Distance Vision Assessment in Children Aged over 7 Years using Snellen Procedure

1. Purpose

The aim of this document is to guide community health staff to assess and record the visual acuity of older children who are literate in English, utilising distance vision testing known as the Snellen Test.

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

Targeted assessment of distance vision in children from 7 years of age[1] in the community health setting can be achieved using the Snellen (6 metre) chart.

For further information on vision refer to Community Health Manual:

- CAHS Vision and eye health guideline includes information on development of vision; normal vision behaviours; vision problems; common vision defects, including strabismus; common eye disorders, including amblyopia; visual acuity tests; and rationale for vision screening.

2. Procedure

The Snellen chart may be used to assess the visual acuity of an older child where there are vision concerns or difficulties in the classroom. However, it is also recommended that the child be referred to a medical practitioner or optometrist for further evaluation. Children from 7 years of age (or adults) may be assessed with either the Lea symbols chart or the Snellen (6 meter) chart depending on their level of literacy in English.

Key points:

- Vision screening should only be performed by appropriately trained and skilled staff.
  - After receiving training and prior to achieving competency, staff must work under the guidance of an experienced and competent clinician.
- For cultural considerations when caring for Aboriginal children and families, staff are expected to be familiar with the following documents:
  - Aboriginal Health and Wellbeing Framework 2015-2030
  - WACHS Aboriginal Health Strategy 2019-2024
  - WACHS Strategic Plan 2019-2024 - online version
- The child/person being assessed must be familiar with the (English) alphabet or be able to 'draw' letters in the air.
- Prior to performing the test, it is important to obtain a history about the client's vision. This may be from the client, parent or school staff and include factors such as a history of headaches or blurred vision.
- The Cover Test (CT) and Corneal Light Reflex Test (CLR) should be performed in addition to the Snellen vision testing, to ensure an overall assessment of the eye.
- A normal Snellen 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 be referred to their medical practitioner or an optometrist (if client aged over 8 years of age) for a more comprehensive assessment or referral.
- The Snellen chart should be checked prior to use to make sure it is not discoloured or damaged in any way. It should be stored with a plain sheet of paper in between to prevent the letters being blurred.
- The test type consists of black letters on a while background and contains seven or eight rows of letters. Each line diminishes in size and is labelled 60, 36, 24, 18, 12, 9 and 6. There are 2 rows of size 6 letters.
- Community health staff are to follow the WACHS Hand Hygiene Policy, including appropriate disposal of waste (as per the WACHS Waste Management Policy) and perform hand hygiene in accordance with WA Health guidelines at all appropriate stages of the procedure.

Table 1:

Equipment	
• Snellen Alphabetical Chart (6 meter) ○ Note: Old charts are one sided and have two 6/6 lines. New charts have a different chart on either side with one 6/6 line and one 6/5 line per chart • Pointer (preferably telescopic) • Tape measure and marker (or tape for marking distance) • Two pairs of occlusion glasses (right and left) • Tripod or easel (recommended).	
Steps	**Additional Information**
1. Engagement and consent	
• Ensure either written or verbal consent from the parent/caregiver or client (if deemed a mature minor) has been obtained prior to proceeding with assessment. • Explain the procedure to the client. Allow sufficient time for discussion of concerns.	• If obtaining verbal consent, discuss with the parent/caregiver/mature minor 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 consent if required.
2. Preparation	
• Secure a well-lit room with adequate space. • Measure 6 metres from the Snellen chart to the position where the client will sit/stand. • Stand or sit the client. • Observe the client's eyes, head posture and alignment while client is in a relaxed state.	• Light should be dispersed evenly throughout the area of testing. • Accurate measurement will ensure validity of testing. • The Snellen chart should be vertical and at the client's eye level. • The chart should be mounted on the wall or an easel.
3. Vision Procedure	
• Test each eye separately. • Occlude the eye with occluder glasses or other occluder:	• Testing the weaker eye first may lessen the feeling of failure, clinical judgement should be used.

○ if one eye is suspected to be weaker than the other, test that eye first.[2] • Stand next to the chart and start testing from the top. Test one letter from each line to 6/12 line and then test all letters on the 6/9 line. **Testing the 6/6 line** • The method for testing the 6/6 line is dependent on the Snellen chart availability. • Choose method 3a, if the chart has two 6/6 lines and 3b if the chart has one 6/6 line per side. 3a. Old chart with two 6/6 lines: • Test first 6/6 line for right eye and then second 6/6 line for left eye. 3b. New chart with one 6/6 line per side: • Use one side of the chart to test the first eye to the 6/6 line, then flip the chart over and test the other eye to the 6/6 line.	• If necessary, it is acceptable to briefly point to a letter using a pointer. • Do not leave the pointer close to the letter because it makes fixation easier, especially in the case of amblyopia. • Do not isolate letters. • Using a second Snellen chart will reduce the chances of the client memorising. • The bottom line on the new chart is 6/5 and not tested.
4. Results	
• If the client makes one or less errors on the 6/6 line for either eye then the visual acuity is recorded as 6/6: ○ No action is required if the client's visual acuity is 6/6 in both eyes. • If the client makes 2 or more errors on the 6/6 line for either eye then the result is recorded as 6/9.	• The smallest line that the client can read (VA) is expressed as a fraction (e.g. 6/6). • The upper number refers to the distance the chart is from the client and the lower number refers to the distance in metres at which a person with no impairment can see the chart.[2]
5. Communicate results with parent/caregiver	
• Explain results to parent/caregiver, including concerns if present. • If parent/caregiver not present: ○ Contact to discuss if there are any concerns and need for referral as appropriate. ○ Provide results in writing using CHS142 Referral to Community Health Nurse. • Provide a copy of the results to the school on completion of the health assessment.	• Refer to WA Health System Language Services Policy for information on accessing interpreters. • 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 (and consent is obtained from parent/caregiver), 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 parent/caregiver to discuss a concern, follow CAHS-CH or WACHS processes to provide effective communication with the family.
6. Referral and follow up	
• Any errors on the 6/9 line or above require a referral. • Discuss and obtain consent for referral from parent/caregiver/mature minor. • Where results and clinical judgement indicate, provide a referral to an optometrist and/or medical practitioner. • Include Snellen vision results in referral along with information about other assessments (e.g. 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 determine if referral has been actioned.	• Where there are any vision concerns, and/or any anomalies are observed during the assessment, such as turning of the head during testing, reluctance to cover one eye, or ptosis of eye, nurses should use their clinical judgement and refer the client. • 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.

3. Roles and Responsibilities

The **clinician** is required to:

- perform the Snellen Test in accordance with this procedure
- document actions undertaken in the client health care record
- refer according to local guidelines when indicated.

All staff are required to comply with the directions in WACHS policies and procedures as per their roles and responsibilities. Guidelines are the recommended course of action for WACHS and staff are expected to use this information to guide practice. If staff are unsure which policies procedures and guidelines apply to their role or scope of practice, and/or are unsure of the application of directions they should consult their manager in the first instance.

4. Monitoring and Evaluation

Monitoring of compliance with this document is to be carried out by the Program Manager, Population Health, every three years using the following means or tools:

- current national and state eye health guidelines
- expert advice from service providers
- consultation with WACHS Population Health, Senior Nurses Best Practice Group
- consultation with WACHS Population Health, Staff Development and Clinical Nurse Specialists.

5. References

1. Optometry Australia. Clinical Practice Guide – Paediatric Eye Health and Vision Care. Melbourne: Optometry Australia; 2016.
2. Stevens, S. Test distance vision using a Snellen chart. Community Eye Health; 2007
3. Ebell, MH. ed. 2024. Essential Evidence Plus & AHFS DI Essentials. Hoboken, New Jersey. Wiley Subscription Services. STAT!Ref Online Electronic Medical Library. https://online.statref.com/document/HHVWBNcFqOWq6T0iq2b3iN
4. Dmitri Model ME. An Automated Hirschberg Test for Infants ResearchGate 2010.
5. Hull S, Tailor V, Balduzzi S, Rahi J, Schmucker C, Virgili G, Dahlmann-Noor A. Tests for detecting strabismus in children aged 1 to 6 years in the community. Cochrane Database Syst Rev. 2017 Nov 6;11(11):CD011221.
6. Matta N, Silbert D. Pediatric Vision Screening. International Ophthalmology Clinics. 2014; 54:41-53.
7. Loh, AR, Chiang MF. Pediatric Vision Screening. Pediatr Rev. 2018 May;39(5):225-34
8. Kleinstein, RN., Mutti, DO., Sinnott, LT., Jones-Jordan, LA., Cotter, SA., Manny, RE., Twelker, JD., Zadnik, K. Uncorrected Refractive Error and Distance Visual Acuity in Children Aged 6 to 14 Years. Optometry and Vision Science 98(1):p 3-12, January 2021. | https://doi.org/10.1097/opx.0000000000001630
9. Ball JW, Dains JE, Flynn JA, Solomon BS and Stewart RW. Seidel's Guide to Physical Examination: An Interprofessional Approach [Internet]. Tenth Ed. 2023; p. 230-258. Available from: https://www-clinicalkey-com-au.wachslibresources.health.wa.gov.au/nursing/#!/content/book/3-s2.0 - B9780323761833000127?scrollTo=%23hl0001226

6. Definitions

Term	Definition
Amblyopia	Is typically a unilateral (rarely bilateral) reduction of the best corrected visual acuity, caused by conditions that affect normal visual development. [3]
Corneal Light Reflex Test	Otherwise known as the Hirschberg test, determines how light is reflected from the cornea of the eye. With ocular alignment, a light reflection should be equally centred on both pupils. [4]
Cover Test	The Cover Test is used to detect ocular misalignment, commonly referred to as strabismus. The test is based on the refixation movement of a deviated eye when the fixing eye is covered. [5]
Distance Vision Testing	Refers to testing which is employed to assess visual acuity and to evaluate refractive error. [8]
Lea Symbols Chart	Consists of lines of four different symbols arranged in combinations of five symbols per line. These symbols include a house, apple, circle and square. The symbols on each line of the chart are smaller than those on the line above. [6,7]

Snellen Chart	The Snellen chart is an alphabetic chart suitable for use with children from the age of 7 years who are literate in English.[1]
Strabismus	Is the most common cause of amblyopia. The child's deviated eye prevents binocular participation in visual activities. Visual input through the misaligned eye is ignored, leading to abnormal development of visual pathways for the affected eye. [3]
Visual Acuity Tests	Is a measurement of the discrimination of small visual details and tests the optic nerve. It is essentially a measurement of central vision. [9]

7. Document Summary

Coverage	WACHS wide
Audience	Community Health staff
Records Management	Clinical: Health Record Management Policy
Related Legislation	*Health Services Act 2016* (WA) *Health (Miscellaneous Provisions) Act 1911* (WA)
Related Mandatory Policies / Frameworks	• WA Health System Language Services Policy • Clinical Services Planning and Programs Framework
Related WACHS Policy Documents	• Hand Hygiene Policy • Waste Management Policy
Other Related Documents	• DoH Aboriginal Health and Wellbeing Framework 2015-2030 • CAHS Corneal Light Reflex Test Procedure • CAHS Cover test Procedure • CAHS Distance vision testing (Lea Symbols Chart) Procedure • CAHS School-aged health services – primary Guideline • CAHS Universal contact School Entry Health Assessment Guideline • CAHS Vision and eye health Guideline • WACHS Aboriginal Health Strategy 2019-2024 • WACHS Strategic Plan 2019-2024 - online version
Related Forms	Nil
Related Training Packages	Nil
Aboriginal Health Impact Statement Declaration (ISD)	ISD Record ID: 3472
National Safety and Quality Health Service (NSQHS) Standards	5.02, 5.03, 5.05, 6.05, 6.06, 6.11
Aged Care Quality Standards	Nil
Chief Psychiatrist's Standards for Clinical Care	Nil

8. Document Control

Version	Published date	Current from	Summary of changes
2.00	10 September 2024	10 September 2024	Document history: • CAHS/WACHS Distance Vision Testing Snellen Procedure first issued December 2014 • WACHS Distance Vision Testing Snellen Procedure (Version 1.00) published 23 June 2019 and rescinded 24 June 2022 • CAHS/WACHS procedure to be rescinded in October 2024 • this WACHS procedure (Version 2.00) has been developed to supersede the above and includes the following changes: ○ inclusion of link to WA Health System Language Services Policy ○ references updated with reviewed Section 1 ○ minor vocabulary changes for greater clarity

9. Approval

Policy Owner	Executive Director Clinical Excellence
Co-approver	Executive Director Nursing and Midwifery
Contact	Policy Coordinator, Population Health
Business Unit	Population Health
EDRMS #	ED-CO-19-27038

This document can be made available in alternative formats on request.