PROCEDURE	
Distant vision testing (Lea Symbols Chart)	
Scope (Staff):	Community health staff
Scope (Area):	CAHS-CH, WACHS

Child Safe Organisation Statement of Commitment

The Child and Adolescent Health Service (CAHS) commits to being a child safe organisation by meeting the National Child Safe Principles and National Child Safe Standards. This is a commitment to a strong culture supported by robust policy documents to ensure the safety and wellbeing of children at CAHS.

This document should be read in conjunction with this DISCLAIMER

Aim

To identify amblyopia and unequal refractive errors in young children using the 15 line Lea Symbols Chart.

Risk

Undetected or unmanaged vision impairment can have a significant effect on a child's social and psychological development, educational progress, and long term social and vocational outcomes.

Background

Amblyopia is a condition that occurs when there is altered visual input or abnormal binocular interaction resulting in diminished vision in one or both eyes.[1] Strabismus is the most common cause of amblyopia and is the term used to describe any anomaly of ocular alignment. It can occur in one or both eyes and in any direction.[2]

Amblyopia is unique to children and if the child receives adequate treatment in childhood this will reduce the overall severity of vision loss.[3] The prevalence of amblyopia is approximately 2% of preschool children in Australia.[4] The Lea Symbols Chart has been shown to have a high sensitivity for amblyopia.[5]

The *National children's vision screening project*[6] conducted in 2008, recommended that a vision screen should be conducted for all children at around 4 years of age, with an allowable range from 3.5 to 5 years. For this age group it is recommended to conduct visual acuity screening using the Lea Chart.[7] In the community health setting, this is currently achieved by using the 15 line (3 metre) Lea Symbols Chart (#250100). The Lea Symbols Chart consists of lines of four different symbols, arranged in combinations of five symbols per line. The symbols on each line are smaller than those on the line above. The Lea Symbols Chart distance visual acuity test has been shown to be successfully used in 76% of children 3 years and over and more than 90% of children 4 years and over.[5]

For further information on vision refer to the Clinical Nursing Manual:

- Vision and eye health guideline - includes information on development of vision, normal vision behaviours, common vision concerns including strabismus and amblyopia, and the rationale for vision screening.

Key Points

- Vision screening should only be performed by community health staff who have undertaken appropriate CAHS-CH or WACHS training and been deemed competent in these procedures.
    - After receiving training and prior to achieving competency, staff must work under the guidance of a clinician deemed competent.
- For cultural considerations when caring for Aboriginal* children and families, refer to Related resources to assist service provision to Aboriginal clients.
- Universal screening should be offered to children as a component of the School Entry Health Assessment, unless there is evidence of the child being **under the care** of an ophthalmologist or optometrist.
- Targeted assessment may be performed from 3 years of age if there are early concerns about eye problems or family history of amblyopia, myopia, hypermetropia or astigmatism. The Lea Symbols Chart may also be used to test the visual acuity of older children or adults who are not literate in English.
- The Cover Test (CT) and Corneal Light Reflex (CLR) Test should be performed in addition to the distance vision testing to contribute to the overall assessment of the eye.
- The Lea chart should be stored with a sheet of white paper placed between the surfaces. This may prevent ghosting of the images onto the other side of the chart over time
    - If necessary, the chart can be cleaned with a non- abrasive cleaner
    - The chart should not be exposed to high temperatures
    - Ensure Lea chart is in good condition with no shadowing, marks or stickers.
- Do not set up in front of bookstands or on walls with surrounding posters. Use of plain butchers paper to cover area behind the Lea Chart may be required to ensure the background does not detract from the chart. No part of the Lea symbols chart should be covered; it should be presented as whole lines not isolated symbols, as the crowding phenomenon enhances the detection of amblyopia.
- A normal Lea result does not necessarily exclude the presence of other treatable eye conditions
    - Any client with a vision concern despite a normal visual acuity screening result should always be referred to their medical practitioner (CAHS-CH and WACHS) or an optometrist (WACHS only) for a more comprehensive assessment.

* OD 0435/13 - Within Western Australia, the term Aboriginal is used in preference to Aboriginal and Torres Strait Islander, in recognition that Aboriginal people are the original inhabitants of Western Australia. No disrespect is intended to our Torres Strait Islander colleagues and community.

- Community health nurses (nurses) must follow the organisation's overarching Infection Control Policies and perform hand hygiene in accordance with WA Health guidelines at all appropriate stages of the procedure.

Equipment

- 15 line (3 metre) Lea Symbols Chart (#250100) and the 4 symbol Lea recognition card
- pointer (preferably telescopic)
- tape measure and marker (or tape for marking distance)
- two pairs of occlusion glasses (right and left)
- appropriate size chair for the client
- swivel chair for the nurse.
- Tripod or easel (recommended)

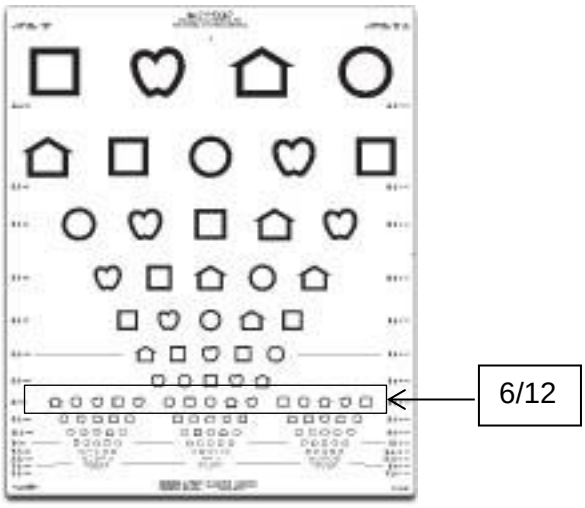
Process

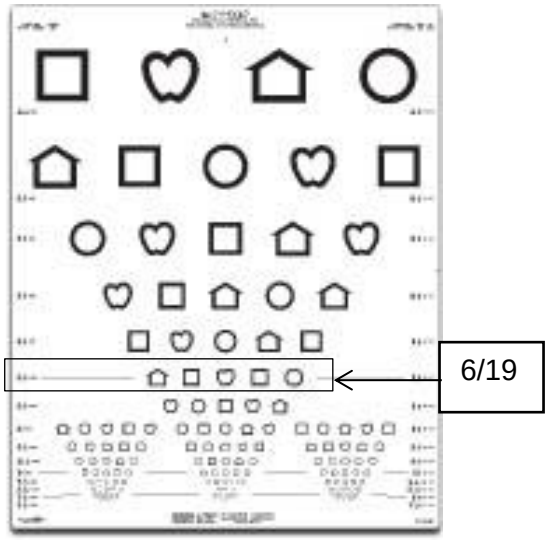
Steps	Additional Information
1. Engagement and consent • Prior to performing the test, it is important to obtain the history from the parent/caregiver. • Ensure either written or verbal parental/caregiver consent has been obtained prior to proceeding with testing if parent/caregiver is not present. • Explain the procedure to the client, and parent/caregiver if present. Allow sufficient time for discussion of concerns.	• Electronic recording systems (e.g. CDIS/CHIS) should be accessed for any documented history of vision concerns already identified. • Refer to surveillance questions, risk factors and red flags listed in the *Vision and Eye Health* guideline. • If obtaining verbal consent, discuss with the parent/caregiver whether they consent to sharing of information with relevant school staff. • Section 337(1) of the Health (Miscellaneous Provisions) Act 1911 authorises nurses specified in the schedule to examine a child without parent/caregiver consent if required.
2. Preparation • Secure a well-lit room with adequate space. • Measure 3 metres from the Lea chart to the position where the client's eyes will be when they are sitting or standing. • Set up Lea chart at correct height.	• Ensure adequate room lighting with even light distribution throughout the area of testing. • The Lea chart should be vertical and mounted on the wall or an easel. The middle of the chart should be at the client's eye level. • Note any abnormalities with the client's

Steps	Additional Information

• Ensure the client is sitting or standing comfortably.
• Observe the client's eyes, head posture and alignment while client is in a relaxed state.
• Place the Lea recognition card/s in front of the client and establish a method of communication with the client.
• Show all the symbols to the client to 'practice' before using the chart. The client should respond by either naming the symbol or pointing to the same symbol on the key card
  ○ Familiarise younger clients with the symbol chart. It may help to introduce the chart up close, before testing at the 3 metre distance. For school aged client, practice with the symbols and then switch directly to the 3 metre chart
  ○ Always test well within the visual sphere of the client. If the client loses interest and you cannot re-engage them, stop the test and recheck at a later date.
	eyes.
	• Abnormal head posturing may indicate a visual difficulty.
	• Ensure an appropriate size chair for client during procedure (so they are not using a stool or sitting on the floor).
	• The cards contain large examples of a house, apple, circle and square.
	• Providing the teacher or client with a copy of the symbols may assist the client to become familiar with them. A mat session in the classroom run by the nurse may also be useful for this. This is especially helpful for young clients or clients with disabilities.
	• If the client does not spontaneously name the symbols, let the client decide their own names for the symbols and the method of responding, either verbally or pointing.

3. Prior to procedure • Briefly pointing to the symbol using a telescopic pointer is acceptable. • Once 4 symbols have been identified, move to the next line. • Continue with the testing until the client is not able to correctly identify at least 4 symbols in one line ○ If a client loses concentration during testing, a whole line of another triangle may be used to verify a client's vision.	• The nurse should use a swivel chair to keep their whole body aligned. • **Do not** leave the pointer close to the symbol because it makes fixation easier, leading to an inaccurate result. • Skipping symbols may be a sign of other vision anomalies but is not a finding that requires follow-up or referral if noted in isolation. • Frequently prompting a client to repeat symbols on a line cannot accurately determine that the client has identified the symbols. Clients may be able to 'guess' the symbol correctly.

Steps	Additional Information
4. Binocular vision procedure • Always test binocular vision first. • Briefly point to a few of the larger symbols in random descending order and ask the client to name the symbol or match the correct symbol on the card in front of them. • Start binocular testing at one of the smaller lower triangles (starting from 6/12) to commence testing binocular visual acuity. • Move down until the client hesitates or is unable to correctly identify 4 out of 5 symbols on that line. • Clients of all age groups should be tested to the 6/6 line or until they are unable to correctly name 4 out of 5 symbols on a line. • Visual acuity is recorded as the last line on which at least 4 of the 5 symbols are identified correctly across the line.	 • If the client fails to identify a symbol, move up the chart to the next larger line. If the client is unable to identify symbols in this line continue up the chart until you find a symbol that the client can correctly match. • When tested at 3 metres, the visual acuity value is found in the right side margin adjacent to that line. • Having reached their visual acuity threshold, the client may identify all the symbols as circles; an indicator to the examiner the visual acuity threshold has been exceeded • Or, the client may guess at the symbol when they can no longer definitively recognise it. Observation of the client's behaviour should contribute to the clinical picture.
5. Unilateral vision procedure • Proceed to test each eye separately using the same progression as with binocular vision testing. • Test the right eye first (occluding the left eye), unless there is an obvious negative response to this order of process. • Use a different smaller lower triangle for each eye. This eliminates the risk of memorising. • To pass a line, the client must	• The eye not being tested must be occluded completely. When testing, be mindful of observing the client. Children can be very skilful at subtly 'peeking' with the better eye. • Encourage the client to keep both eyes open during the testing. • Use clinical judgement to determine if re-familiarising the client with bigger symbols is required for each component of the test. This will also depend on the individual practitioner's skill and

Steps	Additional Information
correctly identify at least 4 of the 5 symbols in the line. The correctly identified symbols do not need to be consecutive. Continue testing across the smaller lines until 2 or more errors are made in a line or it is too difficult for the client to continue. • Repeat the procedure to test the left eye, covering the right eye, and test to the 6/6 line if the client is able.	experience. • Result for the binocular vison test should match the result of unilateral vision for at least one eye. Where this is not the case, consider the validity of the results.
6. Interpreting results • Visual acuity (VA) is the smallest line where the client has correctly recognised at least 4 of the 5 symbols ○ VA is recorded as a Snellen notation equivalent e.g., 6/9.5, 6/6 (found in the right margin of the Lea Symbols Chart). • The client passes the test when visual acuity (VA) for each eye is 6/9.5 or better and there is less than a two-line difference between the two eyes, even though the VA was a pass for each eye individually e.g. 6/6 in one eye and 6/9.5 in the other eye is a two line difference and requires retest and/or referral.	• A VA of 6/19 or worse requires an urgent referral. • If the VA is at, or worse than, 6/19 in either eye but there is a possibility that the results were unreliable, arrange a recheck on the same day or within one week of initial screen so that an urgent referral can be arranged.  • If any anomalies, such as turning of the head, reluctance to cover one eye or ptosis of eye are observed during the assessment this will be recorded in the results and clinical judgement used to determine if a recheck or a referral is required.
7. Communicate results with parent/caregiver • Discuss results with parent/caregiver,	• Refer to *Language Services* policy for information on accessing interpreters.

Steps	Additional Information
including concerns if present. • If parent/caregiver not present: ○ Contact to discuss if there are any concerns, and need for recheck/referral as appropriate ○ Provide results in writing using CHS409-6A *Results for parents* or other relevant form. • Provide a copy of the results to the school on completion of the health assessment.	• It is recommended that staff use the correct terminology when discussing any vision results with the parent or caregiver. The use of the term 'lazy eye' can be misleading as it can relate to several different eye conditions. • If a vision concern is detected, inform the classroom teacher. This may include recommendations on seating or other strategies to support the client in the classroom whilst awaiting referral follow-up. • If unable to contact a parent/caregiver to discuss a concern, follow CAHS-CH or WACHS processes to provide effective communication with the family.
8. Recheck process • Rechecks should be conducted within three months on: ○ any client who is not attentive or not able to perform the testing ○ any client not passing as per Step 6 (excluding those requiring urgent referral).	• All components of the vision assessment should be reassessed, including corneal light reflex and cover test. • Clients who are not attentive during the vision screening process have been shown to have an increased likelihood of a vision problem.[8] • It is recommended to recheck the eye with the poorer visual acuity first and the better eye second.
9. Referral and follow up • Discuss and obtain consent for referral from parent/caregiver. • Include Lea vision results in referral along with information about other assessments (e.g. Corneal Light Reflection, Cover Test). • For clients at risk, follow up must occur with parents/caregivers to determine if the referral has been actioned. This includes clients of concern, children in care, or those with urgent vision concerns ○ For other clients, use clinical judgment to	• Any client with any of the following results should be referred to their medical practitioner for ongoing assessment: ○ Any client on ***recheck*** with a VA equal to, or greater than 6/12 in either eye or if there is a two line difference between the eyes ○ Any client with a VA of 6/19 or worse in either eye requires urgent referral. In this situation, discussion with the parents/caregivers should highlight the necessity for the medical practitioner (or optometrist for WACHS) to make

Steps	Additional Information
determine if referral has been actioned.	contact with the ophthalmologist to arrange a timely appointment. • Adherence to CAHS-CH and WACHS clinical handover processes is required when handing over, or referring a client within, or outside of, the health service. • WACHS nurses should follow local processes as required; this may involve referral to a medical practitioner or an optometrist for further assessment. • CAHS-CH staff should refer to a medical practitioner ○ The medical practitioner will assess and consider referral to either an ophthalmologist or optometrist for further investigation.

Documentation

Nurses maintain accurate, comprehensive and contemporaneous documentation of assessments, planning, decision making and evaluations according to CAHS-CH and WACHS processes.

Occupational Health and Safety considerations

The following risk mitigation strategies should be observed to minimise any risk of musculoskeletal injuries when using the Lea Symbols Chart. Additionally, staff must comply with the *CAHS Fitness for Work* policy, and discuss the impact of any existing injuries with their manager.

Individual nurses are to perform no more than 10 Lea tests per day. It is important to ensure community health staff rotate between assessment, documentation and liaison tasks frequently.

The use of a swivel chair when performing Lea chart testing is strongly recommended. Sitting forward on the swivel chair, with feet flat on the floor, will allow greatest use of the chairs' swivel mechanism, and will help reduce neck and/or trunk rotation.

If accessing a swivel chair is not possible, staff are to alternate between sitting or standing on the left and right side of the chart and switch using the pointer between the left and right hand.

Nurses are to adjust the telescopic pointer to ensure the arm remains in a relaxed position, with the elbow by the side of the body.

References

1. Granet D, Khayali S. Amblyopia and strabismus. J Pediatric annals. 2011;40(2):89-94.
2. Coats D, Paysse E. Evaluation and management of strabismus in children. In: UpToDate B, DS (Ed) editor. Waltham, MA;2012.
3. Park SH. Current Management of Childhood Amblyopia. Korean Journal of Ophthalmology. 2019;33(6):557-68.
4. Pai AS, Rose KA, Leone JF, Sharbini S, Burlutsky G, Varma R, et al. Amblyopia prevalence and risk factors in Australian preschool children. Journal of Ophthalmology. 2012;119:138-44.
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6. Mathers M, Keyes M, Wright M. National Children's Vision Screening Project. Melbourne: Murdoch Children's Research Institute; 2008.
7. Optometry Australia. Clinical Practice Guide - Paediatric Eye Health and Vision Care. Melbourne: Optometry Australia; 2016.
8. Nicholson P. Functional Vision Problems: What happens if your child's eyes do not focus like they should? Maryland America: Visual Learning Center; 2020. Available from: http://www.visuallearningcenter.com/functional-vision-problems-what-happens-if-your-childs-eyes-do-not-focus-like-they-should/.

Related policies, procedures and guidelines

The following documents can be accessed in the **Clinical Nursing Manual** via the HealthPoint link, Internet link or for WACHS staff in the WACHS Policy link
Aboriginal child health
Child health services
Clinical Handover - Nursing
Corneal light reflex test (Hirschberg Test)
Cover test
School-aged health services - primary
School-aged health services - secondary
Universal contact School Entry Health Assessment
Vision and Eye Health
Vulnerable Populations
The following documents can be accessed in the CAHS-CH Operational Manual
Client Identification
Consent for services

Infection Control manual
Language Services
The following documents can be accessed in the CAHS Policy Manual
Fitness for Work
Occupational Safety and Health
The following documents can be accessed in WACHS Policy
Enhanced Child Health Schedule
The following documents can be accessed in the Department of Health Policy Frameworks
Clinical Governance, Safety and Quality (Policy Framework)
Clinical Handover Policy (MP0095)
Clinical Incident Management Policy (MP 0122/19)

Related CAHS-CH forms
The following forms can be accessed from the CAHS-Community Health Forms page on HealthPoint
Clinical Handover/Referral Form (CHS663)
Clinical Handover/Referral Form – Electronic (CHS663E)
Referral to Community Health Nurse (CHS142)
SEHA Results for parents (CHS409-6A)
SEHA Parent Questionnaire (CHS409-1)
SEHA Results for staff (CHS409-2)

Related resources to assist service provision to Aboriginal clients
CAHS-CH staff
The following resources can be accessed from the CAHS-Aboriginal Health page on HealthPoint
Patient Care and Cultural Learning Guidelines
Aboriginal Health and Wellbeing
The following resources can be accessed from the CAHS-CH Aboriginal Health Team

page on HealthPoint
Cultural Information Directory
WACHS staff
WACHS Strategic Plan 2019-2024
WACHS Aboriginal Health Strategy 2019-2024

This document can be made available in alternative formats on request for a person with a disability.

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