BEST PRACTICE GUIDELINES

FOR THE IDENTIFICATION, ASSESSMENT, AND REFERRAL OF CHILDREN WITH VISUAL IMPAIRMENTS IN THE NORTH WEST REGION OF CAMEROON

PREPARED BY

NORTH WEST BEST PRACTICE IN VISUAL IMPAIRMENT GROUP

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GUIDELINE TITLE:

Best Practice Guidelines for the identification, assessment and referrals of children with visual impairments in the North West Region of Cameroon

This guideline was developed by the NWR Best Practices in Visual Impairment Group who came together specifically for the purpose of creating the guideline.

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Guidelines Status: The first version of the guidelines was developed over 2009-2011 and draft guidelines shared in 2012. Revisions were made in 2012 and 2013. These guidelines can be added to and developed further based on interest, need and availability of persons to do so.

Source of Funding: SEEPD Program of the Cameroon Baptist Convention Health Board, the Bamenda Coordinating Centre for Studies in Disability and Rehabilitation (BCCSDR), and ICDR-Cameroon of the University of Toronto.

Scope

Objectives: To provide best practice recommendations for identification, assessment, placement, referral, and follow-up for children with low vision and blindness, birth to 18 years in community settings.

Not included:
These guidelines do not include a full medical assessment which would be done by an eye doctor Interventions and treatments for these children are not included in these guidelines; they would be addressed in another guideline (yet to be developed).

Clinical and educational problem includes
Identification, assessment, placement and basic follow-up for children with a visual acuity less than 3 m, or with peripheral vision of less than 10 degrees in the better eye.

Current Situation and Problem:
There is currently a lack of assessment and intervention/visual stimulation centers in the North West Region. As one step toward improving services, these guidelines are intended to guide community based workers to identify and assess children in places like schools and homes.

Rehabilitation Settings in which the guidelines are intended to be used

Schools, Hospitals (Eye Dept), CBR Programs, Low Vision Centers, Ministry of Social Affairs, Non-governmental organizations working with children.

Target Population:
Newborns and infants, children (3-12 years), adolescents (13-18 years)

Intended Users of the guidelines
Teachers, Doctors, Nurses, CBR Workers, Low Vision Therapists, Community and NGO workers, other health and social services workers, Ministries such as Ministry of Social Affairs, Ministry of Public Health, Students in all relevant discipline, including all teacher training colleges in the region.

Methodology

Method used to collect evidence: Evidence was collected using a search of the following electronic databases,

1. Google Scholar (http://scholar.google.co.uk/)
2. The CIRRIE database of International Rehabilitation Research (http://cirrie.buffalo.edu/search/index.php)
3. National Guideline Clearing House (http://www.guidelines.gov)
4. Guidelines International Network (http://www.g-i-n.net)
5. Scottish Intercollegiate Guidelines Network New Zealand Guidelines Group (http://www.nzgg.org.nz)
6. Sightsavers?
7. Other databases about visual impairment?

Search words entered: best practices, visual impairment, blindness, identification, assessment, Africa, Cameroon.
During the search, we identified a 'clinical practice guideline' on assessment and intervention for persons with vision impairment developed by health authorities in the USA, the New York State Department of Health. This document was used for referencing considering the recommendations that would appropriately match the Cameroonian context.

Method used to select evidence: To ensure that the evidence selected and reviewed was related to the scope statement, a brief review of the retrieved documents abstract and discussion/conclusion was done to ensure content of the evidence related to identification, assessment, and/or referral to appropriate centres (e.g. educational, medical/rehabilitation). Another consideration for selection of appropriate evidence was to select articles relating to practice in Africa or similar contexts.

Method used to assess the quality and strength of evidence: Each piece of evidence was categorized according to the levels listed below. During the literature search, a variety of evidence with the highest strength was sought out, however, in reality, there seems to be a scarcity of rigorous literature (Level A or B) on the African context and practices for identifying and supporting persons with visual impairments. Many of the articles deemed appropriate and included as part of these guidelines classified in Level C and D.

Level of evidence	**Type of evidence**
A	Strong recommendation. Evidence from randomized controlled trials or meta-analyses of randomized controlled trials. Desirable effects clearly outweigh undesirable effects, or vice versa.
B	Single randomized controlled trial or well-designed observational study with strong evidence; or well-designed cohort or case–control analytic study; or multiple time series or dramatic results of uncontrolled experiment.
C	At least one well-designed, nonexperimental descriptive study (e.g., comparative studies, correlation studies, case studies) or expert committee reports, opinions and/or experience of respected authorities, including consensus from development and/or reviewer groups.
D	Expert opinion, formal consensus

Method for formulating recommendations: A comparison table was developed using the below format to help determine appropriate recommendations to make. The idea of this table was to compare current practices identified in the North West Region as per the scope statement (e.g. identification, assessment, and referral to appropriate centres) to recommendations made in the literature on those areas, while ensure that levels of evidence of articles for each recommendation is noted and considered.

Comparison Table

Current practices	**Recommendations from Evidence**	**Author and Level of Evidence**
1. Identification		
2. Assessment		
3. Referral to appropriate centers (e.g. medical/ rehabilitation and educational)		

From the findings of this table a discussion arose within each of the 3 areas of the scope statement. Recommendations were discussed in terms of feasibility within the local context considering the existing and potential resources at hand and possibilities appropriate to the context. Based on this the first draft of the guidelines was developed.

Method of guideline validation: The first draft of the guidelines underwent further two-steps of validation, expert and practitioner review.

1. Expert Review: Members of the group who developed these guidelines were experienced practitioners and leaders in the field of supporting children with visual impairment in the North West Region of Cameroon. To further validate the recommendations formulate by these persons, experts were sought out who could further validate and confirm appropriateness of recommendations made. Experts were deemed person who had worked in the field of visual impairment for at least a 5 year period, preferably who had produced written work (published and unpublished) in the area, who had possibly presented on the topic of visual impairment at local conferences/seminars, and lastly who had received some type of education/formal learning on the area of visual impairment to substantiate their knowledge base. Feedback of experts was incorporated to improve the content of these guidelines to produce a second draft.

2. Practitioner review: To ensure the format used to present these guidelines is user friendly, a small group of practitioners in the area of visual impairment were shown the first draft of these guidelines and ask their input on how relevant, understandable and feasible these guidelines could be in their work. Recommendations were noted and included in this final version.

Recommendations about Identification

Identification: Identification is the process of detecting a child who might have a visual impairment. If a child is identified, they should have a full visual assessment immediately / as soon as possible.

1) **The terminology used for visual impairment should be based on the WHO standards and international practices. The recommended simple classification of visual impairments uses 3 categories: low vision, severe low vision and blind.** *Low vision* is 6/18- 6/60, *severe low vision* is 6/60-3/60, *Blind* is less than 3/60 on the better eye. **[PMMSC, Level C] WHO.** Low vision can also be understood from the functional perspective: Anyone whose vision impairment affects his/her day to day functioning is said to have low vision
2) **All infant welfare clinics (IWC) should include screening for visual impairments as part of all antenatal procedures and brief parental education within the first month after birth. Routine health surveillance in young children should include eye examinations. [(**Eballe, Ellong, Koki, Nanfack, Dohvoma, & Mvogo, 2012**;** NYSDH 2007, Level C]**.** The earlier a child with a curable eye problem is detected the higher the chances of reaching normal or near-normal vision thru treatment. The older the patient and the longer time the treatment may take. [PMMSC, Level C] **Evidence: A high percentage of visual impairments in developing countries are curable or preventable, so early identification is important.** In Egypt 80% of visual impairments are avoidable. [PMMSC, Level C]). Early identification is important as it helps prevent the developmental delay since the child can be taught to adapt and compensate for their visual impairment.) [PMMSC, Level C] In Egypt, persons with low vision were identified 3 times as much as persons who are blind. In Cameroon there may be a higher prevalence of children with low vision also and appropriate focus needs to be put on correct identification of such children. **[PMMSC, Level C] WHO)**
3) **Children born with the following risk factors should be screened for visual impairment within the first month after birth:** low birth weight, premature birth, family history of blinding eye conditions (e.g. infantile glaucoma, infantile cataracts, retinoblastoma, corneal dystrophy), maternal intrauterine infections, parents who are relatives (consanguineous marriage) and mothers who used drugs, alcohol, or tobacco during pregnancy. **[PMMSC, Level C] [NYSDH 2007, Level C]**
4) **Health workers, including nurses and eye care workers, should be aware of preventable and other causes of visual impairments so that they can be identified for and treated early:** trachoma, eye infections, vitamin A deficiency, eye trauma, measles, diarrheal diseases, acute respiratory infections, protein malnutrition and harmful eye medications, parents who are relatives (consanguineous marriage) and mothers who used drugs, alcohol, tobacco during pregnancy. [PMMSC, Level C]. Worker should observe for proper lid closing because poor lid closure can lead to exposure keratitis, which leads to blind ness. Screening and assessment should therefore specifically include these risk factors.
5) **Field staff and health care workers should be able to identify cataracts in young children.** Congenital cataracts caused by infections (e.g. Rubella) have a higher prevalence in developing countries. [PMMSC, Level C]
6) **All health workers should know how to identify amblyopia and strabismus in infants and children, as this can create a better prognosis for normal eye development.**
7) **All preschools should screen children for visual impairments including amblyopia and strabismus, and should be able to make appropriate referrals for treatment.. [Eballe, Bella 2009; NYSDH 2007, Level C] [PMMSC, Level C]**

8) **Teacher training should include the basic warning signs of visual impairment.** For example, student teachers at the Government Teaching Training Colleges and the Government Technical Teacher Training college (GTTTC), and the Higher Teacher Training College, University of Bamenda in the North West Region, need to learn about basic warning signs of visual impairment in their students as part of their training.[Level D, expert consensus].
9) **There is a high prevalence of visual impairments in children who are deaf and screening for visual impairment in schools for children who are deaf is recommended.** Vision is the main learning style of children who are deaf (e.g. sign language, reading) and with visual impairments, the progress of children who are deaf is difficult. **[Oluswatoyn & Olusola 2010, Level C]**
10) **Parents concerns about the child's vision should be investigated,** however, parents usually identify child's visual problems later in childhood as the child demonstrates delays in motor and cognitive development. **[NYSDH 2007, Level C]**.
11) **There should be further studies and sensitization of the population on the dangers of traditional eye treatments.** Risk factors for visual impairments in early childhood are harmful eye practices, which are in higher prevalence in developing countries. In East Africa 20 to 25% of childhood blindness is due to the use of harmful eye medicines. **[PMMSC, Level C]**
12) **There are various questions that a parent or teacher can ask themselves to determine if a child might have a visual problem and should be made available to all new parents and teacher.** These questions are included in Appendix 1 [NYSDH 2007, Level C; Torres and Corn].

Recommendations about Assessment

Assessment – The purpose of assessment is to diagnose and classify the type of visual impairment that a child has. This level of assessment described in this guideline should be done by trained and competent CBR workers, special education teachers, and eye workers). All children with suspected or identified visual impairment should be fully assessed by an eye doctor. The full assessment done by an eye doctor is not included in these guidelines. It is also important to remember that children may need to be assessed at several points in time.

13) **The assessment process should start with looking at the needs of the whole child and the family also.** It is important to consider factors that may affect the child's performance during the assessment: overall health status, environment of assessment, child's mood and temperament (e.g. tired, sick, shy, excited). [NYSDH 2007, Level C]

14) **The person who is doing the assessment should carefully choose what assessments and assessment tools to use,** consider the effectiveness of correctly identifying the condition, the risk of harm or side effects, the ease of doing the assessment, how easy it is to reproduce the assessment, training requirements, availability of tools and human resources, acceptability of assessment by child, and cost effectiveness. [NYSDH 2007, Level C]

15) **For children under 3, the following assessments should be done**: pupil reaction to light, head turn towards a light source, blink response to light, Assessment of Visual Development (Appendix 2). A basic assessment test should include the cover test, a simple inspection for strabismus, Cardiff chart to assess the visual acuity. Parents should be included in providing information as part of the assessment process. The following assessments have not been proven effective for children less than 3 years: preferential looking, grating acuity cards, refractive screening, and photographic evaluation. [PMMSC, Level C]

16) **For children over 3 years old, a basic assessment of visual impairment should include** simple inspection, visual acuity test (could include Snellen chart, cover test), vision charts with pinhole tests and any other assessment which the assessor deems appropriate. **For children from 5 years and to 18 years** basic assessment test must include complete visual acuity using the tumbling E and Snellen chart. [PMMSC, Level C]

17) **Parents should also be included in the assessment process**.

18) **Assessment tests for amblyopia and strabismus should include**: simple inspection, visual acuity test stereovision assessments, the Landolt C, tumbling E, the Allen picture cards, Grating cards. [PMMSC, Level C]

19) **The assessment can have many parts as long as there is a competent assessor to conduct the different parts of the assessment**. The assessment cannot be done in one visit, it should be done over an appropriate period of time to gather the information. Each of the following assessment areas are described in more detail below: [NYSDH 2007, Level C]

- Eye exam findings
- Assessment of visual behavior
- Assessment of visual function
- Assessment of development
- Assessment of cognition
- Assessment of sensory and motor development
- Assessment of communication
- Assessment of self-help skills
- Assessment of social/emotional development
- Assessment of orientation and mobility

- Assessment of assistive devices
- Assessment of the family situation

20) **The assessment report should include the following eye exam findings**: visual acuity tests, red reflex test, binocular red reflex, corneal light reflex, pupillary examination, external examination of the eye, eye motility, and visual field test. [NYSDH 2007, Level C]
21) **Assessment of Visual behavior**: Parents and teachers especially can report on visual behaviors of a child that may indicate an impairment: avoiding/squinting at bright lights, staring at bright lights, closing one eye, non-directed eye moving, no response to seeing parents face, does not imitate parents facial expression, does not follow movement of objects or people, does not reach for bottle/cup when presented it, does not show interest in toys/objects that are nearby, does not show interest in television/books, bumps into objects, and often rubs/presses/pokes his/her eye. [NYSDH 2007, Level C]
22) **Assessment of Visual Function:** This assessment includes having an observer or the parent evaluate the following abilities in the child: ability to fixate on an object, shift their gaze from one object to another, scanning an area visually, tracking an object that is moving, visually directed grasp, eye movements, separating eye and head movements, spatial awareness, awareness of visual field, depth perception, observing details, matching and identifying objects, visual motor abilities, eye preference, and figure-ground discrimination. [PMMSC, Level C] [NYSDH 2007, Level C]
23) **Assessment of development:** This assessment sees if a child has developed as he/she should according to their age, it helps to identify developmental delays and help plan how the child can be progressed to catch up to children of the same age. [NYSDH 2007, Level C]
24) **Assessment of cognition:** Cognitive development depends in part on a child's cumulative and interrelated sensory experiences. Without the full use of vision to connect the sensory input, it is more difficult for the child to perceive an entire object or situation that is more apparent to sighted children. As a result, the very early development of cognitive skills tends to begin later in children with vision impairment. Cognitive skills to assess are: attention, exploration, general knowledge, spatial relationships, orientation, cause and effect, imitation, and problem-solving. [NYSDH 2007, Level C]
25) **Assessment of sensory and motor development:** Motor development is usually the most observable aspect of a young child's early development. Delays in motor development are often one of the early indicators of other problems such as vision impairment. For example, a child with significant vision impairment may have poor postural control and weak muscles due to lack of movement experiences in a variety of positions. In children with less significant impairment, delays in motor development may be more apparent later, such as delayed crawling or walking. [NYSDH 2007, Level C]
26) **Assessment of communication:** There are many aspects to communication that can be assessed. Communication is more than just speaking and listening; it includes gestures and facial expressions also. Children with severe vision impairment usually need to be taught important social cues and social behaviors such as orienting the eyes toward the person speaking or being spoken to. [NYSDH 2007, Level C]
27) **Assessment of self-help skills**: This means looking at a child is able to do feeding or eating, dressing and managing their own clothing, and personal hygiene skills such as washing, grooming, and toileting. Young children with vision impairment often do not learn personal management skills incidentally. They may not be able to see enough to watch other family members perform routine self-care activities, model age appropriate behavior, or see themselves clearly in a mirror. [NYSDH 2007, Level C]
28) **Assessment of social/emotional development**: This means looking at the child's abilities to form relationships, develop a sense of him/her self, express feelings, learn rules or

expectations, and interact socially. It involves the ability to participate in interactions with parents and later, with peers. The components of social development that are particularly important for young children with vision impairment include body awareness as a means of developing a sense of self, initiating and maintaining social interactions, imitation, and turn-taking. [NYSDH 2007, Level C]

29) **Assessment of orientation and mobility (O and M):** if a child has significant early vision loss, the O and M assessment should be done as early as 6 months to look at the child's ability to use senses to determine his/her position in the environment (orientation) and to move safely/efficiently/gracefully within one's environment (mobility). [NYSDH 2007, Level C]

30) **Assessment of assistive devices:** various assistive devices can increase the function of a child and the child needs to try to see how these devices impact the learning. Examples of devices are Braille stylus, talking calculators, talking watches, white canes, telescopes, magnifiers, and CCTVs. [NYSDH 2007, Level C]

31) **Assessment of the family situation includes the following:** families knowledge and need for information on visual impairments, family's expectation for the child, family composition presently and in the future, family demographics/education/circumstances, family values and culture, family stressors and tolerance for stress, family's support system and resources (including extended family), family interactions and style of parenting, caregiving skills and responsibility in the family, interpersonal and problem-solving styles, and non-supportive behaviors of family/friends and the community. [NYSDH 2007, Level C]

Recommendations about Referral and Follow-up

Referral and follow-up process – Referral is when the client/patient is directed to receive services from another provider or institution, such as a referral made to specialist or a school. A referral is an intervention whereby the person needing a service is identified by the health care provider who doesn't offer the service. It could also be understood as a recommendation for someone to access a specialized service for appropriate intervention.

32) **All children with suspected or identified visual impairment should be referred for full assessment by an eye doctor.** Contact numbers for the doctor should be included in the referral information, as well as the number of for the
33) **Pediatricians, general practitioners, ophthalmologists and others involved should work in close collaboration to ensure that children with visual impairments receive the best possible treatment. (**Eballe, Ellong, Koki, Nanfack, Dohvoma, & Mvogo, 2012).
34) **All children should have a referral and assessment done by an eye doctor before a referral to a school for the blind** is made, in case treatment could help the situation of the child and help them attend a mainstream school.

For children identified as having visual impairment, the following actions should be taken: [NYSDH 2007, Level C]

35) **The child should be provided with services and assistive devices appropriate to their visual impairment**. Referral to a Low Vision Centre or other facilities where the child's vision can be corrected as much as possible should be made..
36) **The child should receive education**. Discussion with the child's principal and teacher, and/or Referral to appropriate educational institutions that have adapted devices and trained teachers to educate the child.
37) **Referral to a community worker** to help reduce development problems that occur in children with limited vision.
38) **The family should receive education and support**.
39) **Referrals should be made in writing and given to the parents.** Referrals could be given to the child, for example in a school setting to give to parents. See Appendix 3 for an example of a referral form. This form should include a counter-referral section for the child/family to return to the person who made the initial referral (return information to the referral source).
40) **Teachers should be included as much as possible in the referral process.**
41) **When a community worker (teacher, eye worker, CBR worker) makes a referral, they should follow-up with the family to make sure that the referral advice was carried out.** If it has not been carried out, the parents/guardians should be encouraged to know the importance of doing this referrals.

Evidence supporting the recommendations

Eballe, A. O., Bella, L. A., Owono, D., Mbome, S., & Mvogo, C. E. (2009). [Eye disease in children aged 6 to 15 years: a hospital-based study in Yaounde]. Sante, 19, 61-66.

Eballe, A. O., Ellong, A., Koki, G., Nanfack, N. C., Dohvoma, V. A., & Mvogo, C. E. (2012). Eye malformations in Cameroonian children: a clinical survey. Clin Ophthalmol., 6, 1607-1611.

Eballe, A. O., Epee, E., Koki, G., Bella, L., & Mvogo, C. E. (2009). Unilateral childhood blindness: a hospital-based study in Yaounde, Cameroon. Clin Ophthalmol., 3, 461-464.

New York State Department of Health (2007) Clinical Practice Guideline: Quick reference guide for parents and professionals. Vision Impairment: Assessment and Intervention for Young Children (Age 0-3 Years). Division of family health, bureau of early intervention (Level C) [NYSDH 2007, Level C]

Oluwatoyn, H.O., Olusola J. Omotoye (2010) Screening for ophthalmic disorders and visual impairment in a Nigerian school for the deaf. European Journal of Ophtalmology. 20(3): 596-600. (Level C) [Oluswatoyn & Olusola 2010, Level C]

PMMSC, year unknown: Accessed on-line April 30, 2011 at http://www.ahedegypt.org/pubs/PMMSC/PMMSC_Visual.pdf [PMMSC, Level C]

Additional References

Coffeng LE, Fobi G, Ozoh G, Bissek AC, Nlatte BO, Enyong P, et al. Concurrence of dermatological and ophthalmological morbidity in onchocerciasis. Trans R Soc Trop Med Hyg 2012 Apr;106(4):243-51.

Eballe AO, Owono D, Book AU, Bella AL, Mvogo CE, Mba N. Prevalence and etiologies of visual handicaps in leprosy patients in the south of Cameroon. Clin Ophthalmol 2009;3:195-8.

Evans TG. Socioeconomic consequences of blinding onchocerciasis in West Africa. Bulletin of the World Health Organization 1995;73(4):495-504.

Kamga HL, Shey DN, Assob JC, Njunda AL, Nde FP, Njem PK. Prevalence of onchocerciasis in the Fundong Health District, Cameroon after 6 years of continuous community-directed treatment with ivermectin. Pan Afr Med J 2011;10:34.

Mvogo CB, Bella-Hiag AL, Ellong A, Achu JH, Nkeng PF. Ocular complication of leprosy in Cameroon. Acta Ophthalmologica Scandinavica 2001;79(1):31-7.

Oye, J. E. (2005). South West province eye care programme, Cameroon. Community Eye Health, 18, 92-93.

Oye, J. E., Kuper, H., Dineen, B., Befidi-Mengue, R., & Foster, A. (2006). Prevalence and causes of blindness and visual impairment in Muyuka: A rural health district in South West Province, Cameroon. *British Journal of Ophthalmology, 90,* 538-542.

Takoungang I, Meremikwu M, Wandji S, Yenshu EV, Aripko B, Lamlenn SB, Eka BL, Enyong P, Meli J, Kale O, Remme JH. Rapid assessment method for prevalence and intensity of Loa loa infection. Bulletin of the World Health Organization 2002;80(11):852-58.

Torres, I. and Corn, A. (1990). When you have a visually handicapped child in your classroom: Suggestions for Teachers, 2nd Edition. New York: American Foundation for the Blind.

Wilson MR, Mansour M, Ross-Degnan D, Moukouri E, Fobi G, Alemayehu W, et al. Prevalence and causes of low vision and blindness in the Extreme North Province of Cameroon, West Africa. Ophthalmic Epidemiol 1996 Mar;3(1):23-33

Implementation

Benefits of Implementing the guideline and recommendations

These guidelines aim to develop standard and quality practices within the North West Region in the identification, assessment and referrals of persons with visual impairments across different contexts (e.g. rural and remote, semi-urban and urban). The benefits of following these guidelines are that practitioners and institutions can improve the effectiveness, relevance, and outcomes of their work to maximally identify, appropriate assess and refer persons with visual impairments, based on the work and lessons learned by colleagues in similar contexts.

Recommendations for Implementation of the guidelines

We recommend that these guidelines be used throughout the North West Region, and that their use is evaluated.

Additional funding and projects should be developed to distribute them to stakeholders and make them widely available. The dissemination process should include face to face meetings with as many of the key people as possible, including discussions on the importance of the recommendations, strategies to collect feedback and evaluation information, and strategies to motivate practitioners to use them.

The recommendations made here could be implemented in conjunction with other programs, such as screening and assessment for other impairments, and in public health programs, such as immunization campaigns or community outreach activities.

Please contact the authors if you have questions, comments, feedback or ideas about how to continue this project.

Appendix 1: Assessing Visual Development

From www.lowvisiononline.unimelb.educ

ASSESSING VISUAL DEVELOPMENT

The following lists the activities that can be used to assess the functional vision of infants, young children and children with multiple disabilities.

1-3 months-
Follows moving objects and lights
Swipes at or reaches towards an object

3-7 months-
Manipulates and looks at objects
Attempts to reach for and move objects
Tracks objects across entire field of vision
Shifts visual attention from object to object
Reaches and rescues dropped objects

7-12 months-
Watches movements and scribbling
Looks for hidden objects
Imitates facial expressions and gross body movements
Plays looking games

1-2 years-
Fits objects together
Points to objects in book
Scribbles or marks with a pen or brush

2-4 years-
Imitates movements of others
Matches geometric forms
Draws crude circle
Puts pegs in holes and two puzzle pieces together

4-7 years-
Discriminates, identifies and reproduces abstract figures and symbols
Traces, copies and draws figures
Identifies missing detail in pictures

Appendix 2: Might this child have a visual impairment?

Questions that parents and teachers can ask to determine if a child might have a visual problem

- Does the child say that they are having trouble seeing?
- Does the child need a preferential sitting position? For example, does the child tend to sit very close to the television?
- Does the child react to sunlight or close one eye in sunlight?
- Does the child have a need for more light?
- Does the child repeatedly hold his/her head in the same position?
- Does the child refuse to have one eye covered?
- Does the child have preference for large prints?

- Are there **physical changes** that have been noticed?
  - An eye that wanders
  - Bloodshot eyes, redness, watering
  - Does the child complain that their eyes feel “dusty”?
  - Rubbing of eyes
  - Squinting or blinking more than usual
  - Using only one eye
  - Bring items close to see
  - Does the child find difficulties closing the eyes when sleeping?
- Are there **changes in vision**?
  - Does the child say that items are blurred or that they cannot see at a distance?
  - Do they have more trouble when places are dim or dark?
- Are there **changes in behavior**?
  - More irritability, especially in school, doing desk work
  - Short attention span when watching activity

  These kinds of changes can indicate that a child is becoming frustrated because they cannot see what is going on well.

Appendix 3: Example Referral Forms

<Organization information (name, address, phone)>

Date of Referral: _____

Name and number of person referring: _____

CLIENT DETAILS

Name _____ Sex_____ Date of birth_____

Address_____ Cell phone_____

Guardian or parent's name (if a child):_____ Address_____

Referred to (name of service or provider – include location and phone number if possible)

_____

Reason for Referral _____

_____

_____

_____

Expected return visit date to person making referral (when do you want the person to come back to see you?) _____

****

Counter referral form:

Please complete this following information after you have seen the patient, and send back to the referral source with client/patient or send directly to the person making the referral.

Name of client/patient _____

Date client/patient was seen: _____

Diagnoses/Condition _____

Follow-up advice/comments

_____

_____

Name and Signature of consultant _____

Example Referral Form **– Completed**

Referral from: ABC School, Bamenda, NWR, Cameroon

Phone: 77 12 34 56

Date of Referral: __*November 14, 2012*_____

Name, signature and number of person referring: __*Mrs. Teacher Abby_77 98 76 54*

CLIENT DETAILS

Name __*Student Suzie*_____ Sex__*F*_____ Date of birth_*June 11, 2006*__

Address__*Sonac Street, Bamenda*_____ Cell phone_*use parents - below*____

Guardian or parent's name (if a child):__*Parent Suzie*___ Address/phone__*12 34 56 78*

Referred to (name of service or provider – include location and phone number if possible)
_*Mbingo Eye Services* _____

Reason for Referral ___*This student has complained of having trouble seeing the board in class and also with participating in classroom and other activities such as sports. Please assess for vision impairment, and make recommendations about how we can assist her in school. Thank you.*

_____

Expected return visit date to person making referral (when do you want the person to come back to see you?) ___*I see Student Suzie in class every day.*

_____

Counter referral form:

Please complete this following information after you have seen the patient, and send back to the referral source with client/patient or send directly to the person making the referral.

Name of client/patient ___ *Student Suzie* _____

Date client/patient was seen: ____ *November 24, 2012*_____

Diagnoses/Condition
___*Myopia*_____

Follow-up advice/comments: *Lenses/Eyeglasses; Father provided with information and prescription for lenses; Follow up here in December. Placement in classroom so she can see the board; encourage use of lenses. Thank you for this referral.*

Name and Signature of consultant ___*Dr. Eye Specialist*_____