## KIM Screening and Assessment Protocols

Below are full protocols for fieldworkers screening and clinicians examining for specific impairments and health conditions in children, using tools developed or adapted by ICED.

All tools are available from ICED and incorporated into the example KIM Screening and Assessment form ( [link here](https://blogs.lshtm.ac.uk/disabilitycentre/files/2015/01/Questionnaire-Screening-and-Assessment.xlsx)).

Please remember that these protocols are based on specific tools and equipment, and that they may need to be adapted dependent on your own resources and the specific types of disability that you are identifying in your KIM. Similarly, if you use other tools than those included in the example KIM Screening and Assessment Questionnaire, you will need to develop your own protocols.

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# Self Report or Proxy Screening

**Tool:** UNICEF/Washington Group DRAFT module on child functioning

**Equipment needed for screening:** None

The UNICEF/Washington Group screening questions are designed to identify children aged between 2 and 17 years old at risk of disability. The questions are not suitable for children under the age of two.

1. Carefully copy the participant’s Camp and ID Number onto the top of the page. This is in case the pages get separated, so that we can still use the data.
2. Write your own Interviewer ID Number in the space provided.
3. Read the preamble before the questions clearly to the child or the proxy.
4. Response options for each question should be read out in full to participants for each question. Be particularly mindful of which questions are relevant to which age groups, which is clearly stated on the questionnaire.

# Visual Impairment

**Tool:** Adapted Rapid Assessment of Avoidable Blindness (RAAB) [[2](#_ENREF_2)] available from ICED

**Equipment needed for screening:** Tumbling ‘E’ snellen chart with 6/12, 6/18 and 6/60 optotypes; 6 metre rope with 1 metre and 3 metre demarcation; pinhole occluder; chalk; red pen

**Equipment needed for examination:** Direct ophthalmoscope

## Vision Screening

Preparations:

1. Select an appropriate place for testing vision. It is best done in full daylight outside.
2. Using the rope (pulled tight), measure out a distance of 1, 3 and 6 meters and mark this clearly on the floor (e.g. using chalk marks)

*Children aged 0-2 years*

Use a red pen (with lid) and see if the child can fix on and follow the pen when you move it. If the child can fix and follow mark that the child can fix and follow. If not, mark “no”.

*Children aged 3-4 years*

1. If the child is wearing distance glasses, test his/her vision first with available glasses (presenting vision).
2. Stand at 6 meters and show some of your fingers and ask the child to show the same number of fingers with their hand (or count number of fingers). Repeat this 5 times
3. If the child gets this right 4 out of 5 times mark that the child can count fingers. If not, mark that they cannot.
4. Take your time with this to make sure the child understands what is being asked of them. Always start by standing close to them and explaining what you want them to do. Ask them first to count/copy your fingers several times while you are still standing close to them. This helps you to know whether or not they understand.

*Participants aged 5 years and above:*

Test vision using the simplified `E' chart.

If the child is wearing distance glasses, test his/her vision first with available glasses (presenting vision).Visual acuity is measured with a chart with one ‘E’ optotype of size 18 on one side and an ‘E’ optotype of size 60 on the other side, and a second chart with ‘E’ optotype of size 12. This is best done in full daylight, outside.

Test the right eye first, while the left eye is covered with the palm of a hand or an occluder, either by the participant, or by a helper. The participant should stand in the shade or with his or her back to the sun, while the E chart is kept up in clear daylight. First show the ‘E’ chart nearby to check understanding. Clearly explain the procedure and ask the participant to point in the direction of the open ends of the ‘E’. Do this a couple of times.

Next move to 6 meters and show the ‘E’ chart size 6/60 (‘big E’). It is advisable to start with the larger E to check again that the participant understands the procedure. If the participant can see the E of size 60 at 6 metres (6/60), change to the E size 18 at 6 metres distance (6/18) and to the E size 12 at 6 metres distance (6/12). If the participant cannot see 6/60, move to size 60 at 3 metres (3/60). If they cannot see 3/60, move to E size 60 at 1 meter. If the E of size 60 cannot be seen at a distance of 1 metre, check with a torch in semi-dark condition (inside the house) whether the person has perception of light (PL+) or not (PL-).

Rotate the ‘E’ before each new reading to change the direction of the open ends. This rotation should be in varying directions to avoid memorising. The criteria for vision at a certain level are 4 correct consecutive showings, or 4 correct out of 5 showings.

An eye with VA better than 6/12 does not need to be examined with pinhole - just mark code 1 for pinhole vision. Any eye with a VA less than 6/12 has to be examined for acuity with a pinhole as well. When using the pinhole always start at the best level of vision they could see without pinhole first to check they are using the pinhole correctly. For example if a participant could see 6/18 (presenting vision) but not 6/12, then with the pinhole first check the E of size 18 at 6 meters and then change to E of size 12 at 6 meters. Mark the VA obtained with the pinhole. If the person wears spectacles, place the pinhole in front of the spectacles. In some cases, the available correction is not the optimal correction.

## 2.2 Vision Examination

**Lens examination of subject**

After measuring the visual acuity, the examinee is taken to a shaded or dark area. There, the lens status is assessed by torch and binocular loupe and by distant direct ophthalmoscopy at 20-30 cm distance in semi-dark condition, without dilatation of the pupil. Examine the lens in each eye and mark your observations: normal lens or minimal lens opacity; obvious lens opacity present, lens absent (aphakia), IOL implanted without posterior capsule opacification or IOL implanted and posterior capsule opacification present. If you cannot see the lens because of corneal scarring, phthisis bulbi or other causes, mark ‘No view of lens’.

|  |  |
| --- | --- |
| **Section C. Lens Examination coding instructions** | |
| **Item** | **Instructions** |
| Normal lens, minimal lens opacity | Crystal clear lens or minimal lens opacity, unlikely to cause reduction of visual acuity. Clear or minimal dark shading of the red reflex. |
| Obvious lens opacity | A pupil that clearly appears grey or white when examined with oblique light in a shaded or darkened area. With distant direct ophthalmoscopy an obvious dark shading of the red reflex is visible.  Note: This item refers to a major opacification of the lens, leading to low vision or blindness. Section F has to be filled in when there is an obvious lens opacity and a pinhole VA <6/18 in one or both eyes. |
| Lens absent (aphakia) | Absence of lens from the central pupil. May be judged to be present when there is a reliable history of cataract extraction and/or if other evidence of absence of the lens from the central pupillary area, such as iris tremulousness. A completely dislocated lens, as occurs with couching or trauma, should also be recorded as aphakia. |
| Pseudophakia without PCO | As aphakia, but with Intra-Ocular Lens (IOL) inserted. No Posterior Capsule Opacification (PCO) to be seen with the unaided eye. |
| Pseudophakia with PCO | As aphakia, but with Intra-Ocular Lens (IOL) inserted. Obvious Posterior Capsule Opacification (PCO) to be seen with the unaided eye. |
| No view of lens | Mark if the lens cannot be seen because of dense corneal opacity, Phthisis, or for other reasons. |

**Main and principal cause of presenting vision less than 6/12**

In case the visual acuity of one or both eyes is less than 6/12 with available correction, the eye(s) have to be examined to find the cause of the low vision or blindness.

The completion of this section can be divided into two activities: (1) for each eye, assess and mark one principal disorder that is responsible for visual loss in that eye; (2) mark one principal disorder responsible for or contributing to visual loss in the person. If the VA was 6/12 or better in the eye then mark ‘not examined – can see 6/12’ (code 15).

Mark the principal disorder responsible for visual loss in each eye as well as in the individual (better eye) after considering disorders in either eye, which are most amenable to treatment or prevention. When there are two disorders, one of which is secondary to the other, the primary is to be selected as the principal disorder. For example, if the patient has cataract secondary to glaucoma, glaucoma is the principal disorder. When there are co-existing primary disorders in the same or different eyes, mark as the principal disorder that which is most readily curable or, if not curable, that which is most easily preventable.

The following is a recommended ranking of the disorders with respect to these criteria:

1. Refractive error

2. Aphakia, uncorrected

3. Cataract, untreated

4. Cataract surgical complications

5. Preventable corneal opacities and phthisis

6. (Primary) glaucoma

7. Other posterior segment disorders.

Once the disorders and underlying causes have been marked for each eye, an assessment is made of the principal cause of low vision in the person.

*Equipment needed:* direct ophthalmoscope

*Method*:When the examined eye does not improve to 6/18 or better with pinhole examination, the eye is examined in detail in a shaded or dark area, using a direct ophthalmoscope.

|  |  |
| --- | --- |
| **Definitions and coding instructions** | |
| **Item** | **Instructions for coding** |
| Refractive error | Phakic eyes with VA< 6/18, improving with pinhole or optical correction to 6/18 or better. |
| Aphakia, uncorrected | Aphakia (absence of lens from the central pupil), improving with correction or pinhole to 6/60 or better. For aphakia where VA does not improve with proper correction, other causes of visual loss should be determined and recorded appropriately, while uncorrected aphakia should not be marked. If there is clear evidence that a surgical procedure has led to a blinding condition, e.g. secondary glaucoma, then ‘surgical complication’ should be marked as an underlying cause. |
| Cataract, untreated | Obvious lens opacity, obscuring a clear red reflex, which is likely to affect vision. Do not mark this option in cases of minor opacities, unlikely to affect vision. |
| Surgical complications | If there is evidence that a surgical procedure has led to a blinding condition, e.g., secondary glaucoma, then this box should be marked. Uncorrected aphakia must be recorded as above. |
| Trachoma corneal opacity | Central corneal scarring in the presence of at least one of the following signs of trachoma:   * trichiasis / entropion; * conjunctival scarring; * pannus, or; * Herbert’s pits. |
| Other corneal opacity | Leucoma, staphyloma, or other easily visible corneal opacity present over the pupil (no signs of trachoma). |
| Phthisis | Small shrunken globe due to trauma or severe infection. |
| Onchocerciasis | In the presence of dermatological signs of onchocerciasis there is either:   * sclerosing keratitis; * chronic iridocyclitis; * chorioretinal atrophy; or, * optic atrophy. |
| Glaucoma | Mark if any of the following suggested criteria apply:   * the eye is stone hard on digital palpation; * an afferent pupil defect and corneal oedema; * the vertical cup-disk ratio is 0.8 or greater.   This is not a complete diagnosis for glaucoma, but only used for the purpose of this survey, since tonometry and testing of visual fields is not practical under field conditions and glaucoma is not the focus of this survey. |
| Diabetic retinopathy | This diagnosis applies only for persons with confirmed diabetes.  The retina shows either:   * proliferative retinopathy (growth of new blood vessels with or without haemorrhages), or; * diabetic macular oedema (extensive swelling of the central retina). |
| Age-Related Macular Degeneration (ARMD) | ARMD refers to obvious or severe pigment disturbances at the macula from what is considered ‘normal’ in the absence of other known causes.  Check if any of the following suggested criteria apply:   * the pigment epithelium is disturbed by atrophy, or proliferation (mottling); * drusen (yellow colloid-like dots); * swelling or oedema of the central retina; * circinate exudates; * Haemorrhage; * Macula hole. |
| Other posterior segment disorder: | If the VA<6/18 cannot be attributed to any of the above mentioned causes, but a specific cause can be identified then use this diagnosis. |
| Globe or CNS abnormality | Microphthalmos, anophthalmos, enucleated eye, amblyopia. |
| Not examined (can see 6/18) | Mark if the patient has vision of 6/18 or better in this eye and there was no indication to examine. |

Once the disorders and underlying causes have been marked for each eye, an assessment is made of the principal cause of low vision in the person.

If the VA is 6/12 or better, or if the loss of vision after surgery is caused by another condition than cataract surgery, mark ‘Not applicable, can see 6/12’.

**Referral: All children with a treatable eye condition must be referred for appropriate treatment.**

# Hearing Impairment

**Tool:** World Health Organisation Ear and Hearing Disorders Survey Protocol [[1](#_ENREF_1)] available at <http://whqlibdoc.who.int/>

**Equipment needed for screening:** OAE machine; Field Audiometer with noise-cancelling headphones; consumables for machines (batteries, disposable tips, plastic sleeve and couplers for OAE); alcohol gel for cleaning

**Equipment needed for examination:** Otoscope

Note: Whilst this is the recommended methodology according to the WHO; OAE and PTA screening equipment is expensive. If this equipment is not available to you, functional hearing tests have been developed by authors such as Prescott et al. [[3](#_ENREF_3)]. These have shown low sensitivity however, and should be used with caution. Please also ensure if using OAE and PTA to make sure machines are tested and calibrated in advance of usage as per manufacturer guidelines.

## Hearing Screening

1. OAE Screening

Before leaving your central location:

* Make sure the OAE machine is fully charged.
* Visually inspect the coupler tubes for damage. A blocked sound delivery tube may prevent the OAE reader from achieving its target level and prevent testing. If damaged, replace.
* Fit the plastic sleeve to maximise the hygienic protection of the OAE reader.

Weekly checks:

The probe should be tested in the test cavity once a week as per the weekly checks referenced in the OAE user manual. Full details on performing these checks are given in the manufacturer’s manual and checks should be logged in the OAE Screen Logbook.

In the Field:

Connecting the probe:

* The probe plug contains a key that must be aligned to the “key way” in the probe socket on the machine. The arrow at the front of the probe plug indicates the position of the key and should be aligned with the front of the machine. You will be able to feel when this is aligned. DO NOT force the probe into the machine.
* When screwing and unscrewing the probe, always use the riveted base, and not the smooth metal of the main probe body. This could damage the probe and the machine.
* Remember to remove the probe each night and reattach it each morning

Choosing the location to conduct the screen:

* Make sure that you are in a quiet area of the screening camp, without background noise or distraction.

Beginning the OAE screen:

* Make sure that the participant is comfortable and settled.
* Ensure that you can clearly see the ear to be tested.

IMPORTANT NOTE: Do NOT attempt an OAE screen on any participant with a discharging ear. This can damage the probe. Instead, mark the OAE screen as “Not Done” and refer the participant to the audiologist/ENT to have the discharge removed.

Selecting the appropriate tip:

* Each participant must be measured so that a disposable tip to fit their ear can be placed on the probe before testing.
* This must fit the ear so that it blocks out background noise and strengthens the OAE signal.
* Check the ear for size and make sure that there is no debris or discharge. If debris gets into the probe, the couplers must be changed immediately.
* The correct size tip will look slightly larger than the ear canal and should fit snugly, forming a complete seal with the ear canal wall.
* Gently place the tip onto the probe before attempting to fit into a participant’s ear.
* Tips must be used ONCE only and then discarded

Fitting the probe for newborns:

* Gently lift the pinna upwards, away from the baby’s head, and then towards the back of the head. This will open the ear canal. Insert the probe at approximately 10 o’clock (left ear) and 2 o’clock (right ear).
* Turn the probe ear piece to 12 o’clock
* Hold the probe for several seconds. Then release the pinna and let go of the probe.

Fitting for older children:

* Line up the probe to 7 o’clock (left ear) or 5 o’clock (right ear).
* Push the probe firmly into the ear canal at this angle
* Hold the probe for several seconds, then release the probe.

NOTE: This should not feel painful for the participant. Use the probe cable clip to support the weight of the cable so that it cannot accidentally be pulled out. Do not clip it so tight that the participant cannot move his or her head. The probe should stay in the ear independently if the correct tip is used. If the participant is restless, you can gently hold the probe in the ear.

Conducting the Test:

* Select “Test” on the machine.
* Ensure that the “Check fit” screen shows the appropriate size ear canal detected. The smallest circle represents the smallest ear canal (i.e. a baby) and the largest a full grown adult. The coloured circles should correspond approximately to the age of the participant. If not, check the probe for fit.
* Also check that the “Check fit” screen shows the shaded bar BELOW the horizontal line that indicates a Noise Reject Level.
* Once the “Check Fit” message is shown, indicating that the probe is the right fit and the noise levels are appropriate, press “Start”.
* If the message “Stim out of range” is shown, check probe fit again.

What to do if you cannot get a reading:

* Remove the probe and inspect the probe tip. Discard the tip if it has collected debris or moisture.
* Check the probe coupler tubes. If these are not clear, replace these.

RESULTS:

* A large tick and the words “DPOAE Pass” will appear on the screen if the ear passes.
* If “No Valid OAE” or “Too Few Bands” are shown, the ear fails
* If any other message, including “Noisy”, “Poor Probe Fit” or “Stopped Too Soon” is shown, then you do not have a reading and must re-test the ear. Refer to manufacturer manual for more.

Remember that each coupler should be replaced after 40 uses to prevent contamination, or immediately if contamination occurs

If PTA is not needed, take the participant back to the fieldworker in charge of registration.

2. Pure Tone Audiometry Screening

It is essential that Pure Tone Audiometry is completed in a quiet, distraction free environment.

Fill in the audiogram readings in PENCIL first, in case the fifth reading (return to 1KZ) does not correspond with the first 1KZ reading, and the test needs to be repeated. If the 1KZ readings do not match, erase the scores and re-test.

Calculation of the participant’s final hearing threshold is the average score over 1, 2, 4 and 0.5KZ in each ear. A participant screens positive if this average score is above 35dBa.

Before you begin:

* Self calibration should be done by two members of field team (same two) each morning to check for errors. If any change immediately replace batteries

Conducting PTA:

* Do all of one ear first, starting at the highest frequency, then second ear
* Must calculate averages in field to find average hearing loss over different frequencies (note, only count 1KZ once)
* Always use puretone, never warble
* Be very careful whilst swabbing that no liquid gets into the headphones.
* Swab between each use
* PTA and OAE MUST take place in quiet room with low sound (below 45dBA).
* Participant must be facing away from PTA machine

## Hearing Examination

**Basic Ear Assessment**

Perform a basic ear assessment using the video otoscope (with the video turned on, if using a video otoscopde) on each participant, and record on the form an ‘x’ for either no, yes, or not examined for each area. “Not Examined” should only be marked if it is physically impossible for you to examine that part of the ear.

**I.Ear Pain** If the subject (or parent or guardian) reports any ear pain related to the external ear, ear canal or mastoid region, this should be marked yes.

**II.Auricle I**f the Auricle has evidence of sinuses, unusual shaped cartilages or is very small or missing, mark an ‘x’ in the “M” box (M meaning Malformation). Mark an ‘x’ in the “N” box for Normal if the auricle is of normal appearance without any evidence of sinuses or pits.

**III.External Ear Canal**

**Inflammation:** If there is any redness or tenderness of the ear canal, mark an ‘x’ in the Yes box for inflamed. If not inflamed, mark an ‘x’ in the No box.

**Wax:** If unable to view the ear canal because of wax either soft or hard, mark an ‘x’ in the Yes box for wax. If there is no wax, mark an ‘x’ in the No box.

**Removed?** Mark whether or not wax was removed

**Foreign Body:** If a foreign body is visible in the ear canal, mark an ‘x’ in the Yes box for foreign body. If there is no foreign body, mark an ‘x’ in the No box.

**Removed?** Mark whether or not foreign body was removed and whether the ear canal can now be visualised

**Otorrhoea:** If there is evidence of any pus, mark an ‘x’ in the Yes box for pus. If there is no pus, mark an ‘x’ in the No box.

**Removed?** Mark whether or not otorrhoea was removed and whether the ear canal can now be visualize

**Fungi:** If there is evidence of fungi, mark an ‘x’ in the Yes box for fungi. If there is no fungi, mark an ‘x’ in the No box.

**Normal:** If the ear canalis present and has no abnormalities mark an ‘x’ in the Yes box for normal. If there is any abnormality, mark an ‘x’ in the No box. If there is an abnormality not listed in B.VI Others, and leave this box blank.

**IV. Ear drum**

**Perforation:** If there is evidence of a perforation, mark an ‘x’ in the Yes box for perforation. If there is no perforation, mark an ‘x’ in the No box in the appropriate box. If there is any doubt, even after ear toilet, leave blank.

**Dullness or retraction:** If the ear drum is dull or retracted and the light reflex is poor mark an ‘x’ in the Yes box for dullness or retraction. If there is no dullness or retraction, mark an ‘x’ in the No box

**Red and Bulging:** If there is evidence that the ear drum (tympanic membrane) is tense and bulging  **and** the drum mucosa appears red, poor mark an ‘x’ in the Yes box for red and bulging. If there is no redness and bulging, mark an ‘x’ in the No box. NB These signs, when seen together with ear pain are indicative of the Acute Otitis Media

**Normal:** If there is a good view of the Tympanic Membrane and it appears normal, mark an ‘x’ in the Yes box for normal. If there is any abnormality, mark an ‘x’ in the No box. If there is an abnormality not listed in B.VI Others, and leave this box blank.

**V. Middle Ear**

**Otorrhoea:** If, on otoscopy, there is definitely Otorrhoea within the middle ear mark an ‘x in the Yes box for Otorrhoea. If there is no otorrhoea, mark an ‘x’ in the No box.

**Normal:** On examination, if there is evidence that the middle ear is not inflamed and malleus handle is in the correct position,mark an ‘x’ in the Yes box for normal. If the middle ear cannot be seen for any reason (including because the drum is intact), mark the “Not Examined” box.

**VI. Others**

If there is any other abnormal finding related to any part of the ear or mastoid region mark an ‘x’ in the Yes box for Others and specify these findings in the space provided.

**VII Additional Information**

**1. T**ick the appropriate box according to how long the subject has had difficulty hearing.

**2.** Tick the appropriate boxes according to whether any of these first degree relatives have difficulty hearing.

1. **Cause of Ear Disease and Hearing Impairment**

|  |  |  |
| --- | --- | --- |
| **Normal ear and normal hearing** | | Mark this if there are completely normal findings for the ear and for hearing. The **definition of normal hearing,** for the purposes of this section, is that in section B(I) at least one 'Yes' box is ticked. |
| **Ear Disease** | |  |
|  | **Wax** | Tick if occluding or impacted wax has been found (whether or not it has been removed) |
|  | **Foreign Body** | Tick if a foreign body has been found (whether or not it has been removed) |
|  | **Otitis Externa** | Tick only if EAR PAIN and INFLAMMATION EXTERNAL EAR CANAL have been ticked |
|  | **Acute Otitis Media** | Tick only if EAR PAIN, EAR DRUM RED AND BULGING and **NO** PERFORATION have been ticked |
|  | **CSOM** | Tick only if **NO** EAR PAIN, OTTORRHEA OF EXTERNAL EAR CANAL and/or OTTORRHOEA OF MIDDLE EAR and PERFORATION |
|  | **Serous Otitis Media** | Tick only if **NO** EAR PAIN, PERFORATION, **NO** OTORRHEA OF EXTERNAL EAR CANAL and **NO** OTORRHEA OF MIDDLE EAR |
| **Infectious Diseases** | | Further information should be obtained (by questioning or otherwise) from subjects with deafness or hearing impairment to ascertain if there is any history of a particular infectious illness present prior to deafness.  E.g. Rubella, TB, Meningitis, Malaria |
| **Genetic Conditions** | | Further information should be obtained to try to establish if there are any physical characteristics which are unusual and are observed on the subject. If the hearing loss is thought to be due to a genetic condition, the appropriate box should be ticked and the disorder specified in the space provided.  E.g. craniofacial or skeletal disorders, changes in skin pigmentation, cardiovascular abnormalities |
| **Non-Infectious Conditions** | | Further questions of those with a deafness or hearing impairment should be asked to establish whether there is any medical or occupational reason for this hearing loss.  E.g. Diabetes, Thyroid Disease, Pituitary Disease, Exposure to loud noise over period of time |
| **Undetermined or other cause** | | Tick if the subject has deafness or hearing impairment but the cause has not been determined |

**Action Needed**

This Section is included in order to assess resource requirements. Therefore, the examiner should determine what action is needed according to what is best for the subject, whether or not that action is available for the population.

The examiner should then tick the appropriate box having considered all the information collected in the questionnaire.

|  |  |  |  |
| --- | --- | --- | --- |
| **I** |  | **No action needed** | There is no obvious reason for further treatment. |
| **II** |  | **Action needed** |  |
|  | **1.** | **Medication** | Subject has an infection or metabolic condition that requires treatment. |
|  | **2.** | **Hearing aid** | Subject has a significant hearing loss and the hearing requires amplification for day to day communication. |
|  | **3.** | **Language/ Speech rehabilitation** | There is obvious delay or abnormal speech which may be the result of hearing impairment and speech therapy might be able to improve speech |
|  | **4.** | **Special needs education** | There is obvious developmental delay either physically or mentally which requires specialised help. |
|  | **5.** | **Vocational Training** | The subject has significant hearing loss without any physical limitations and requires help in seeking appropriate employment |
|  | **6.** | **Surgery Referral** | Examination shows evidence of an infective process or significant middle ear effusion, and if surgical correction of this process would clear up infection and/or improve hearing, this should be marked as requiring **non-urgent surgery**. |
|  |  |  |  |
|  |  |  | If the subject has a significant persistent temperature and evidence of cerebral involvement or evidence of active cholosteatoma in the attic region of the middle ear the subject should be marked as requiring **urgent surgery**. |
|  | | |  |
| Any Additional Remarks | | | Any additional useful comments |

1. Physical Impairment and Epilepsy Screening

**Tool:** Rapid Assessment of Muscular-Skeletal Impairment[3] available from ICED

**Equipment needed for screening:** none

**Equipment needed for examination:** 12m rope, cup, bowl, coin, stopwatch

## Physical Impairment Screening

1. Fill in whether or not the MSI screen is being filled in by the individual or a proxy. Proxies will be answering for all children under the age of 8, or any other participant not able to communicate independently.
2. Ask the 6 screening questions related to difficulty using musculoskeletal system, use of a mobility aid, body parts considered misshapen or experience of seizures
3. Mark 1 (yes) to the question ‘MSI Exam needed’ if:
   1. Person responds yes to any of the 6 questions AND reports that the condition has lasted >1 month or is permanent. OR
   2. Person responds yes to any of the 6 questions AND reports that the condition is irreversible. OR
   3. Person responds yes to any of the 6 questions AND they are aged less than 1 month.

If person does not meet any of above criteria mark 0 (no) to the question ‘MSI Exam needed’

1. Go to section C of the Screening Questionnaire cover sheet. Record whether MSI questions were completed and whether or not the person screened positive
2. If you have marked “MSI exam needed”, take the participant to the team physiotherapist for examination. If you have NOT marked “MSI exam needed”, take the participant to the next screening station for screening.

## Physical Impairment Examination and Seizure History

**Observation of Activities**

This section is a group of observations to be carried out by participants that have been determined to be a case. Explain to the participant that you will ask them to perform number of activities to observe the nature of the musculoskeletal impairment that they have. Reassure them, if needs be that none of the activities will be intrusive. Before actually asking them to perform the activity demonstrate it and ask them if they will be able to carry out the activity. You can mobilise the help of the child’s caregiver to assist you. Children often like to copy the activities of the adults around them, so if you ask the caregiver to carry out the activities as well the child may well copy them. It is appropriate to ask someone to interact with them and get them to run around and jump about just ensure that you observe them doing all the compulsory movements as stated below.

|  |  |  |
| --- | --- | --- |
| **Section C – Observation of Activities** | | |
| ***Item*** | ***Instruction*** | ***Diagram*** |
| Squat/sit bending knees: | Ask the participant to squat down. The purpose of this task is to see them flex their hips, knees and ankle joints. Some participants, particularly those that are elderly may not be able to squat, in which case it is appropriate to ask them to sit on a chair. To mark yes for this observation all participants must be able to   * flex hips to at least 900. * flex knees to at least 900.   If they cannot flex either their knees or their hips to 900, then you must mark no for this observation. | Sit  Squat |
| Stand up straight on natural legs: | Ask the participant to stand up with their legs straight. To mark yes for this observation. They must be able to   * extend their knees to 00 * extend their hips to 00.   It is important to ensure that in standing the participant is using their natural legs. If they use prosthesis then you must mark no for this observation. It is also important to see how they use their back and whether this straightens up when the stand up. If it does not you must mark no for this section again | Stand |
| Hold arms straight above head, fingers straight: | Ask the participant to raise their arms straight in the air with fingers extended. They must be able to   * extend their elbows to 00 * extend all their fingers out straight * raise their shoulder above 900 in either abduction or flexion.   If they cannot do any one of these movements full then you must mark no for this observation. | Arms Straight  Fingers Straight |

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| **Walking: The purpose of the next three observations is to see if the participant has MSI of his/her lower limbs and joints.** | | |
| Walk along 11 m rope | Lay out the 11m rope on the ground in a straight line and ask the participant to walk alongside this rope. Impress upon the participant the need to walk as normal. | Walk along 11m rope |
| Do it in less than 10 secs | At a moderate pace the participant should be able to walk this distance in 10 seconds or less. Children of 5 years and older can also walk this distance in this time, although they may have to be coaxed to walk alongside the rope. | Do it in less than 10 secs |
| Do it without limping | Observe the participants gait as they walk. Ensure that they walk without limping. Children develop a gait similar to adults at about seven years old. Before this they will | Do it without limping |
| **Left and Right Arm Function: The purpose of these observations is to see if the participant has MSI of his/her upper limbs. The observations must be completed separately for each side.** | | |
| Touch Nose | Ask the participant to use the tip of his/her forefinger to touch his/her nose. You must observe that the participant flexes his/her elbow | Touch Nose |
| Pick up a coin and put it in a cup | Ask the participant to pick up the coin, using thumb and fore/middle fingers. They must pick up the coin and place the coin into the cup. This is to observe the participants pincer grip. Place the coin in front of the participant ask them to pick it up and place it in the cup. | Pick up coin and place it in cup |
| Tip coin into a bowl | Ask the participant to pick up the cup using a full power gip and tip the coin into the bowl. Put the bowl at least 30 cm from the cup before they pick up the cup. | Pick up  cup  Tip the coin  into bowl |

**Section D: Seizure History**

This section is to gain further history of those who said yes to some form of seizure history

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| --- | --- |
| **Section D: Seizure History** | |
| **Item** | **Instruction** |
| No history of seizure. | Even if the participant answered no to the previous screening question about convulsions, involuntary movements, rigidity and loss of consciousness. Clarify with the participant that they have no history of seizure and then mark this box. If they have no history then mark not applicable for the next two questions and go to section E. |
| History of seizure | Mark this if the patient has any history of ever having had a seizure |
| Number of episodes in the last year | Ask the participant how many seizures (if any) they have had in the last year. If they have a history of a seizure in their past but have had none in the last year then mark “0” [code (1).]Do not mark “not applicable” [code (5)]. |
| Type of seizure. | Ask the participant the type of seizure they have had. Describe again absences, petit and grand mal to them. Mark convulsions if they have grand or petit mal convulsions, rigidity or loss of consciousness. Ensure that if the participant is describing involuntary movements, these are movements that they are not conscious of when they occur, and are not muscle spasms or tics which they would be aware of. |

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| **Section E: Duration and Consanguinity** | |
| ***Item*** | ***Instruction*** |
| Age at Impairment | Ask the participant how old they were when they first had their impairment. If they have a history of seizures then mark the age at first seizure. If they have no impairment then mark “No impairment” [code (7)]. |
| Consanguinity | Mark consanguinity if their parents are related. If they are second cousins or closer.  Mark no consanguinity if there is no consanguinity. |

**Section F: Aetiology**

This section is to try and determine the cause of the person’s impairment. Thus it is not a measure of what their difficulty is now, but how they came to have that difficulty in the first place. For this section you will need to ask a number of questions to determine how they cam to have the impairment.

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| **Section F: Aetiology** | |
| ***Item*** | ***Instruction*** |
| Family History | Mark this if the participant has a condition which is known to be familial and for which there is a history of a another member of their family having the same condition |
| Congenital but no family history | Mark this if the participant has a condition which is known to be congenital and may even be a familial condition but for which there is no other member of the family with the same condition |
| Perinatal Hypoxia | Mark this if the participant (or their carer) can give a history of an extended period of labour and difficulty to the person during their birth. Do not mark this if the impairment is not consistent with one that would have been developed from perinatal hypoxia. |
| ***Trauma*** |  |
| RTA | Mark this if the participant has an impairment which was a result of a road traffic accident. Mark this whether they were the passenger, the driver or the pedestrian. |
| Civil violence | Mark this if the participant has an impairment which was as a result of violence that was perpetrated outside of war violence by an individual who was not a member of their family, or the house in which they live |
| Domestic Violence | Mark this it the participant has an impairment which was as a result of violence that was perpetrated outside of war violence by a member of their family, or the household in which they live. |
| Deliberate Self Harm | Mark this if the participant has an impairment which was as a result of an injury which they deliberately inflicted upon themselves |
| Other including accidents | Mark this if the participant has an impairment which is the result of an accident which was not a road traffic accident, or if it is the result of any other traumatic injury not previously indicated. |
| Developmental/Nutritional | Mark this if the participant has an impairment which is the result of a nutritional deficiency. |
| Infection | Mark this if you can find a history of infection at the onset of the impairment that the individual has or if the problem is one that you know to have an infectious cause |
| Neoplasm | Mark this if the participant either has a neoplasm or has an impairment which is the result of a neoplasm |
| Iatrogenic | Mark this if the participant has ain impairment that is a result of medical treatment that they have received |
| Traditional | Mark this it the participant has an impairment that is a result of treatment with some form of traditional medicine (including bonesetters) |
| Unknown | Mark this if you cannot find a cause for the person impairment |
| Other | Mark this if you find a cause for the participant’s impairment which is not above. Please write what you think the cause is in the specify line. |

**Section G – History if not examined**

If the individual is not examined then from observation and conversation with relatives and neighbours as appropriate try to determine which of the following categories they may be in and mark the most likely outcome. You can use the screening questions in section B to help you determine if the absent person is MSI impaired. You can use the treatment modalities in Section M to help you determine if the absent person has had treatment

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| **Section G – History if not examined** | |
| ***Item*** | ***Instructions*** |
| Not MSI Impaired | Person is able to move around freely and is not inhibited from any musculoskeletal cause |
| MSI impaired with treatment | Has/had a Musculoskeletal impairment which is irreversible, or limits social interaction or causes pain/discomfort and has had some form of treatment for the impairment (See section L for treatment options) |
| MSI impaired without treatment | Has a Musculoskeletal impairment which is irreversible, or limits social interaction or causes pain/discomfort |
| Not applicable (examined) | Examined individual |

**Section H Structure and Function**

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| **Section H Structure and Function** | |
| **Item** | **Instruction** |
| Structure affected | Tick yes if the structure contributes to the participant’s musculoskeletal impairment. You may tick as many structures as you think are involved. If the participant has a disorder which affects them globally (e.g. cerebral palsy) then mark whole body (23). If the whole of a limb is affected do not mark the separate parts, mark the number that says whole arm or whole leg. |
| Laterality | Write in the appropriate code for which side of the body is affected  If one side of the body is affected and not the other it is often good to use the unaffected side as the reference for the affected side. |
| Nature of Change | This section is to record the detail of any structural defects that the participant may have. For this section   1. No change in structure – put in this code if you think that the structures of the affected part have not been permanently altered in any way. This may be the case if a participant has a reduced motion of the joint, but you cannot detect any structural changes in that joint of the the types described below. 2. Total absence – put this code if the whole of the structure you have marked is missing. 3. Partial absence – put this code if part of the structure you have marked is missing. In the event of a missing finger (or toe), mark hand (or foot) and then mark partial absence. 4. Additional Part – put this code if the participant has an additional anatomical structure (functioning of not). E.g. polydactyly 5. Aberrant dimensions – put this if fingers or toes are fused together, or if there is a permanent enlargement or reduction in the normal size of body part. You can also mark this if the legs are not of equal length. 6. Discontinuity 7. Deviating Position put this if the participant has a deformity such that the angel of a limb is abnormal, or if they have scoliosis or kyphosis of the spine. 8. Qualitative Changes – put this if the participant has non-permanent changes to the structure involved such as swelling, or erythema, and pain. 9. Not specified 10. Not applicable |
| Magnitude of Function Impairment | For the change you have noted above put a code into to indicate the magnitude of the impairment of the function of the structure that has occurred (not including joint mobility and stability) This section is about the magnitude of the functional impairment of the structure in question and not about how the participant functions as a whole person.   1. No impairment – put this code if you feel that the structure impairment does not affect the structures ability to function at all 2. Mild Impairment – put this code if the structure impairment does have a mild effect on the structures ability to function 5-24% 3. Moderate Impairment – put this code if the structure impairment has a moderate effect on the structures ability to function 25-49% 4. Severe impairment - put this code if the structure impairment has a severe effect on the structures ability to function 50-95% 5. Complete impairment - put this code if the structure impairment has a severe effect on the structures ability to function 96-100%. |

**Section I: Diagnosis Case Confirmation**

Some individuals may have screened as having MSI but on further examination they are found not to have. This section allows final confirmation of the status of the participant

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| **Section I: Diagnostic Case Confirmation** | |
| ***Item*** | ***Instructions*** |
| Diagnosed Case | Mark this if after completing the form for this participant you have established that he/she is a case of MSI with a potential diagnosis |
| Non-case | Mark this if, despite having screened positive for MSI, on further examination it is determined that the participant does not have MSI. If you mark this box then go directly to section N. |

**Section J: Case Severity -** Please indicate how much you think that this individuals musculoskeletal impairment affects normal bodily function and movement. Ways in which you can estimate this may be by considering the importance of the structure affected, the nature of change and how much the person can function without the function that they have lost.

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| **Section J: Case Severity –** | |
| Mild Case | If from your assessment you determine that the persons impairment has a mild effect on the ability of their musculoskeletal system to function as a whole please mark this boxe.g. polydactyly |
| Moderate Case | If from your assessment you determine that the persons impairment has a moderate effect on the ability of their musculoskeletal system to function as a whole please mark this boxe.g. club foot |
| Severe Case | If from your assessment you determine that the persons impairment has a severe effect on the ability of their musculoskeletal system to function as a whole please mark this boxe.g. quadraplegia |

**Section K: Diagnosis Decision Algorithm**

The purpose of the diagnosis algorithm is to help you come to the right diagnosis category and make the right diagnosis for the participant. Follow the questions until you come to the right category, and then once you are in the right category decide what part of the body or cause best matches the examination and history of the participant. Please tick the appropriate diagnoses and then write the codes and diagnoses in section L. You can pick up to two diagnoses.

Questions:

***Is it congenital?***

Say yes to this if the impairment that this participant has is one which is congenital or genetic, remembering that congenital does not include birth trauma and related conditions. Go to Category A.. Say no if the condition does not fit this criteria and move on to the next questions

***Is it due to trauma?***

Say yes to this if the impairment that this participant has is one which results from an injury, be it deliberate or accidental, and whether it was inflicted by the person themselves or by another individual. Go to Category B. Say no if the impairment does not fit this criteria and move onto the next question

***Is it neurological?***

Say yes to this question if the impairment is either a result of a neurological condition or its primary focus is the neurological system. Go to category C. Say no to this question if the impairment does not fir this question and go to category D – acquired non traumatic.

**Diagnosis List**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category A – Congenital/ Genetic** | | | |
| Code | Diagnosis | Definition and features of history | Treatment Suggestions |
| ***Upper Limbs*** | | | |
| A1 | Polydactyly | More than five digits on one or both hands (can also be on the feet) | Most cases need simple surgery to remove the extra digit |
| A2 | Syndactyly | Digits joined together by skin or soft tissue (can also be on the feet) | Most cases need surgery to separate the digits |
| A3 | Congenital hand deformity (not otherwise described) | Any congenital hand deformity except polydactyly or syndactyly | More complex surgery often needed to reconstruct limb |
| A4 | Congenital absence of all or part of upper limb (not otherwise described) |  | Surgery may be needed or a prosthesis |
| A5 | Other congenital abnormality of upper limb | Any congenital abnormality of hand or upper limb not already described | ? Surgery ? Prosthesis |
| ***Lower Limbs*** | | | |
| A10 | Developmental dysplasia of hip | Instability of hips or waddling gait with normal leg lengths | start treatment with an appliance but surgery needed in up to 50% |
| A11 | Proximal focal femoral deficiency | Shortening of leg above knee | usually an appliance or surgery plus a prosthesis |
| A12 | Congenital absence of all or part of Tibia | Absence of all or part of tibia, usually associated with shortening of leg and marked varus of ankle | surgery plus prosthesis |
| A13 | Congenital absence of all or part of fibula | Absence of all or part of fibula, usually associated with shortening of leg and marked valgus of ankle | surgery plus prosthesis |
| A14 | Congenital absence of all or part of lower limb (not otherwise described) |  | surgery plus prosthesis |
| A15 | Club foot | Eqinus and varus deformity of foot which is not passively correctable | physiotherapy, appliances. Minor surgery needed in most cases |
| A16 | Other congenital abnormality of lower limb | Any congenital abnormality of lower limb or foot not already described | varied, but often surgery plus an appliance or prosthesis |
| ***Upper and or Lower Limbs*** | | | |
| A20 | Amniotic bands | Constricting bands of skin around one or more digits or limbs | Surgery |
| A21 | Arthrogryphosis | Congenital deformity of joints, usually flexion at elbow and knee, ulnar tilt at wrist, and valgus hips, may have tight club foot | physiotherapy, plus surgery in say 50% |
| ***Spine*** | | | |
| A30 | Congenital deformity of cervical spine | Any congenital deformity of neck | physiotherapy, surgery in say 25% |
| A31 | Congenital deformity of thoracolumbar spine | Any congenital deformity of thoracic or lumbar spine | physiotherapy, surgery in say 50% |
| ***Head and Neck*** | | | |
| A40 | Cleft lip | Unilateral or bilateral defect in continuity of upper lip, with intact palate | Surgery |
| A41 | Cleft lip and palate | Unilateral or bilateral defect in continuity of upper lip, with associated defect in palate | Surgery |
| A42 | Other congenital deformity of head or face (not otherwise described) |  | surgery unless minor |
| ***General*** | | | |
| A50 | Multiple congenital abnormalities | Congenital abnormalities in more than one site, not including polydactyly | nothing if gross, may need surgery if any are correctable, plus may need appliances, wheelchair etc |
| A51 | Sickle cell disease | Known diagnosis of sickle cell disease | medical care, walking aid |
| A52 | Osteogenesis imperfecta | History of several fractures and irregular deformity of one or more limbs | surgery, physiotherapy, walking aid, wheelchair |
| A53 | Haemophilia | History of excessive bleeding or bruising after minor injury | medical care |
|  | | | |
| **Category B - Infective** | | | |
| B1 | Joint infection | Loss of function of joint associated with history of swelling and fever or discharge | surgery, physiotherapy |
| B12 | Bone infection - Limb | Pain and or deformity in limb associated with fever, or abscess or discharge of pus | surgery, physiotherapy |
| B13 | Bone infection – Spine (not old TB) | Pain and or deformity in spine associated with fever, or abscess or discharge of pus | surgery, physiotherapy |
| B13 | Skin / Soft tissue infection / cellulites | Infection of skin or soft tissue including wound infection and ulcers | surgery, physiotherapy |
|  | | | |
| **Category C – Acquired Traumatic** | | | |
| ***Burn*** | | | |
| C1 | Burn/Burn contracture | Burn scar of skin or soft tissue causing deformity | severe needs surgery and physiotherapy |
| ***Bone/CNS Injury*** | | | |
| C10 | Fracture non union | Un-united fracture more than six months since injury | Surgery |
| C11 | Fracture mal-union | Fracture healed with deformity e.g. shortening or angulation | surgery and physiotherapy |
| C12 | Spinal injury | Spinal injury resulting in deformity and/or neurological deficit | physiotherapy, surgery, wheelchair |
| C13 | Head injury | Head injury resulting in neurological deficit | physiotherapy, wheelchair |
| ***Joint Injury*** | | | |
| C20 | Recurrent or chronic joint dislocation | Joint dislocation that remains unreduced or regularly re-dislocates | surgery, physiotherapy |
| C21 | Post traumatic joint stiffness | Joint trauma resulting in loss of movement | Physiotherapy |
| ***Soft Tissue/PNS Problem*** | | | |
| C30 | Tendon problem | Tendon injury or pain | physiotherapy, surgery |
| C31 | Muscle / soft tissue problem | Muscle or soft tissue injury or pain | Physiotherapy |
| C32 | Peripheral nerve problem | Peripheral nerve dysfunction or pain following injury | physiotherapy, surgery |
| ***Loss of Limb*** | | | |
| C40 | Amputation | Loss of all or part of a limb due to accident or surgery | physiotherapy, prosthesis |
| ***Other*** | | | |
| C50 | Other Trauma | Any other traumatic injury not previously described |  |
|  | | | |
| **Category D – Neurological** | | | |
| D1 | Epilepsy | 3 or more seizures / convulsions not associated with fever | medical care |
| D2 | Leprosy | Known diagnosis of leprosy | medical care, surgery if reconstruction a possibility |
| D3 | Developmental delay | Delay in normal development of locomotor skills with normal body and limb structure | physiotherapy, walking aids, appliances, maybe a wheelchair |
| D4 | Cerebral Palsy – spastic | Poor movement control in limb or limbs associated with spasticity | physiotherapy, walking aids, appliances, maybe a wheelchair |
| D5 | Cerebral Palsy – other | Poor movement control in limb or limbs without spasticity | physiotherapy, walking aids, appliances, maybe a wheelchair |
| D6 | Paraplegia | Inability to walk due to marked weakness or paralysis in both legs, but normal arms | physiotherapy wheelchair |
| D7 | Hemiplegia | Marked weakness or paralysis in arm and leg on same side | physiotherapy, walking aids, appliances, maybe a wheelchair |
| D8 | Quadriplegia | Inability to walk due to marked weakness or paralysis in both legs, associated with weak or paralysed arms | physiotherapy, wheelchair, institutional care |
| D9 | Facial weakness | Weakness of muscles of face | physiotherapy / rehab |
| D10 | Peripheral nerve palsy | Weakness due to single nerve lesion e.g. unilateral foot drop or wrist drop | physiotherapy, appliance (splint if motor loss) may benefit from surgery in say 50% cases i.e. tendon transfer |
| D11 | Polio | known polio infection | physiotherapy, appliances, surgery |
| D12 | Other neurological | Sensory or motor deficit not already described, including muscular dystrophy | Physiotherapy |
|  | | | |
| **Category E – Acquired non Traumatic** | | | |
| ***Joint*** | | | |
| E1 | Degenerative joint disease | Loss of function of joint associated with reduced movement, crepitus, osteophytes, and often old age | physiotherapy, surgery |
| E2 | Non infective non traumatic joint disease | Loss of function of joint not associated with fever or trauma or old age | Physiotherapy |
| E3 | Bow legs | Gap of more than 10 cm between knees when ankles together | surgery, physiotherapy orthosis |
| E4 | Knock knees | Gap of more than 15 cm between ankles when knees together | surgery physiotherapy orthosis |
| E5 | Other joint or limb deformity | Joint or limb deformity not otherwise described | may need surgery orthosis or physiotherapy |
| ***Bone*** | | | |
| E11 | Bone tumour | Firm swelling of bone - benign or malignant | Surgery |
| E15 | Hydrocephalus | Head much larger than normal | Surgery |
| ***Skin/Soft Tissue*** | | | |
| E21 | Skin / Soft tissue tumour | swelling of soft tissue - benign or malignant | surgery, physiotherapy |
| ***Spinal*** | | | |
| E40 | Spinal deformity - kyphosis | Acquired deformity of spine with increase in kyphosis | surgery, physiotherapy, appliances (brace) |
| E41 | Spinal deformity - lordosis | Acquired deformity of spine with increase in lordosis | surgery, physiotherapy, appliances (brace) |
| E42 | Spinal deformity - scoliosis | Acquired deformity of spine with increase in lateral curvature | surgery, physiotherapy, appliances (brace) |
| E43 | Spinal pain limiting function | Spinal pain limiting function but not associated with significant deformity | surgery, physiotherapy, appliances (brace) |
| E44 | TB spine | Known TB spine | surgery, physiotherapy, appliances (brace) |
| ***Miscellaneous*** | | | |
| E50 | Limb pain limiting function | Limb pain limiting function, but no structural change | medical care i.e. other |
|  | | | |
| E70 | Other acquired non traumatic condition |  |  |

**Section L: Case Diagnosis**

For up to 2 diagnoses please fill in a code and write the diagnosis on the sheet

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| --- | --- |
| **Section L: Case Diagnosis** | |
| ***Item*** | ***Instructions*** |
| Case Diagnosis | Identify the diagnosis that you think this participant is most likely to have and write it in here. If you are not sure as to what the diagnosis is but you know what category it falls into then write down the category |
| Diagnosis Code | Write the code for the diagnosis that you have written above. |

**Section M: Treatment Information**

This section is to establish what services and management the participant has already received and what they might need in the future. Please ask them if they have received services, treatment or management for their impairment. If they have then, read the list to them and describe to them what they mean, so that they can tell you which they have had. Treatment does not include home management from a member of their household or a neighbour unless that individual is a healthcare professional. Indicate which form of treatment you think will be the most appropriate to improve their function. The most appropriate is not to be determined by what services are currently available, but what this patient needs to receive if all forms of service listed were readily available. When completing this section please make sure that you mark yes for all those had/needed and no for all those that are not

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| **Section M: Treatment Information – Previous Treatment** | |
| ***Item*** | ***Instructions*** |
| 1. None: | If they have had no form of therapy please indicate with this option. This option also applies if the only treatment they have had is form a member of their household or their neighbour who is not a healthcare professional |
| 1. Medication | Mark this option if they have been given some form of medication by a healthcare professional to treat the impairment they have |
| 1. Plaster/Splintage | Mark this option if thy have been treated with plaster or with some other form of splintage immobilisation to treat their musculoskeletal impairment. |
| 1. Physiotherapy | Mark this option if they have had physiotherapy, either by a physiotherapist, or a physiotherapy assistant. This can have happened in a rehabilitation/CBR centre, a health centre, a hospital or in their home. |
| 1. Special Seating | Mark this option if they have had special seating made for them to help with their musculoskeletal impairment. |
| 1. Mobility Aid: | Mark this option if they have had or presently have any aid to help or enable them to walk, because of their impairment. This includes walking stick, crutches or walk |
| 1. Tricycle: | Mark this option if they use a tricycle to enable them to be mobile,. because of their musculoskeletal impairment |
| 1. Appliance: | Mark this option if they use an appliance to enable them to carry out there daily activities, because of their musculoskeletal impairment |
| 1. Orthosis: | Mark this option if they have had some form of orthotic prosthesis made for management of their musculoskeletal impairment |
| 1. Prosthesis: | Mark this option if they have an artificial limb. because of their musculoskeletal impairment |
| 1. Wheelchair: | Mark this option if they have a wheelchair to enable them to be mobile, because of their musculoskeletal impairment |
| 1. Surgery: | Mark this option if they have received surgery for their musculoskeletal impairment. |
| 1. Permanent Care: | Mark this section if the individual has ever been placed into long-term care , in a hospital or an institution, to treat or to manage their musculoskeletal impairment, |
| 1. Traditional Medicine | Mark this section if the participant has attended for some form of traditional medicine, or has been given some form of traditional medicine in treatment of their musculoskeletal impairment |
| 1. Other: | Mark this if the individual has some other form of treatment and write the treatment down where it says specify. |
| **Section M: Treatment Information – Needed Treatment** | |
| ***Item*** | ***Instructions*** |
| 1. None: | Mark this option if you do not think that this individual needs any treatment, appliances, mobility aids, wheelchair, surgery, physical therapy or prosthesis |
| 1. Physiotherapy: | Mark this option if you think that the most appropriate form of therapy that could achieve the most realistic recovery for this participant is physiotherapy (of any intensity) |
| 1. Medication | Mark this option if this person needs medical care and pharmological management as the main part or as part of their therapy for their musculoskeletal impairment |
| 1. Plaster/Splintage | Mark this option if the participant need some form of immobilisation /splintage of their limb as part of the management for their musculoskeletal impairment. |
| 1. Special Seating | Mark this option if they need special seating made for them to help with their musculoskeletal impairment. This may be particularly in the case of children with cerebral palsy for whom seating may help with their positioning and movement control. |
| 1. Mobility Aid: | Mark this option if you think this participant needs a mobility aid for their musculoskeletal impairment |
| 1. Tricycle: | Mark this option if you think this participant needs a tricycle for their musculoskeletal impairment. This is particularly useful for individuals who need to be very mobile as they can function well over hills and bumps and can be more manoeuvrable than wheelchairs. |
| 1. Appliance: | Mark this option if you think this participant needs an appliance for their musculoskeletal impairment |
| 1. Orthosis | Mark this option if you think this participant could use a show insert as part of their management. This may, for example, happen after corrective surgery |
| 1. Prosthesis: | Mark this option if you think this participant needs a prosthesis for their musculoskeletal impairment |
| 1. Wheelchair: | Mark this option if you think this participant needs a wheelchair for their musculoskeletal impairment |
| 1. Surgery: | Mark this option if you think this participant needs surgery for their musculoskeletal impairment |
| 1. Permanent Care: | Mark this option if you think this participant and their family would benefit from having the participant placed into permanent care, or if you think that this participant will need permanent care at home by a family member. |
| 1. Other: | Please mark this if there is another form of treatment that this participant should have and if so please specify what it is |

**Section N. Why I have not had (further) treatment?**

This section is to try and understand the barriers to already existing services that exist in Rwanda. In this section you can only tick one answer so you have to try and find out the most dominant reason that the participant has not yet sought treatment or has not sought further treatment. If they have not sought treatment at all you must fill in this section and if there is treatment needed for which you know there are services available, but the participant has not had then you must also give a reason in this section. If they have had full treatment available then mark not applicable.

|  |  |
| --- | --- |
| **Section N. Why I have not had (further) treatment?** | |
| Unaware of Impairment | Please mark this reason If the participant or their carer were unaware of their impairment |
| Believes it to be a curse | Mark this if the participant believes their impairment to be the result of a curse or some other form of witchcraft |
| Services not available or very far | Mark this if the participant believes that the services are not available or a far (even if this is not the case) |
| No / delayed information about services | Mark this if the participant has heard of services but felt the information came too late for them to do anything about this. Also mark this if the participant has not heard of any services |
| Cannot afford treatment | Mark this if the primary reason for the participant not attending for services is financial restraint |
| No one to accompany | Mark this if the main reason the participant has not attended is because no one is able to attend with them |
| No time available / other priorities | Mark this if the main reason that the participant has not attended is because of not having available time or feeling that other things take priority over their impairment |
| Old age and need not felt | Mark this if the main reason for the participant not attending is believing that because of their old age there is not need to have any treatment for their condition. |
| Adequate function / need not felt | Mark this as the main reason for not attending if the participant is aware of their impairment and aware of possible treatment but felt that the function they have ate present is adequate and therefore there is no need to attend. |
| Fear of treatment | Mark this as the main reason for not attending if the participant is aware of their impairment and aware of possible treatment but is afraid of attending (for what ever reason that fear might be) |
| Not applicable (has had treatment) | Mark this if you think the participant has all had all treatment reasonably presently available to them. |

1. Cognitive Impairment Screening

**Tool:** Malawi KIM Cognitive Impairment Screen

**Equipment needed for screening:** None

This reported screen was developed as part of KIM Malawi[[4](#_ENREF_4)].

It should only be administered by a clinical professional familiar with paediatric cognitive impairment, such that the clinician can probe caregiver responses to ascertain likelihood of impairment.

Clinicians should be careful only to ask age-appropriate questions as clearly stated on the questionnaire.

1. Carefully copy the participant’s Camp and ID Number onto the top of the page. This is in case the pages get separated, so that we can still use the data.
2. Write your own Interviewer ID Number in the space provided.
3. Ask each question relevant to the child’s age. All questions should be asked to the caregiver, regardless of the child’s age
4. Probe any “no” answers to ensure that the response is in relation to cognition and not other factors (e.g. literacy)
5. Any child who’s caregiver answers “no” to at least 3 questions should be considered as having a potential moderate/severe cognitive impairment, alongside any child who the clinician determines through professional judgement to have a cognitive impairment (including any child who has Down’s Syndrome, microcephaly or hydrocephaly)
6. Provisional diagnoses should be entered in the space provided and all children with suspected cognitive impairment should be referred for follow up.

Tool References:

1. Smith, A. and I. Mackenzie, *WHO Ear and Hearing Disorders Survey Protocol*. 1999, World Health Organisation.

2. Kalua, K., et al. *Findings from a rapid assessment of avoidable blindness (RAAB) in Southern Malawi*. 2011 [cited 6 101285081]; 4:[e19226]. Available from: <http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=medl&NEWS=N&AN=21547074>.

3. Prescott, C., et al., *An evaluation of the'voice test'as a method for assessing hearing in children with particular reference to the situation in developing countries.* International journal of pediatric otorhinolaryngology, 1999. **51**(3): p. 165-170.

4. International Centre for Evidence in Disability (ICED), *The Malawi Key Informant Child Disability Project Report*. 2014, London School of Hygiene and Tropical Medicine: London, UK.