaccid, and areflexic. | \_\_\_\_\_\_ | | **1b. LOC Questions:** The patient is asked the month and his/her age. The answer must be correct - there is no partial credit for being close. Aphasic and stuporous patients who do not comprehend the questions will score 2. Patients unable to speak because of endotracheal intubation, orotracheal trauma, severe dysarthria from any cause, language barrier, or any other problem not secondary to aphasia are given a 1. It is important that only the initial answer be graded and that the examiner not "help" the patient with verbal or non-verbal cues. | **0 = Answers** both questions correctly.  **1 = Answers** one question correctly.  **2 = Answers** neither question correctly. | \_\_\_\_\_\_ | | **1c. LOC Commands:** The patient is asked to open and close the eyes and then to grip and release the non-paretic hand. Substitute another one step command if the hands cannot be used. Credit is given if an unequivocal attempt is made but not completed due to weakness. If the patient does not respond to command, the task should be demonstrated to him or her (pantomime), and the result scored (i.e., follows none, one or two commands). Patients with trauma, amputation, or other physical impediments should be given suitable one-step commands. Only the first attempt is scored. | **0 = Performs** both tasks correctly.  **1 = Performs** one task correctly.  **2 = Performs** neither task correctly. | \_\_\_\_\_\_ | | **2. Best Gaze:** Only horizontal eye movements will be tested.  Voluntary or reflexive (oculocephalic) eye movements will be scored, but caloric testing is not done. If the patient has a conjugate deviation of the eyes that can be overcome by voluntary or reflexive activity, the score will be 1. If a patient has an isolated peripheral nerve paresis (CN III, IV or VI), score a 1. Gaze is testable in all aphasic patients. Patients with ocular trauma, bandages, pre-existing blindness, or other disorder of visual acuity or fields should be tested with reflexive movements, and a choice made by the investigator. Establishing eye contact and then moving about the patient from side to side will occasionally clarify the presence of a partial gaze palsy. | **0 = Normal**.  **1 = Partial gaze palsy;** gaze is abnormal in one or both eyes, but forced deviation or total gaze paresis is not present.  **2 = Forced deviation**, or total gaze paresis not overcome by the oculocephalic maneuver. | \_\_\_\_\_\_ | | **3. Visual:** Visual fields (upper and lower quadrants) are tested by confrontation, using finger counting or visual threat, as appropriate. Patients may be encouraged, but if they look at the side of the moving fingers appropriately, this can be scored as normal. If there is unilateral blindness or enucleation, visual fields in the remaining eye are scored. Score 1 only if a clear-cut asymmetry, including quadrantanopia, is found. If patient is blind from any cause, score 3. Double simultaneous stimulation is performed at this point. If there is extinction, patient receives a 1, and the results are used to respond to item 11. | **0 = No visual loss.**  **1 = Partial hemianopia.**  **2 = Complete hemianopia.**  **3 = Bilateral hemianopia** (blind including cortical blindness). | \_\_\_\_\_\_ | | **4. Facial Palsy:** Ask – or use pantomime to encourage – the patient to show teeth or raise eyebrows and close eyes. Score symmetry of grimace in response to noxious stimuli in the poorly responsive or non-comprehending patient. If facial trauma/bandages, orotracheal tube, tape or other physical barriers obscure the face, these should be removed to the extent possible. | **0 = Normal** symmetrical movements.  **1 = Minor paralysis** (flattened nasolabial fold, asymmetry on smiling).  **2 = Partial paralysis** (total or near-total paralysis of lower face).  **3 = Complete paralysis** of one or both sides (absence of facial movement in the upper and lower face). | \_\_\_\_\_\_ | | **5. Motor Arm:** The limb is placed in the appropriate position: extend the arms (palms down) 90 degrees (if sitting) or 45 degrees (if supine). Drift is scored if the arm falls before 10 seconds. The aphasic patient is encouraged using urgency in the voice and pantomime, but not noxious stimulation. Each limb is tested in turn, beginning with the non-paretic arm. Only in the case of amputation or joint fusion at the shoulder, the examiner should record the score as untestable (UN), and clearly write the explanation for this choice. | **0 = No drift**; limb holds 90 (or 45) degrees for full 10 seconds.  **1 = Drift**; limb holds 90 (or 45) degrees, but drifts down before full 10 seconds; does not hit bed or other support.  **2 = Some effort against gravity**; limb cannot get to or maintain (if cued) 90 (or 45) degrees, drifts down to bed, but has some effort against gravity.  **3 = No effort against gravity**; limb falls.  **4 = No movement**.  UN = **Amputation** or joint fusion, explain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_  **5a. Left Arm**  **5b. Right Arm** | \_\_\_\_\_\_  \_\_\_\_\_\_ | | **6. Motor Leg:** The limb is placed in the appropriate position: hold the leg at 30 degrees (always tested supine). Drift is scored if the leg falls before 5 seconds. The aphasic patient is encouraged using urgency in the voice and pantomime, but not noxious stimulation. Each limb is tested in turn, beginning with the non-paretic leg. Only in the case of amputation or joint fusion at the hip, the examiner should record the score as untestable (UN), and clearly write the explanation for this choice. | **0 = No drift**; leg holds 30-degree position for full 5 seconds.  **1 = Drift**; leg falls by the end of the 5-second period but does not hit bed.  **2 = Some effort against gravity**; leg falls to bed by 5 seconds, but has some effort against gravity.  **3 = No effort against gravity**; leg falls to bed immediately.  **4 = No movement**.  UN = **Amputation** or joint fusion, explain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_  **6a. Left Leg**  **6b. Right Leg** | \_\_\_\_\_\_  \_\_\_\_\_\_ | | **7. Limb Ataxia:** This item is aimed at finding evidence of a unilateral cerebellar lesion. Test with eyes open. In case of visual defect, ensure testing is done in intact visual field. The finger-nose-finger and heel-shin tests are performed on both sides, and ataxia is scored only if present out of proportion to weakness. Ataxia is absent in the patient who cannot understand or is paralyzed. Only in the case of amputation or joint fusion, the examiner should record the score as untestable (UN), and clearly write the explanation for this choice. In case of blindness, test by having the patient touch nose from extended arm position. | **0 = Absent**.  **1 = Present** **in one limb.**  **2 = Present in two limbs.**  **UN** = **Amputation** or joint fusion, explain: \_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_ | | **8. Sensory:** Sensation or grimace to pinprick when tested, or withdrawal from noxious stimulus in the obtunded or aphasic patient. Only sensory loss attributed to stroke is scored as abnormal and the examiner should test as many body areas (arms [not hands], legs, trunk, face) as needed to accurately check for hemisensory loss. A score of 2, “severe or total sensory loss,” should only be given when a severe or total loss of sensation can be clearly demonstrated. Stuporous and aphasic patients will, therefore, probably score 1 or 0. The patient with brainstem stroke who has bilateral loss of sensation is scored 2. If the patient does not respond and is quadriplegic, score 2. Patients in a coma (item 1a=3) are automatically given a 2 on this item. | **0 = Normal**; no sensory loss.  **1 = Mild-to-moderate sensory loss**; patient feels pinprick is less sharp or is dull on the affected side; or there is a loss of superficial pain with pinprick, but patient is aware of being touched.  **2 = Severe to total sensory loss**; patient is not aware of being touched in the face, arm, and leg. | \_\_\_\_\_\_ | | **9. Best Language:** A great deal of information about comprehension will be obtained during the preceding sections of the examination.  For this scale item, the patient is asked to describe what is happening in the attached picture, to name the items on the attached naming sheet and to read from the attached list of sentences.  Comprehension is judged from responses here, as well as to all of the commands in the preceding general neurological exam. If visual loss interferes with the tests, ask the patient to identify objects placed in the hand, repeat, and produce speech. The intubated patient should be asked to write. The patient in a coma (item 1a=3) will automatically score 3 on this item. The examiner must choose a score for the patient with stupor or limited cooperation, but a score of 3 should be used only if the patient is mute and follows no one-step commands. | **0 = No aphasia**; normal.  **1 = Mild-to-moderate aphasia**; some obvious loss of fluency or facility of comprehension, without significant limitation on ideas expressed or form of expression. Reduction of speech and/or comprehension, however, makes conversation about provided materials difficult or impossible. For example, in conversation about provided materials, examiner can identify picture or naming card content from patient’s response.  **2 = Severe aphasia**; all communication is through fragmentary expression; great need for inference, questioning, and guessing by the listener. Range of information that can be exchanged is limited; listener carries burden of communication. Examiner cannot identify materials provided from patient response.  **3 = Mute, global aphasia**; no usable speech or auditory comprehension. | \_\_\_\_\_\_ | | **10. Dysarthria:** If patient is thought to be normal, an adequate sample of speech must be obtained by asking patient to read or repeat words from the attached list. If the patient has severe aphasia, the clarity of articulation of spontaneous speech can be rated. Only if the patient is intubated or has other physical barriers to producing speech, the examiner should record the score as untestable (UN), and clearly write an explanation for this choice. Do not tell the patient why he or she is being tested. | **0 = Normal.**  **1 = Mild-to-moderate dysarthria**; patient slurs at least some words and, at worst, can be understood with some difficulty.  **2 = Severe dysarthria**; patient's speech is so slurred as to be unintelligible in the absence of or out of proportion to any dysphasia, or is mute/anarthric.  UN = **Intubated** or other physical barrier,  explain:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_ | | **11. Extinction and Inattention (formerly Neglect):** Sufficient information to identify neglect may be obtained during the prior testing. If the patient has a severe visual loss preventing visual double simultaneous stimulation, and the cutaneous stimuli are normal, the score is normal. If the patient has aphasia but does appear to attend to both sides, the score is normal. The presence of visual spatial neglect or anosagnosia may also be taken as evidence of abnormality. Since the abnormality is scored only if present, the item is never untestable. | **0 = No abnormality**.  **1 = Visual, tactile, auditory, spatial, or personal inattention** or extinction to bilateral simultaneous stimulation in oneof the sensory modalities.  **2 = Profound hemi-inattention or extinction to more than**  **one modality;** does not recognize own hand or orients to only one side of space. | \_\_\_\_\_\_ |   **NIH Stroke Scale (NIHSS) score:** |

|  |
| --- |
| **ASSESSMENT 1 (baseline) MODIFIED RANKIN SCALE** |
| |  |  | | --- | --- | | **Score** | **Description** | | 0 | No symptoms at all | | 1 | No significant disability despite symptoms; able to carry out all usual duties and activities | | 2 | Slight disability; unable to carry out all previous activities, but able to look after own affairs without assistance | | 3 | Moderate disability; requiring some help, but able to walk without assistance | | 4 | Moderately severe disability; unable to walk without assistance and unable to attend to own bodily needs without assistance | | 5 | Severe disability; bedridden, incontinent and requiring constant nursing care and attention | | 6 | Dead | |
| Modified Rankin Scale (MRs) score: |

**ASSESSMENT 1 (BASELINE ASSESSMENT) demographic data- medical history (patient’s medical records)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Stroke risk factors**: | Coronary artery disease  (0) | Atrial fibrillation  (1) | Diabetes  (2) | | | |
| Hypertension (3) | Smoking  (4) | | Alcohol use  (5) | | |
| Hyperlipidemia  (6) | Weight (BMI):……………… (7) | | Other: …………….. (8) | | |
| **Co-morbid conditions**: | Osteoarthritis  (0) | Other neurological disease: …………………  (1) | | | | |
| **Previous transient ischaemic attack (TIA):** | Yes  (0) | No (1) | | | | |
| **Stroke type:** | Ischaemic  (0) | Haemorrhage  (1) | | | | |
| **Stroke sub-type:** | Lacunar (0) | Large artery  (1) | Other : ………………..(e.g. carotid dissection)  (2) | | | Undetermined  (3) |
| **Stroke location:** | Cortical (Internal Capsule) (0) | Cortical (Middle cerebral artery)  (1) | Cortical (Frontal lobe)  (2) | | | |
| Subcortical (Thalamus) (3) | Subcortical (Basal Ganglia)  (4) | | | Midbrain (Medulla) (5) | |
| Midbrain (Cerebellum)  (6) | Brainstem  (7) | | | | |
| **Thrombolysis / reperfusion therapy** | Yes  (0) | No (1) | | | | |
| **Confirmed stroke on imaging** | Yes  (0) | No (1) | | | | |
| **CT obtained** | Yes  (0) | No (1) | | | | |
| **MRI obtained** | Yes  (0) | No (1) | | | | |