RETINAL CAMERA TOOLKIT

The Provision of Eye Health and Equipment Training Project

funded by the Australian Government Department of Health

This Toolkit is designed to aid the embedding of retinal cameras into a primary health care service. Although it is designed to accompany the Canon CR-2AF camera, most of the resources are relevant for the embedding of any retinal camera.

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We acknowledge the traditional Aboriginal and Torres Strait Islander Custodians of the many lands that we live and work on, and their continuing connection to Country and Culture.

We pay our respects to Elders past, present and emerging.

We thank all Aboriginal and Torres Strait Islander Peoples whose participation and contribution has been key to the success of this project.

The Consortium thanks those who attended the 2018 November Embedding Workshop and all others who have contributed in the making of this Toolkit.

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Section 1
Program Background

Introduction

The Provision of Eye Health and Equipment Training Project is funded by the Australian Government Department of Health. A consortium of five organisations from across Australia is working in partnership to deliver this project based on their existing links and experience in Aboriginal and Torres Strait Islander eye care, in discussions with local and regional stakeholders, and service providers. These organisations are: Brien Holden Foundation, Australian College of Optometry, Aboriginal Health Council of South Australia, Centre for Eye Health and Optometry Australia.

Project period - April 2017 to December 2021

Goal

To procure and distribute non-mydriatic (without pupil dilation) retinal cameras and slit lamps where required to primary health care (PHC) services who provide care to Aboriginal and/or Torres Strait Islander people. Training on using the camera will be delivered to the PHC teams, including Aboriginal health workers, nurses, diabetes educators, general practitioners and any other relevant personnel.

Purpose

The Project aims to support uptake of the new Medicare Benefits Schedule (MBS) items for *Assessment of visual acuity and bilateral retinal photography with a non-mydriatic retinal camera* for Aboriginal and Torres Strait Islander Peoples (12325) and non-Indigenous Australians (12326). The cameras aim to enable primary-level access to a retinal photograph for people with diabetes, triggering referrals for a comprehensive eye examination or treatment where required. A retinal photograph does not replace a comprehensive eye examination. An added benefit of the cameras is that they can also be used by the visiting eye practitioners (optometrists and ophthalmologists).

Selection of sites

The Fred Hollows Foundation conducted the *National Eye Care Equipment Inventory Project* during 2016 to catalogue existing eye care equipment in PHC facilities providing care for Aboriginal and/or Torres Strait Islander people. Using this information, the Department identified the sites to receive a retinal camera and training on its use.

Choice and delivery of cameras

Decision on the type/model of non-mydriatic retinal camera chosen was based on the Department's list of essential requirements via a competitive tendering process addressing key selection criteria. This is the Canon CR2-AF non-mydriatic retinal camera. The Australian College of Optometry leads the procurement and organisation of the camera distribution to selected sites. Each location takes ownership of the camera (3 year warranty is included), confirmed in writing via a Recipient Service Agreement made with Brien Holden Foundation (as the project contractor).

Training

To support the uptake of retinal photography, the Consortium has developed two training courses, which are accredited by key organisations representing the PHC workers. The Consortium has also developed an embedding toolkit which will be introduced into health services prior to completion of the project. The on-site training component of Course 1 will be delivered by a local lead trainer alongside a co-trainer, such as a chronic disease coordinator, diabetes educator, eye health coordinator, or similar, nominated by each health service. This co-training approach aims to build local capacity for ongoing up-skilling on retinal photography. Wherever possible, a follow-up mentoring and upskilling session will be delivered by the visiting optometrist to that location. An outline of the training is overleaf.

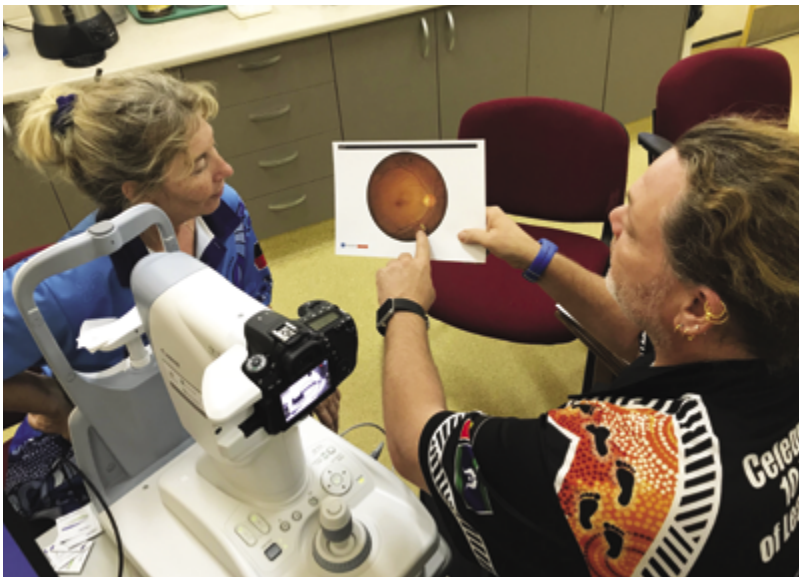
PROGRAM BACKGROUND

Course 1 Retinal Camera Training for Primary Health Care Workers	2 hours online — *[BHVI Education]* 1 day face-to-face training — [Consortium members plus local co-trainer] 1 day mentoring/upskilling — [Consortium member or visiting optometrist]
Course 2 Diabetic Retinopathy Assessment: A Training Course	2 hours online — *[Centre for Eye Health Education]* Reading Service — [Centre For Eye Health]
Course 3 Slit Lamp	From June 2020, slit lamps will be distributed to sites.
Course 4 Embedding Retinal Cameras into Practice	Tool kits will be distributed to all health services that received a retinal camera through the PEHET project. Pull-up banners and other advertising materials to promote diabetic retinopathy screening in health services.

Project expansion

The Australian Government has granted a funding extension for the project, increasing the number of sites across Australia to receive eye health equipment and training. 166 sites have received retinal cameras and 133 slit lamp will have been distributed by July 2021.

The program extension also funds the design and delivery of a new educational course aimed at embedding the retinal cameras into existing health services. This includes workshops with key stakeholders and health service staff who play a role in integrating the new process into their practice as well as the development of diabetic retinopathy screening advertisement materials.



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Conferences

The Consortium has supported presentations and workshops regarding the project held at various Conferences: 2019 Close the Gap for Vision National Conference in Alice Springs, 2019 NACCHO National Conference in Darwin, and the 2019 Rural GPs Conference and the 2021 National Aboriginal and Torres Strait Islander Eye Health Conference - The Gap & Beyond.

November 2018 Workshop

The Consortium held a 2 day workshop to discuss how to best embed retinal photography in primary health care processes. This workshop was predominantly Indigenous led with 56 participants representing 37 organisations across Australia. A wealth of knowledge and ideas were exchanged, all which highlighted key areas to focus on for the future development of the project. A variety of stakeholders including peak body representatives, ACCHOs/primary health care representatives from each jurisdiction, Aboriginal Health Workers, GPs, consortium partners and optometrists were brought together, which led to a rich and diverse mix of ideas.

Any questions?

Please direct any questions, comments, project feedback and future ideas for sustainability around this project to: Colina Waddell, Head of Australia Programs – c.waddell@brienholdenfoundation.org

Up-to-date information on camera delivery and training progress can be found at https://brienholdenfoundation.org/australia-program/pehet/

Consortium and Optimed Key Contacts

Consortium members		
Organisation	**Key Contact**	**Email**
Brien Holden Foundation	Colina Waddell	c.waddell@brienholdenfoundation.org
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Centre for Eye Health	Michael Yapp	myapp@cfeh.com.au
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Optimed Contacts

Head Office	1300 657 720	

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Section 2
Eye Health and Retinal Camera Factsheet & MBS items 12325 & 12326

What does retinal photography mean to me?

Today you have had some retinal photographs taken of the inside of your eyes. These photographs will be reviewed by a general practitioner (GP) or an eye health practitioner (optometrist or ophthalmologist/eye specialist).

You will be contacted in the next couple of weeks with your results. If you haven't heard anything and wish to know the result, please contact the health service you visited.

NOTE: The photographs taken today do not replace the need for an eye examination, and it is important for you to have an eye examination at least every 12 months with an optometrist or ophthalmologist.

A **full eye examination** with an optometrist will check:

- your distance and near vision, and whether you need glasses
- the health of the front of your eyes, including the lens for cataract
- the overall surface of the retina – the "seeing" part of the eye
- the central part of the retina, called the macula/fovea – for seeing finer details
- the health of all the blood vessels – which feed the retina
- the optic nerve – which sends the images to the brain

How diabetes affects your eyes

Diabetes can damage the tiny blood vessels in the back of the eye (the retina). Those blood vessels get tiny holes or tears. They can swell, bleed, or leak fats/fluid into the rest of the eye, causing blood spots and fuzzy white spots. It means there is not enough blood supply to the retina, which results in vision loss. This is known as diabetic retinopathy (see image on the right).

In the early stages of diabetic retinopathy, there are usually no symptoms or signs of change to a person's vision.

The only way to pick up diabetic retinopathy early is by looking inside your eye. The best method is by having an eye examination with an optometrist or ophthalmologist. Diabetic retinopathy can also be detected by taking a retinal photograph.

If caught early, diabetic retinopathy can be treated with good results, but if not diagnosed early, it can be very difficult or impossible to treat, and may cause permanent vision loss that could have been prevented.

How can I help my family and friends with diabetes?

Thank you for taking the time today to have your eyes photographed by the retinal camera. Don't forget to tell your family and friends about this service and encourage them to have their eyes checked, which is especially important if they have diabetes.

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A Guide to Medicare Benefits Schedule Items 12325 and 12326

Retinal Photography with a Non-Mydriatic Retinal Camera

Background

- On 1 November 2016, the Australian Government introduced two Medicare Benefits Schedule (MBS) items – 12325 and 12326 – allowing medical practitioners providing primary glycaemic management of the patient to claim a rebate for obtaining and analysing retinal photographs and assessing distance vision for the detection of diabetic retinopathy in patients diagnosed with diabetes
- This item is intended for the provision of **retinal photography with a non-mydriatic (no pupil dilation) retinal camera**
- **Any** element of this service may be **delegated** to appropriately trained or qualified personnel (such as a registered nurses, Aboriginal or Torres Strait Islander health practitioners or workers, or diabetes educators) under the direction of the medical practitioner co-ordinating the patient's care, who retains overall responsibility for claiming of the service

Retinal photograph assessment

When reviewing the retinal photographs, the practitioner should assess the:

1. Quality of the photo:

- if a clear image cannot be obtained due to small pupils, mydriatic drops are permitted if the health service has an **approved protocol**
- if a clear image cannot be obtained for any other reason, the patient should be **referred to an optometrist for further assessment**

2. Presence of diabetic retinopathy :

- if diabetic retinopathy is not detected, best practice recommends the patient should be referred to an optometrist for a **comprehensive eye examination with pupil dilation**
- if diabetic retinopathy is detected, the patient should be **referred to an optometrist or ophthalmologist for further investigation** in accordance with the National Health and Medical Research Council (NHMRC) guidelines *

NOTES

- **Anyone can have a photograph taken irrespective of billing eligibility (e.g. for patient education)**
- **Consider linking with other billing options:**

  715 – Aboriginal and Torres Strait Islander Peoples Health Assessment (plus 10987 if applicable)

  721 – Preparation of a GP Management Plan (GPMP) (plus 10997 if applicable)

medicare

Information adapted from the Medicare website – www.mbsonline.gov.au
http://www9.health.gov.au/mbs/fullDisplay.cfm?type=note&q=DN.1.19&qt=noteID&criteria=12325

** NHMRC guidelines: https://www.optometry.org.au/wp-content/uploads/Professional_support/Guidelines/nhmrc_diabetic_guidelines.pdf*

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The following table outlines the required criteria for MBS items 12325 and 12326

The items 12325 and 12326 can be claimed for the assessment of visual acuity and bilateral retinal photography with a non-mydriatic retinal camera, including analysis and reporting of the images for initial or repeat assessment for presence or absence of diabetic retinopathy, in a patient with medically diagnosed diabetes, if:

	12325 (Indigenous)	12326 (non-Indigenous)	Notes
Eligibility criteria	a) the patient is of Aboriginal and Torres Strait Islander descent	a) the patient is not of Aboriginal and Torres Strait Islander descent	
	b) the assessment is performed by the medical practitioner (other than an optometrist or ophthalmologist) providing the primary glycaemic management of the patient's diabetes		The medical practitioner remains responsible for the overall process and claiming the MBS item, but may **delegate** any aspect of the assessment to appropriately trained or qualified personnel
	b) this item and 12326 have not applied to the patient in the preceding 12 months	c) this item and 12325 have not applied to the patient in the preceding 24 months	The items can be billed **once every 12 (12325) or 24 (12326) months**
	c) the patient **does not** have any of the following, at the time of presentation: i. an **existing diagnosis of diabetic retinopathy;** or		**No current diagnosis of diabetic retinopathy** on the patient's medical records (including on their optometry or ophthalmology records, or letters imported into the medical records)
	ii. visual acuity of **less than 6/12** in either eye; or		Patient's presenting distance visual acuity (VA)* must be **6/12 or better** in both eyes
	iii. a difference of **more than 2 lines of vision** between the 2 eyes		Patient's presenting distance VA in each eye should **not be different by more than 2 lines** on the VA chart (e.g. if one eye sees 6/6, then the other eye needs to be 6/9 or better) ** If the patient **normally** wears glasses or contact lenses for distance vision (e.g. TV, driving) they should leave these on for VA assessment*

Information adapted from the Medicare website – www.mbsonline.gov.au
http://www9.health.gov.au/mbs/fullDisplay.cfm?type=note&q=DN.1.19&qt=noteID&criteria=12325

** NHMRC guidelines: https://www.optometry.org.au/wp-content/uploads/Professional_support/Guidelines/nhmrc_diabetic_guidelines.pdf*

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Section 3
Measuring
Visual Acuity

MEASURING VISUAL ACUITY (VA)* 3.1

Distance VA

1. Set up

- use a well-lit 3m chart at eye-height with patient at **3m**
- if the person usually wears glasses for distance, they should leave them **on**

2. Measure

- test right (R) eye first – left (L) eye should be gently covered with their palm
- ask the patient which chart they want to use (letters or E chart)
- start with a large letter / E first and gradually move down the chart (one letter per line) until it becomes difficult or incorrect
- go across the line above the difficult or incorrect line, and keep going (ask the patient to try) until they get half or more of a line wrong
- repeat for L eye

3. Record

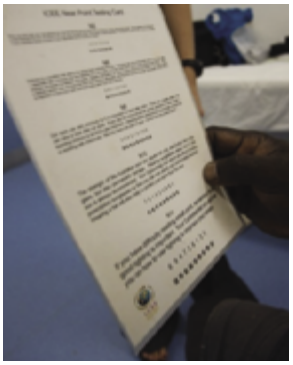
- record DISTANCE VA as the smallest line where half or more letters were seen
- measure and record for: R eye, L eye, and both eyes (binocular)
- record if it was unaided (without glasses) or aided (with glasses)

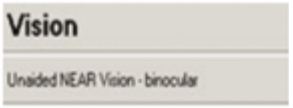
4. Pinhole (PH) – if VA is 6/9 or worse#

- measure VA through a pinhole occluder
- record PINHOLE VA as 'Pinhole VA [R or L]', or 'VA with PH.'
- if vision improves with pinhole, the person would benefit from glasses

REFER TO OPTOMETRIST IF: Distance VA is 6/9 or worse (or any symptoms with distance vision)

Near VA





1. Set up

- in good light, give the patient the near point VA card to hold at their comfortable reading distance (usually around **40cm**)
- if the person usually wears glasses for near, they should put them **on**

2. Measure

- the patient keeps **both eyes open**
- starting with N6 size, ask the patient to read some words, some numbers, or indicate the direction of the Es
- if they cannot read N6, go larger (N8) until they can
- if they can read N6, go smaller (N5)

3. Record

- record NEAR VA as the **smallest N size print** they can see
- record if it was **unaided** (without glasses) **or aided** (with glasses)

REFER TO OPTOMETRIST IF: Near VA is N8 or worse (or any symptoms with near vision)

* Please refer to CARPA Clinical Procedures Manual, Section 6: 'Eyes: Checking near and distance vision' for further information

Note: CARPA recommends using a pinhole if not able to see 6/6

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MEASURING VISUAL ACUITY (VA) 3.1

VA worse than the top line of the chart (eg.6/60 or 6/120)

1. Counting fingers

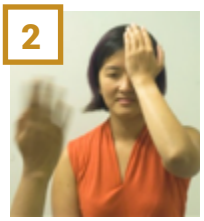
- cover eye not being tested
- ask the patient to count the number of fingers you are holding up at 3m
- if they are not able to count the number of fingers at 3m:
  - come closer to 2m
  - and again to 1m if unable to see them at 2m
- record the result as CF @ # m, where # is the distance between your fingers and the patient
  - for example: Unaided R CF @ 1 m

2. Hand movements

- if the patient cannot count fingers, ask the patient if they can see your hand waving at 1m
- if seen, record the results as HM @ 1 m
  - for example: Unaided R HM @ 1 m

3. Light perception

- if the patient cannot see hand movements, shine a pen torch or equivalent into the patient's eye
  - if they are able to see the light, record as LP (light perception)
  - if they are unable to see the light, record as NLP (no light perception)



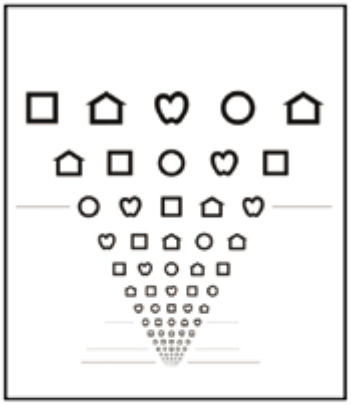
Children's VA

1. Recommended variations

- use the Lea shape chart if the child does not know letters yet
- ask the child to name the shape, or point to the shape on a matching card that they hold
- cover the eye with a palm or 'pirate patch'

2. Handy tips

- enlist the help of parents/family members as needed
- be as quick as possible before the child loses interest ☺
- the results may be variable



Expected vision ranges for children are:

3 years	6/12
4 years	6/9
5 years	6/7.5
6+ years	6/6

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VISUAL ACUITY TEST

PATIENT INSTRUCTIONS

ENSURE that the room is set up correctly for vision testing

1. **"We're going to test your distance vision."**
2. **"Please stand on this line for me." OR "Please take a seat there for me."**
3. **"Do you normally wear glasses or contact lenses for distance/far away?"**
4. **If YES: "Please put them on for me."**

Always test with their distance glasses on if they have brought them along; record this as Aided VA. If no glasses or contact lenses, record as Unaided VA.

5. **"Would you like to use the letter chart or the E chart?"**

If using the **letter** chart

"As I point to each letter, just call out what letter it is."

If using the **tumbling E** chart

"See the big E right at the top? See how the 3 'arms' of the E are going this way? Good. So just show me with your hands which way the 3 bars are going for each one I point to on the chart."

6. **"We will test the right eye first, so please cover your left eye with the palm of your left hand."**
   PROCEED to test right eye, and RECORD results.
7. **"Now let's swap around and test the left eye, so you'll need to cover up your right eye."**
   REPEAT process for left eye, and RECORD results.

- IF vision is **worse than 6/60** in either eye, PROCEED to CF/HM/LP tests & RECORD.
- IF vision is **worse than 6/9** in either eye, REPEAT with a Pinhole Test & RECORD.

***Developed by Chris Rektsinis**, Eye Health Project Officer, Aboriginal Health Council of South Australia*

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Section 4
Retinal Camera
Canon CR-2AF

RETINAL CAMERA FLIGHT CASE & ACCESSORIES INSTRUCTIONS

Canon CR-2 AF Retinal Camera – Flight Case & Accessories Instruction Sheet

This instruction sheet provides you with a quick guide on the pack up and pack down of your Canon CR-2 retinal camera.

You have been provided with:

• A custom made flight case	580 x 440 x 670	19kg
• Canon CR-2 AF retinal camera	660 x 500 x 630	21kg
• Notebook PC	550 x 350 x 70	3.5kg
• UPS power supply	340 x 150 x 240	6kg
• TN-18 table	750 x 600 x 390	23kg
• Table top	850 x 520 x 80	8kg
• Cables		

80.5kg

The flight case

The aluminum flight case has four sides. Each side has a rotating lock at the base. The locks separate the two components of the case into base with wheels and top. The top has two handles for carrying and for removal of the lid.

OptiMed

TECHNICAL SUPPORT: 1300 657 720

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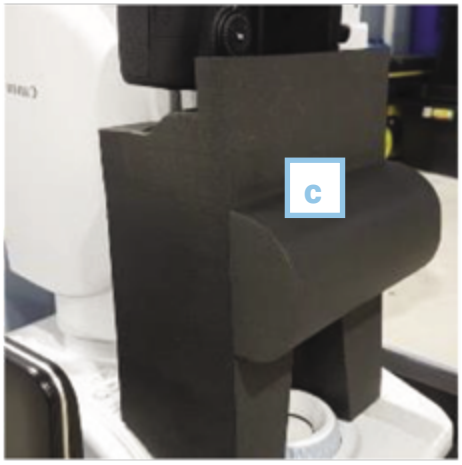
RETINAL CAMERA FLIGHT CASE & ACCESSORIES INSTRUCTIONS

Step 1: Removing the lid

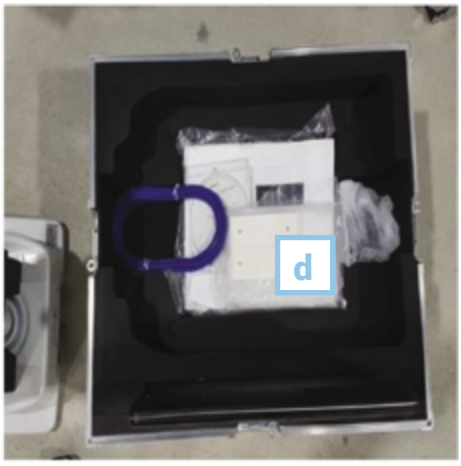
- Turn the lock on each side till the locks unclip and flip away from the case
- Using the handle, gently raise the lid from the case and place nearby
- You will now notice the retinal camera and notebook PC (a) sitting in high-density foam mouldings (b)

Please note, the foam support (c) at the camera rear, can be removed and stored until pack up

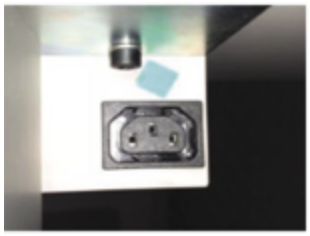


Step 2: Removing the camera from the case

- Remove the notebook PC
- Carefully slide your hands into the foam cut outs at the front and rear of the camera where you will find lift points for the camera
- Carefully lift the camera and place it onto the electric table
- You will now notice the bottom of the case contains manuals, cables and a cover for the camera (d)
- Once you have removed the accessories that you require, replace the lid back on to the case and secure the locks and wheel out of the way



Step 3: Connection of the cables to the camera

Accessory/cables	Description	Plugs from	Plugs to
	AC power adaptor with extension Connects table power supply to notebook PC	 Notebook PC	 Table supply (under table top on top of column)
	IEC power extension Connects table power supply to camera	 Camera	 Table supply (under table top on top of column)
	USB cable Allows data transfer from camera to notebook PC	 Flatter end inserts into USB port on notebook PC	 USB outlet on camera (large end of cable)
	Ethernet cable Allows connection to your network	 Notebook PC	Your network Ethernet port ***Note: This can also be done wirelessly***

Accessory/cables	Description	Plugs from	Plugs to
	UPS power supply Protects all camera and table components from electrical power surges	The electronic table power cord (found at the bottom of the table) plugs into the UPS power supply	The UPS power supply cable plugs into the wall

Step 4: Prepare camera and software for use

- Turn on the table (wall, UPS, green switch on table)
- Turn on the camera
- Turn on the laptop
- Wait for 5 minutes for RX Capture to automatically load

Step 5: Shut down camera and software

- Shut down the laptop software (shut down on RX capture)
- Wait until the laptop has turned off completely before packing into case
- To place the camera into transport mode - press and hold the fixation button (e), then turn the camera back on from the side on/off switch
- Hold the fixation button until there are two beep sounds – the head and/or chinrest will move down
- Wait until the head and chinrest have finished moving
- Turn off the camera
- Turn off the table and wall UPS outlet

Step 6: Pack down of camera into flight case

- The packing of the camera into the flight case is the reverse of the set up process

EXTRACTING IMAGES FROM RX CAPTURE SOFTWARE

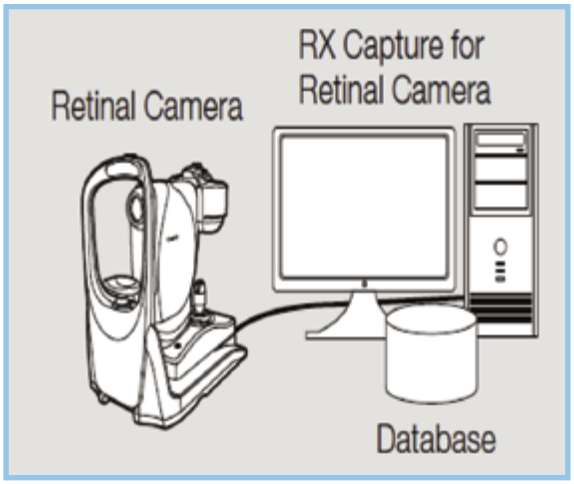
Extracting images from RX Capture software

Background - Software set up at your health service

On installation of the new retinal camera at your health service, the IT support team will have been advised to set up your retinal camera software to allow ease of transferring retinal images and reports across to the patient management system. There are a number of ways the camera software can be set up (as below). If you are experiencing difficulty with the systems in place please advise your IT support team and/or OptiMed (1300 657 720).

Option 1 – Automatic connection to health service systems

- IT services at your health service will set up a file pathway that will automatically transfer generated output images and reports to a shared database folder
- Share settings will enable staff to access the database folder from their own user accounts
- Images and reports then need to be uploaded to the patient management system
- File size per item on database = 100kb to 500kb



Option 2 – Patient management system upload to camera software

- IT services at your health service will upload the patient management system onto your camera laptop
- They will set up a file pathway that will automatically transfer generated output images/ reports generated to a shared database folder
- Share settings will enable staff to access the database folder from their own user accounts
- Images and reports then need to be uploaded to the patient management system
- File size per item on database = 100kb to 500kb

Option 3 – Not connected to servers

- Your camera and software can be used as a standalone unit
- Whilst you are waiting for your camera to be set up to the network, the camera is operational
- Output images and reports need to be saved to a USB or external hard drive and uploaded to the patient management system from one of the clinic computers

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EXTRACTING IMAGES FROM RX CAPTURE SOFTWARE

- **Option 1: Automatic JPEG images**

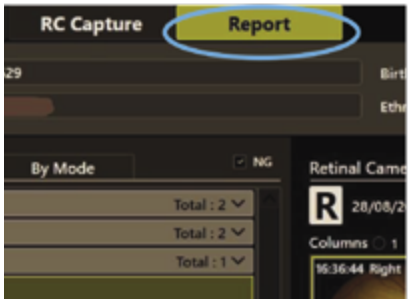
When you click on the **Report** tab in Rx Capture, the JPEG files for the photos are **automatically** exported into C:\JPEG EXPORT or C:\EXPORT JPEG; a **shortcut** is on the **desktop**:

Within this folder the JPEGs will be filed in **subfolders** according to the date **(YYYYMMDD)** with the **file name** starting with the **patient ID** you have entered, for example:

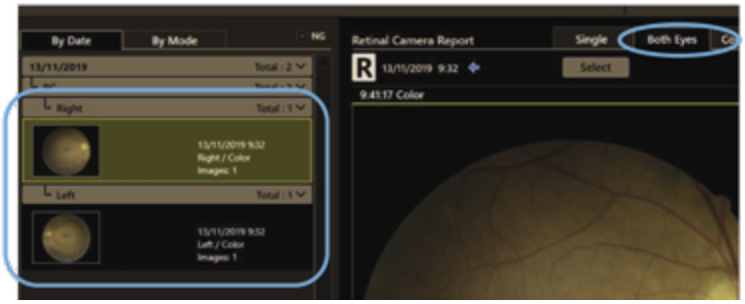
Note: It is possible to change which folder these JPEGs are exported to, if you would like to change this – see the ***How to change photograph output settings on RX Capture software*** documen Section 4.3.

- **Option 2: Manual JPEG images**

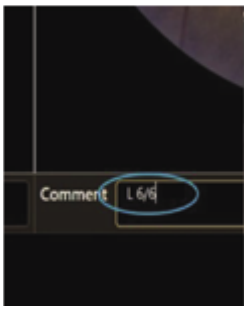
Your system may not have been set up to have the automatic output. In this case, you must **manually export the JPEGs** to the Export JPEG folder, as follows:



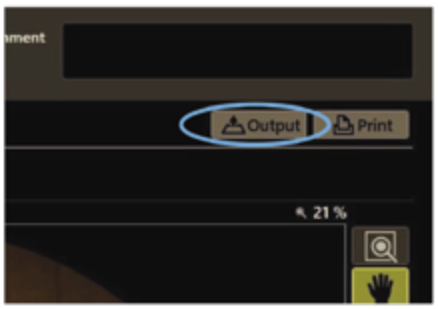
1. Click Report



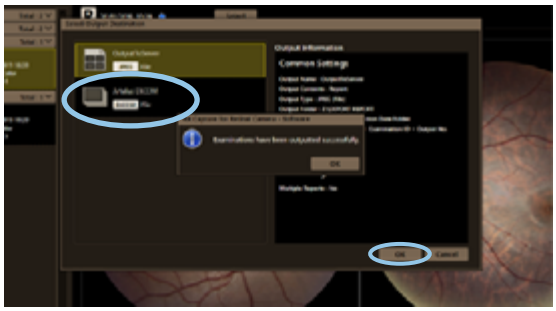
2. Click Both Eyes



3. Input visual acuity for both eyes in Comment box [optional]



4. Click Output



5. Click JPEG Report & click OK; JPEG will now be exported to the "EXPORT REPORT" folder (access via the desktop shortcut)

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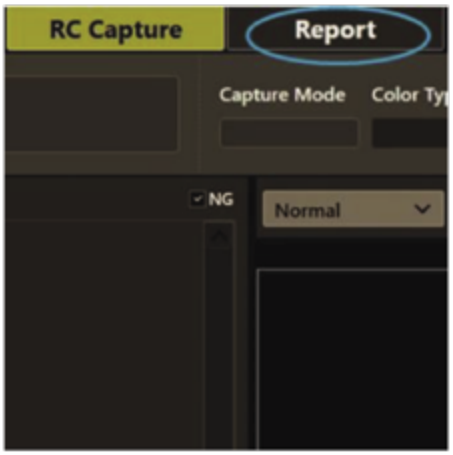
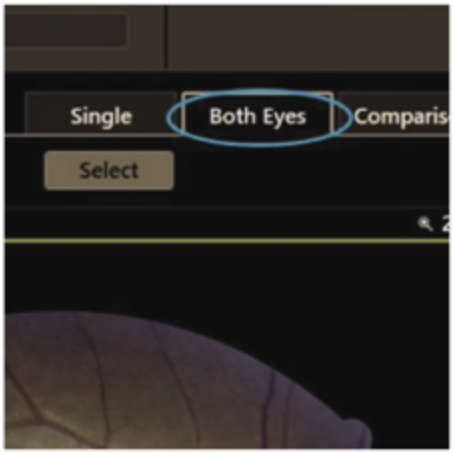
EXTRACTING IMAGES FROM RX CAPTURE SOFTWARE

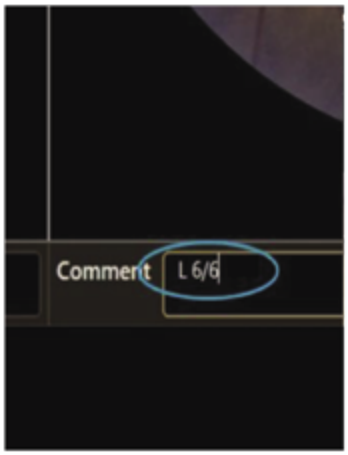
- **Option 3: PDF report**



1. Click Report

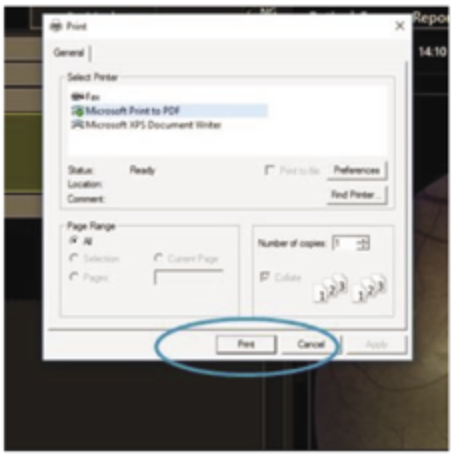


2. Click Both Eyes



3. Input visual acuity for both eyes in Comment box [optional]

4. Click Print



5. Click Print

6. Report generated as a PDF: name & save it as you desire

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HOW TO CHANGE PHOTOGRAPH OUTPUT SETTINGS

4.3

How to change photograph output settings on RX Capture software

- **Administration access**
- **Changing the location of the automatic outputs**
- **Changing information displayed on the photograph**
- **Changing the photograph file name**

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HOW TO CHANGE PHOTOGRAPH OUTPUT SETTINGS

Administration access

Step 1
Login with the
username: canon
password: canon

Step 2
Go to **Output Settings**

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HOW TO CHANGE PHOTOGRAPH OUTPUT SETTINGS

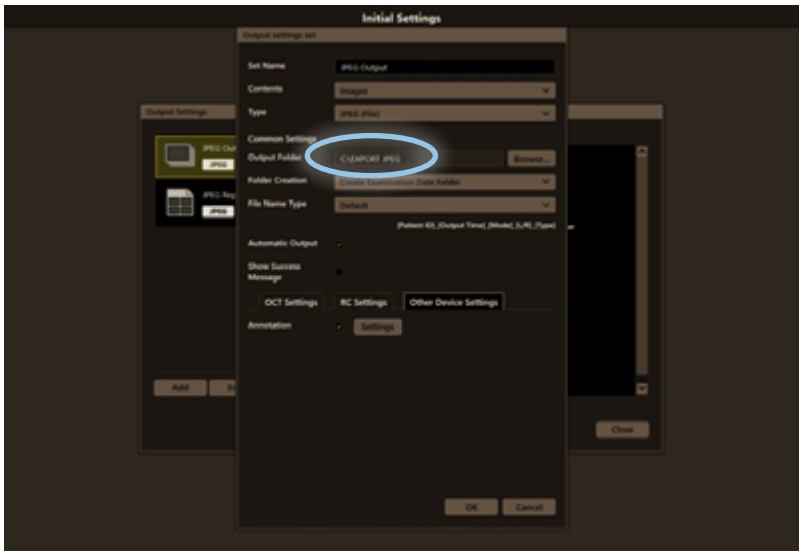
Step 3

Select **JPEG Output or JPEG Report** then click **Edit**

*** Change user name back to "screening" when done***

To change the location of the automatic outputs

Change the Output folder to the desired location



*** Change user name back to "screening" when done***

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HOW TO CHANGE PHOTOGRAPH OUTPUT SETTINGS

4.3

To change information displayed on the photograph

Click the **Other Device Settings** tab then click **Settings**

Click **OK** when done

*** Change user name back to "screening" when done***

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HOW TO CHANGE PHOTOGRAPH OUTPUT SETTINGS

4.3

To change the photograph file name

Click the drop down menu, select the file name and click **OK**

*** Change user name back to "screening" when done***

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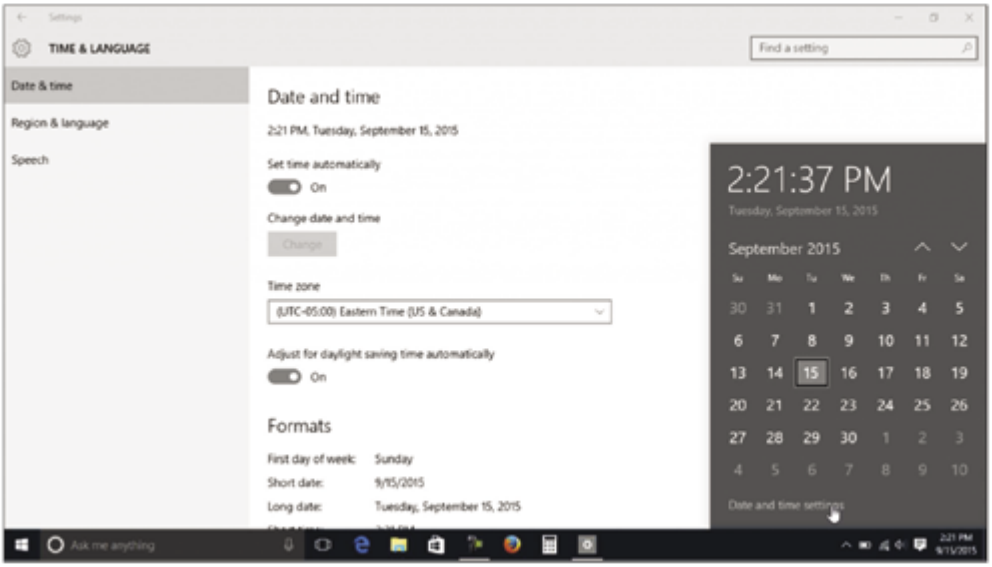
CHANGE THE DATE AND TIME IN WINDOWS 10 4.4

Change the Date and Time in Windows 10

Instructions

1. **To change the date and time in Windows 10**, open the “Settings” window.
2. Click the “Time & Language” button in the middle of the screen to display time and language settings.
3. Click the “Date & time” category at the left side of this window to view date and time settings in the area to the right.
4. **Another way to change the date and time in Windows** is to click the date/time display in the taskbar.
5. Then click the “Date and time settings” link in the pop-up window that appears.
6. In the “Date and time” section, you can see the computer’s current date and time.
7. **To enable or disable Internet time synchronizing**, click the “Set the time automatically” toggle switch to set it to either the “On” or “Off” position.
8. If disabled, you can click the “Change” button to manually set the date and time in the window that appears.
9. Select your time zone from the “Time zone” drop-down.
10. **To let your device automatically adjust for daylight savings time**, ensure the “Adjust for daylight saving time automatically” toggle switch is set to the “On” position.
11. You can click it to toggle it “Off,” if needed.
12. In the “Formats” section, you can see the display of date and time increments.
13. **To change the formatting of this display**, click the “Change date and time formats” command.
14. In the window that opens, use the drop-downs for each time and date increment to choose the display format to use.
15. Click the “Back” arrow button in the upper-left corner to return to the “Date & time” settings, when finished.
16. **To open the “Clock, Language, and Region” window within the Control Panel**, click the “Additional date, time, & regional settings” link under the “Related settings” section.
17. **To open the “Date and Time” dialog box**, click the “Add clocks for different time zones” link.
18. When finished, you can close either window by clicking the “X” button in its upper-right corner.



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RETINAL CAMERA TOOLKIT

Section 4a
Taking photos
with Canon CR-2AF

AT THE START OF DAY

TURN ON in this order:

1

TURN ON TABLE POWER
(green light switch on table column)

If light does not come on, check the lead is **PLUGGED INTO UPS** and the UPS is **TURNED ON** at wall.

2

CAMERA

3

LAPTOP

4

SOFTWARE
(RX Capture automatically loads)

Then **WAIT WHILE THE SYSTEM LOADS** (e.g. measure Visual Acuity on your patient).

AT THE END OF DAY

SHUT DOWN in this order:

1

SOFTWARE
(close RX Capture)

2

LAPTOP

Completely shut down and allow screen to go blank before closing lid, **don't just log out or let it hibernate.**

3

CAMERA

4

TURN OFF TABLE POWER
(green light switch on table column)

Shutting the laptop screen in the middle of the capture program **is not the correct way of shutting the system down** and will cause potential loss of data and corrupted databases.

TAKING PHOTOS WITH CANON CR-2AF

1. At the start of the day

- Remove the dust cover, lens cap and make sure the camera is plugged in and turned on at the power switch
- Turn on the camera, then the laptop

2. Set up and clean

- Make sure the camera is unlocked
- Sterilise chin rest with alcohol wipe
- Enter new patient details OR find existing patient details
- Select RC Capture
- Instruct patient to place chin on chin rest and forehead on forehead rest

3. Align the camera – front of eye

- You now need to line up the eye so that it is in the middle of the circle, and the top and bottom half of the eye is equal in size

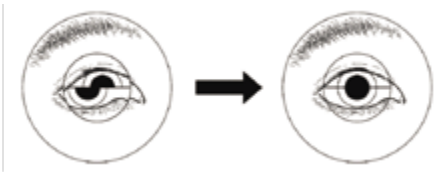

Figure 1. *Front of eye alignment*

- To move the camera:
  - Side to side – move the joystick side to side
  - Up and down – twist the joystick (twisting clockwise moves the camera up and twisting anti-clockwise moves the camera down)
  - To make the circles a full circle – move the joystick forward or backwards
  - Note: moving the joystick is the same as moving the base of the camera, but with finer movements

Note: the size of the pupil needs to be at least the same size as the small circle to take a good photo and for the automatic functions to work; you can select the small pupil (SP) function if the pupil is smaller

- Once aligned, the machine will automatically switch views to the back of the eye

4. Align the camera – back of eye

- The camera will automatically focus the image
- Line up the white dots to the boxes in the 3 and 9 o'clock position by moving the joystick side to side, or twisting the joystick to move it up and down
- Sharpen the white dots by moving the joystick forward or backwards

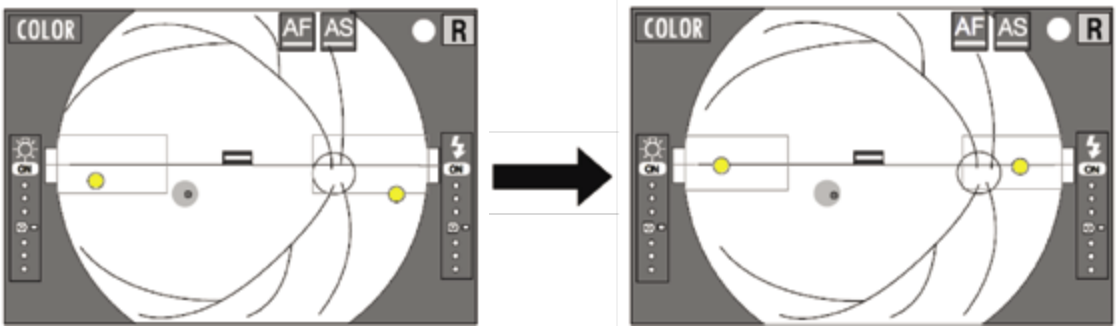

Figure 2. *Back of eye alignment (white dots highlighted in yellow)*

Note: try moving only the joystick when at the back of the eye with one hand and use the other hand to steady the base.

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5. Take the photograph

- Once aligned, the camera will automatically take the photograph

Tips:
- Consider entering the patient's details in a dark room to allow the pupils to dilate
- Ask the patient to close their eyes (up to a minute) between photos to allow pupils to redilate

Manual functions - The camera is set up to automatically switch views from the front to the back of the eye, automatically focus, and automatically take the photograph when aligned correctly.

If the automatic functions are on, they are indicated by the following icons:

Auto-fundus – indicates the camera will automatically switch views from the front to the back of the eye

AF **Auto-focus –** indicates the camera will automatically focus the back of the eye

AS **Auto-shot –** indicates the camera will automatically take the photograph

Note:
- At any time if you move the focus wheel, the automatic functions will turn off
- To reset the automatic functions, move the camera back and over to the other eye, and then back to the eye being photographed
- If the pupil is too small or smaller than the inner circle, the automatic functions may not work and you will need to manually control the camera

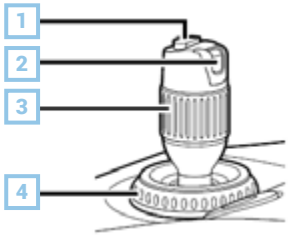

Figure 3. *Operation lever / joystick showing*
1. *the shutter release button*
2. *alignment button*
3. *vertical movement ring*
4. *focus ring*

Manual alignment - Manually change alignment from the front to back of the eye and vice versa by pressing the alignment button (2).

Manual focus - Focus by turning the focus ring (4) by lining up the two white lines into one straight line.

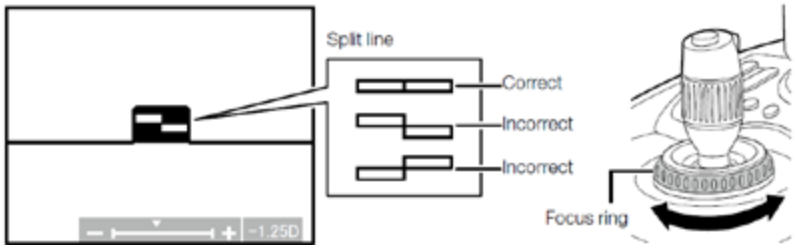

Figure 4. *Manual focussing*

Manual photo taking - Take the photo by pressing the shutter release button (1). You can also do this when it is in full automatic mode and you think you have it lined up well enough to take the photo.

All images from the Canon CR-2 AF manual

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RETINAL PHOTOGRAPHY

PATIENT INSTRUCTIONS

1. **"We're going to take photos of the inside of your eyes, at the back."**

2. **"Just relax for a moment, while I clean the chin rest and set up your details in the system."**

Clean/Sterilize chin rest and forehead rest with alcohol wipe

ADD new/**FIND** existing patient file on camera database & click **RC Capture**

3. **"Please place your chin on the chin rest for me, and press your forehead against the forehead bar."**
   ADJUST height as needed.

4. **"I'm just going to turn off the lights so that we can get a really good photo. Is that okay?"**
   SWITCH off the lights.

5. **"I'm going to photograph the right eye first. Please look straight ahead with both eyes open."**
   START lining up and zooming in.

6. **"Can you see a green light inside the camera? Just keep looking at that spot while I zoom in, and then try not to blink."**

7. **"When the camera takes the picture, there will be a bright flash for a second. Don't worry, it doesn't hurt. It's just bright."**
   PROCEED to take photo of right eye.

8. **"Just close your eyes for a minute, so that your pupils can adjust after that flash. Then we'll swap around and do the left eye.**
   REPEAT process for left eye.

9. **"Just close your again eyes for a minute, then I'll show you the pictures."**
   Click 'REPORT' & click on "Both Eyes" view, ready to show the patient. Select Output or Print as relevant to download report to Patient Management System.

***Developed by Chris Rektsinis**, Eye Health Project Officer, Aboriginal Health Council of South Australia*

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Reviewing retinal photographs on RX Capture software

- **Accessing all photographs**
- **Viewing both eyes**
- **Selecting different photographs**
- **Using filters**
- **Comparing 2 photographs of the same eye**
- **Comparing photographs of the same eye over time**

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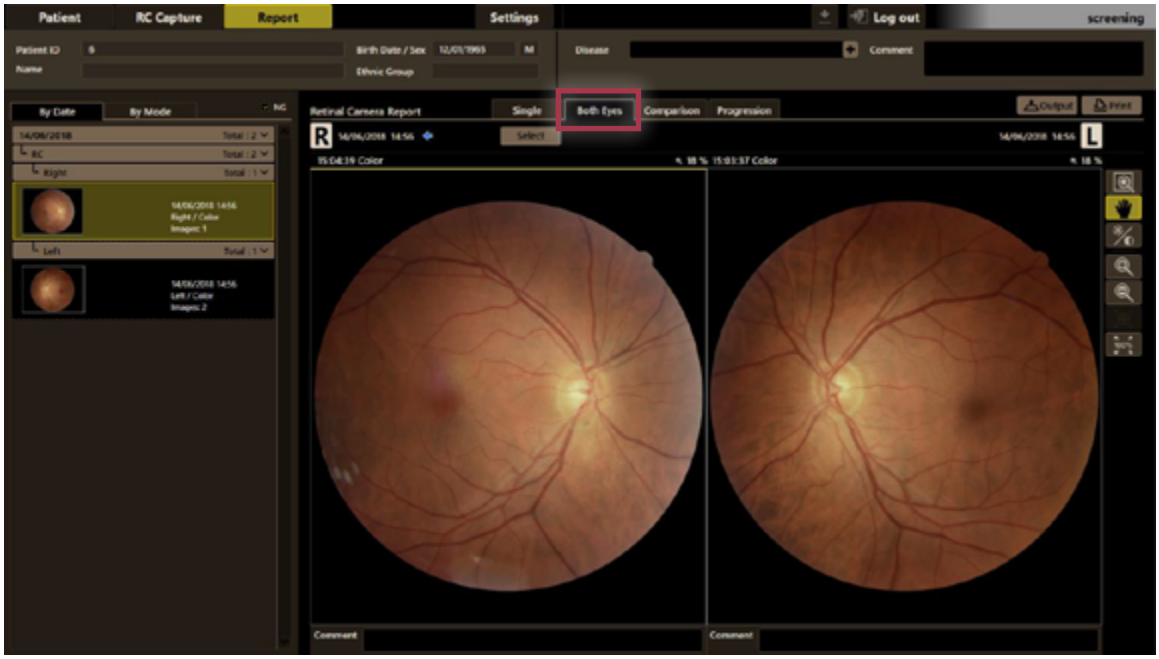
Accessing all photographs

- Go to the Report tab

Viewing both eyes

- Go to Both Eyes



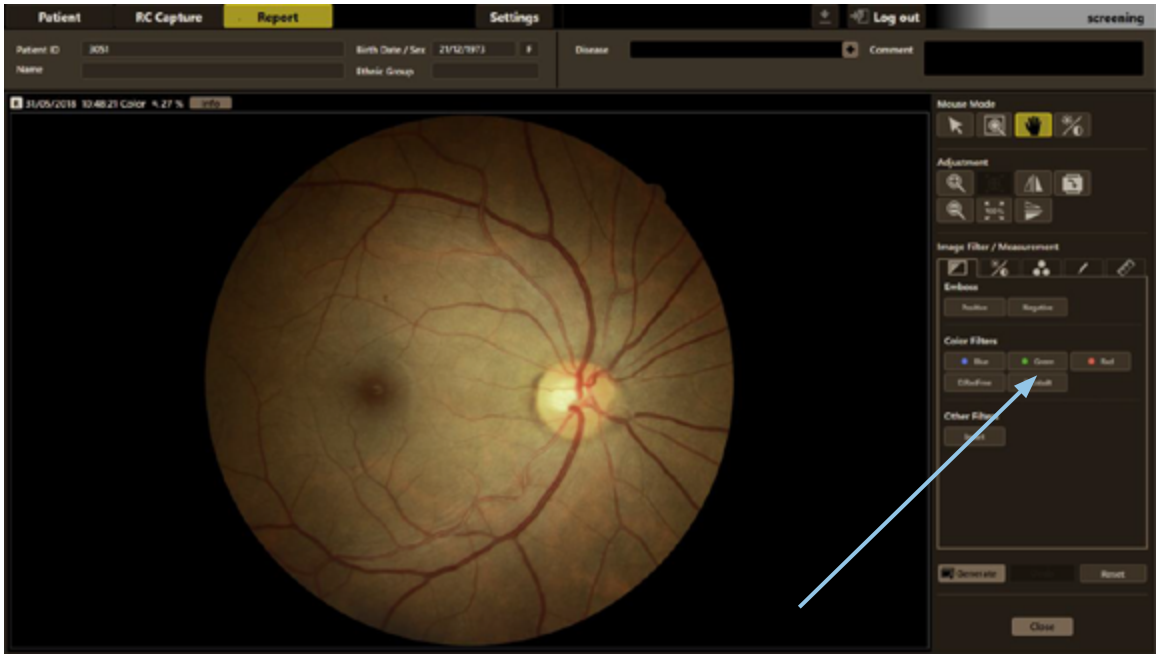
Selecting different photographs

- Click on the photograph to change – there will be a yellow bar (green box) – and click Select

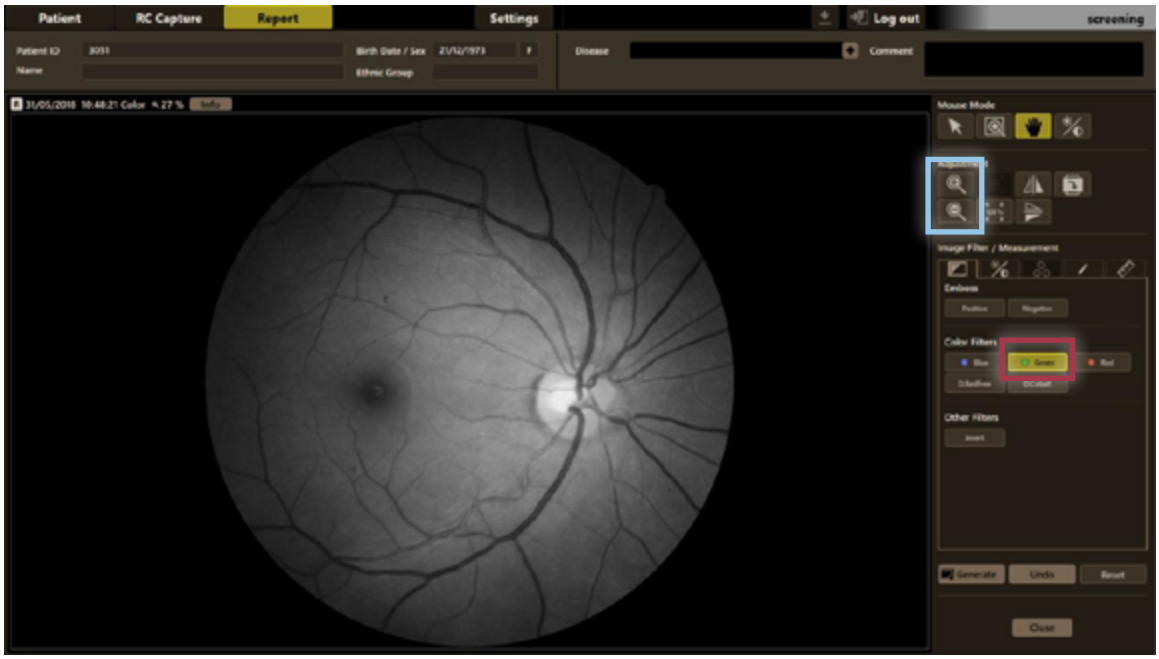
- Select the photograph you want to use and click OK

Using filters

- Using a red-free filter will show the colour red more prominently. This makes it easier to detect changes, such as microaneurysm and haemorrhages.
- Double-click photograph you want to review to see the following screen



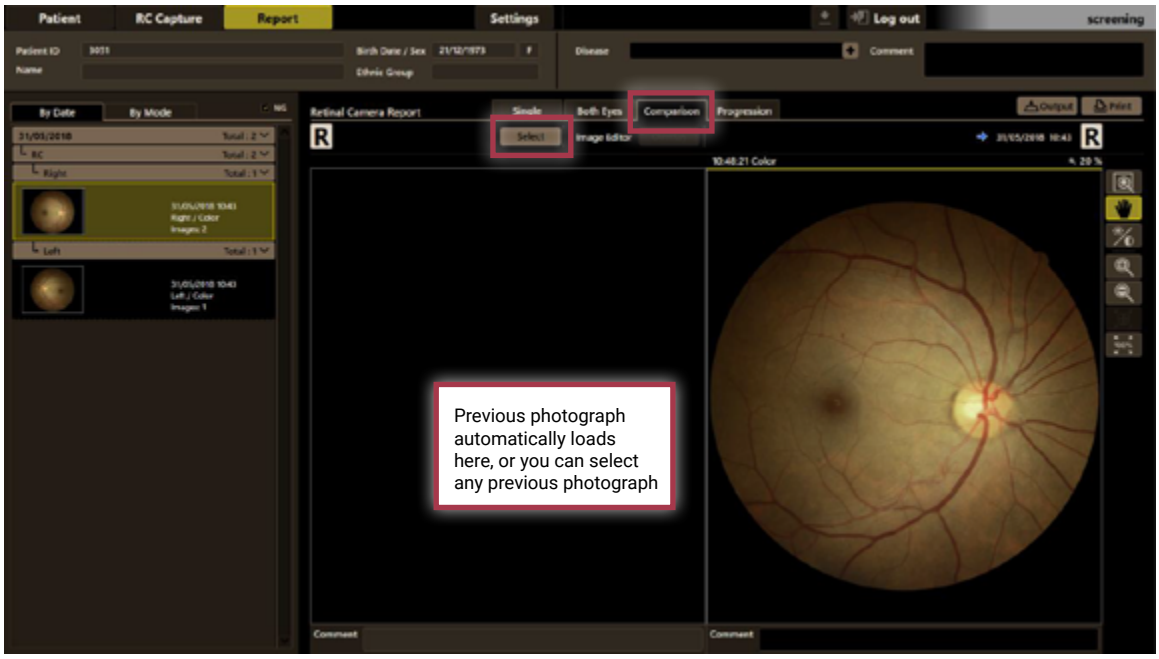
- Click Green for the red-free filter



- You can also zoom in and out with the trackpad or by using the magnifying glasses (green box)
- To exit, click Close

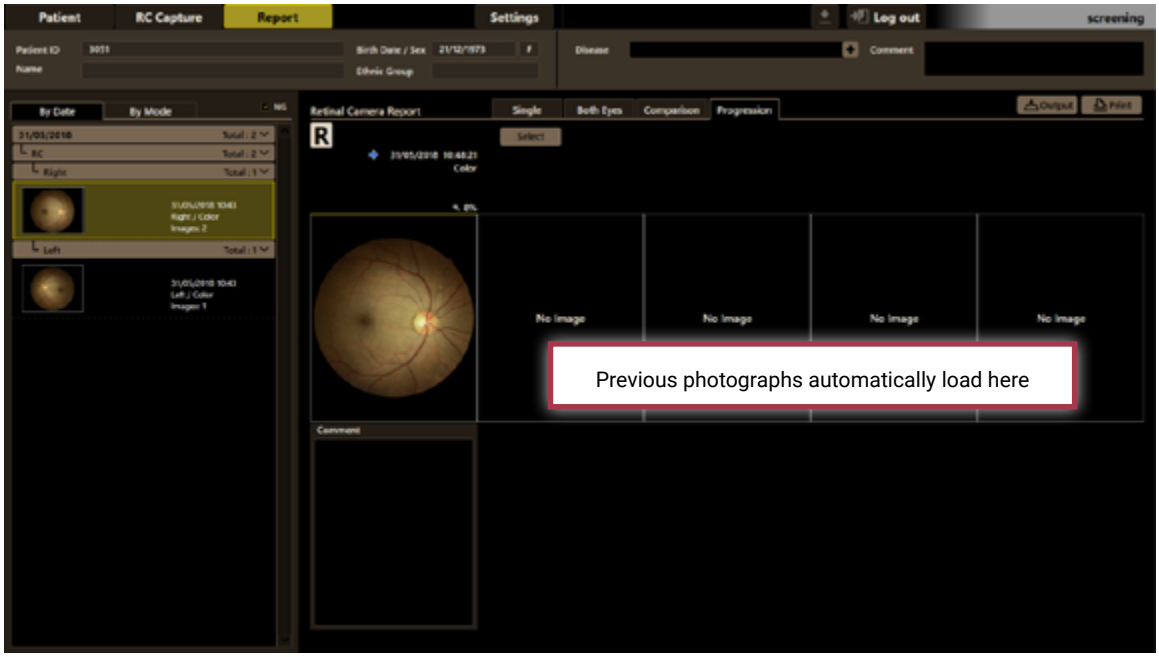
Comparing 2 photographs of the same eye

- Go to Comparison
- You can then select any previous photograph



Comparing photographs of the same eye over time

- Go to Progression



RETINAL CAMERA TRAINING LOG

Retinal Camera Training for Primary Health Care Workers

Location: .....

Participant: .....

Thank you for attending the Retinal Camera Training for Primary Health Care Workers course.

..... will be returning to your health service in approximately 6 weeks' time to provide further support and opportunities for revision.

Please take 15 photographs before our next visit. This will allow you to familiarise yourself with the camera and identify any issues you may be having, so that we are able to help you troubleshoot these at our next visit.

Look forward to seeing you all soon. Keep practicing!

Photograph taken (tick)	Any issues with taking the photo? (Y/N)	If yes, please comment on the issues you had taking the image
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

How many photos did you need to take to feel confident using the camera? .....

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COVID-19 PROTOCOL FOR RETINAL CAMERAS

COVID-19 protocol for retinal cameras

TAKING RETINAL PHOTOS

- **Minimize contact time** by entering patient details into the camera software prior to patient entering the room.
- **Before every patient** be sure to clean any equipment or parts that come in direct contact with patient with 70% isopropyl alcohol and allow to air dry - occluders, pens, pen torches, table, retinal camera forehead rest and chin rest, etc. This is best done in front of the patient for their added reassurance.
- **Please be aware** of parts of the retinal camera which may accidentally come in contact with the patient - e.g. nose touching parts of the camera, patient resting their hands on different parts of the camera.
- **Implement infection control** measures including hand hygiene, respiratory and cough etiquette (handwashing, covering mouth and nose with elbow when coughing/sneezing, avoiding touching eyes, mouth, nose) and other COVID-19 clinical protocols as recommended by local Health Department (e.g. PPE wear)
- **Keep 1.5m away** from patient when possible (stay near the vision chart and behind the camera)
- **Limit what the patient touches** (e.g. patient to stay in designated chair, not to touch Diabetic Retinopathy charts and model eye, etc.)

AFTER PATIENT HAS LEFT CONSULTATION ROOM

Repeat the cleaning procedures outlined above **before** and **after** a patient leaves and routinely at the end of the day.

Surfaces that do not come into direct contact with the patient but is within droplet distance should also be disinfected at least after each clinic day (e.g. laptop, table, camera lens, etc.) and as needed.

To disinfect the camera lens, use 70% isopropyl alcohol using circular motions from the centre outwards and allow to air dry. The alcohol will leave a residue on the lens that will need to be cleaned with a microfibre cloth using circular motions from the centre outwards. Ensure all residue has been cleaned off the lens before using the camera. Residue on the lens may cause an artefact on the resulting photos.

Figure 1. *Example of artefact caused by a smudge on the camera lens*

If you need any further information, please do not hesitate to contact:

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NSW/ACT	Colina Waddell	c.waddell@brienholdenfoundation.org	02 9065 0708
NT	Sarah Nicholls	s.nicholls@brienholdenfoundation.org	08 8981 9880
QLD	Colina Waddell	c.waddell@brienholdenfoundation.org	02 9065 0708
SA	Chris Rektsinis	chris.rektsinis@ahcsa.org.au	08 8273 7200
TAS	Colette Davis	cdavis@aco.org.au	03 9349 7419
VIC	Colette Davis	cdavis@aco.org.au	03 9349 7419
WA	Helen Wright	addismob@gmail.com	

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RETINAL CAMERA TOOLKIT

Section 4b
Uploading photos
to practice software

UPLOADING PHOTOS TO PRACTICE SOFTWARE

4b

The following are examples of how to upload retinal photographs onto your medical practice software. Please note that there are options that may not have been listed here.

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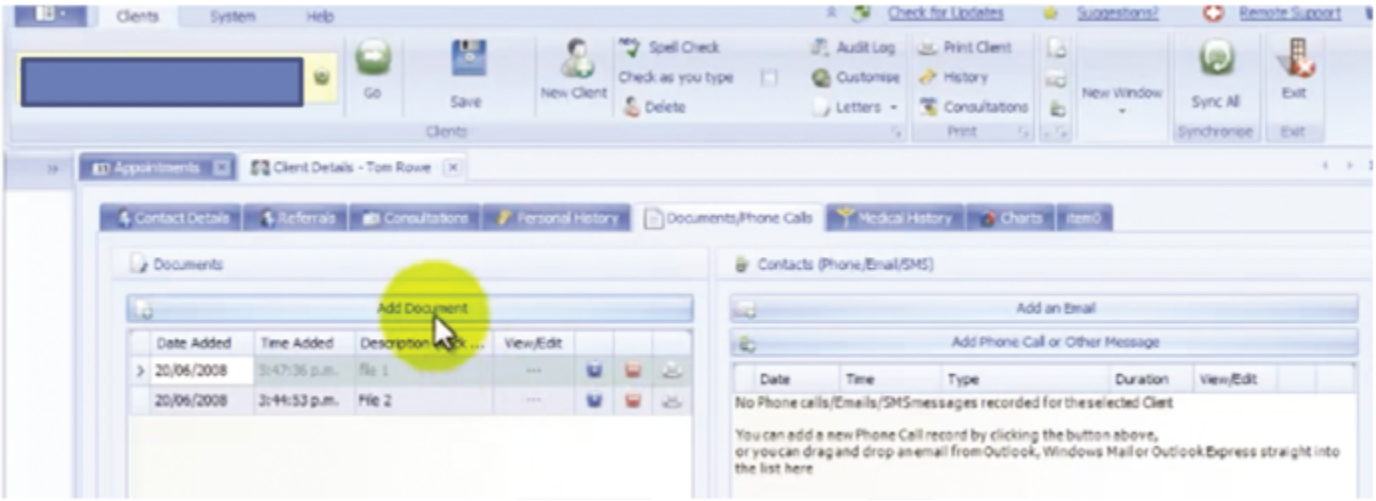
UPLOADING PHOTOS TO PRACTICE SOFTWARE

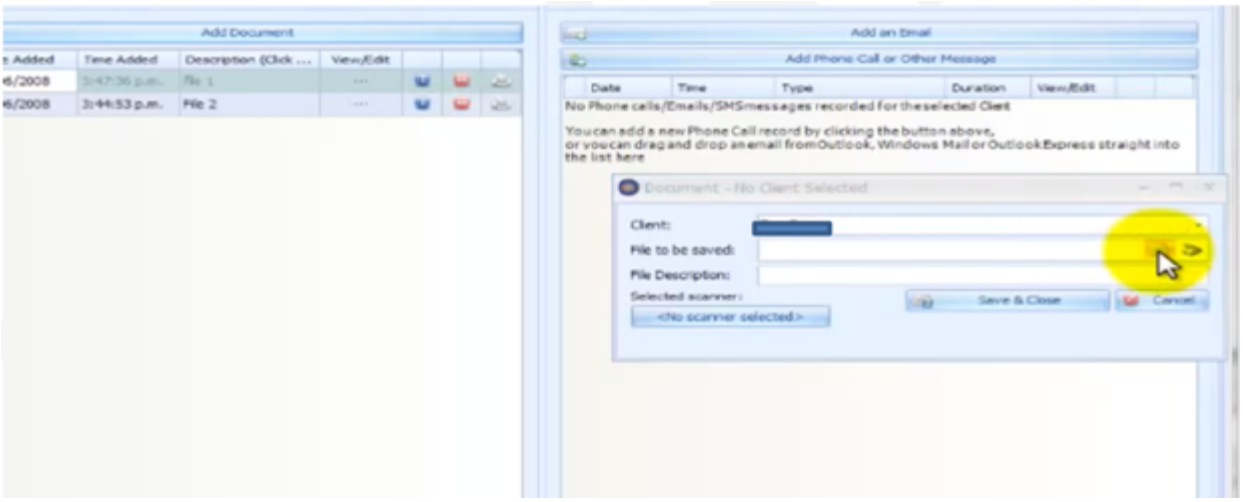
BEST PRACTICE **4b.1**

1. Upload PDF report/JPEG to patient file on Best Practice

- Go to the Patient file
- Press **'Add Documents'** button



- Press **'Add File'** Button



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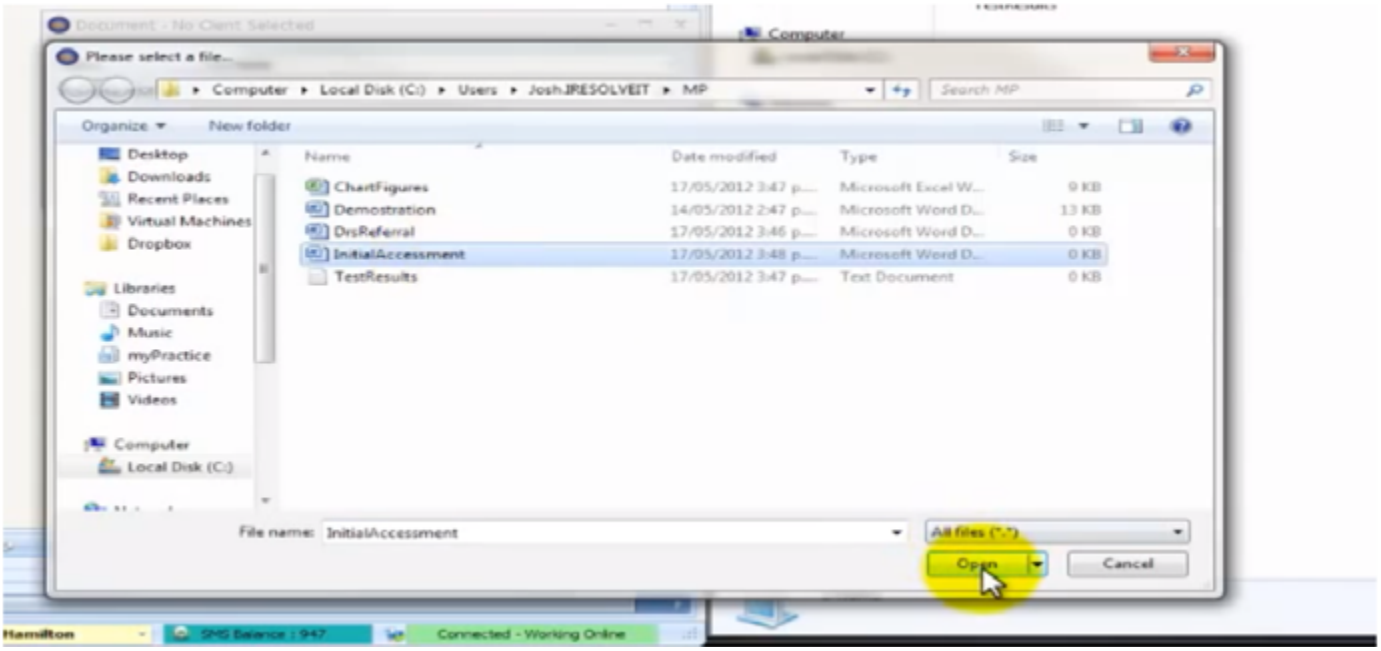
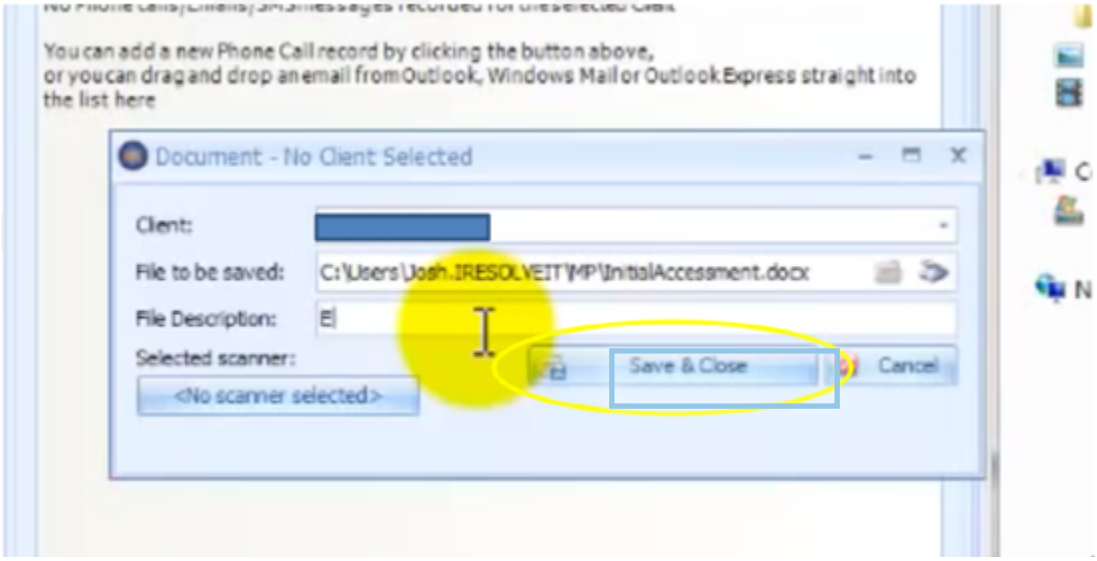
BEST PRACTICE **4b.1**

- Navigate to where the retinal images are located
- Select the file. Press **'Open'**



- Give the PDF report/jpeg image a name.
- Press the **'Save and Close'** button



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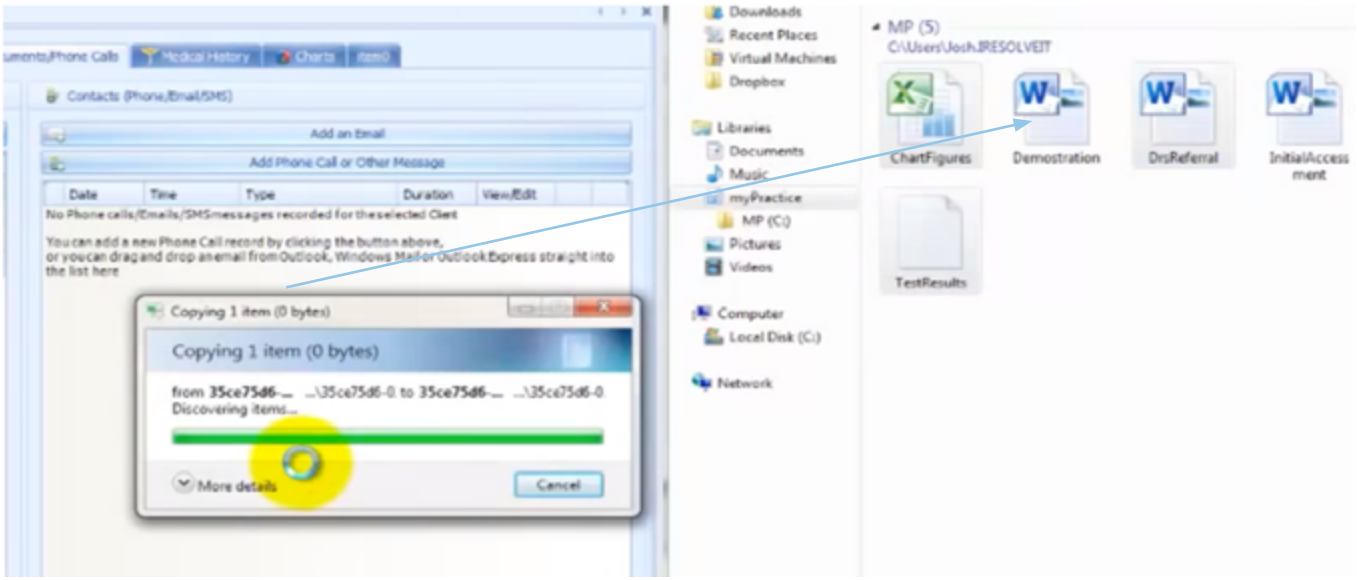
- PDF reports and images can also be dragged and dropped.



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Importing retinal photographs into Communicare

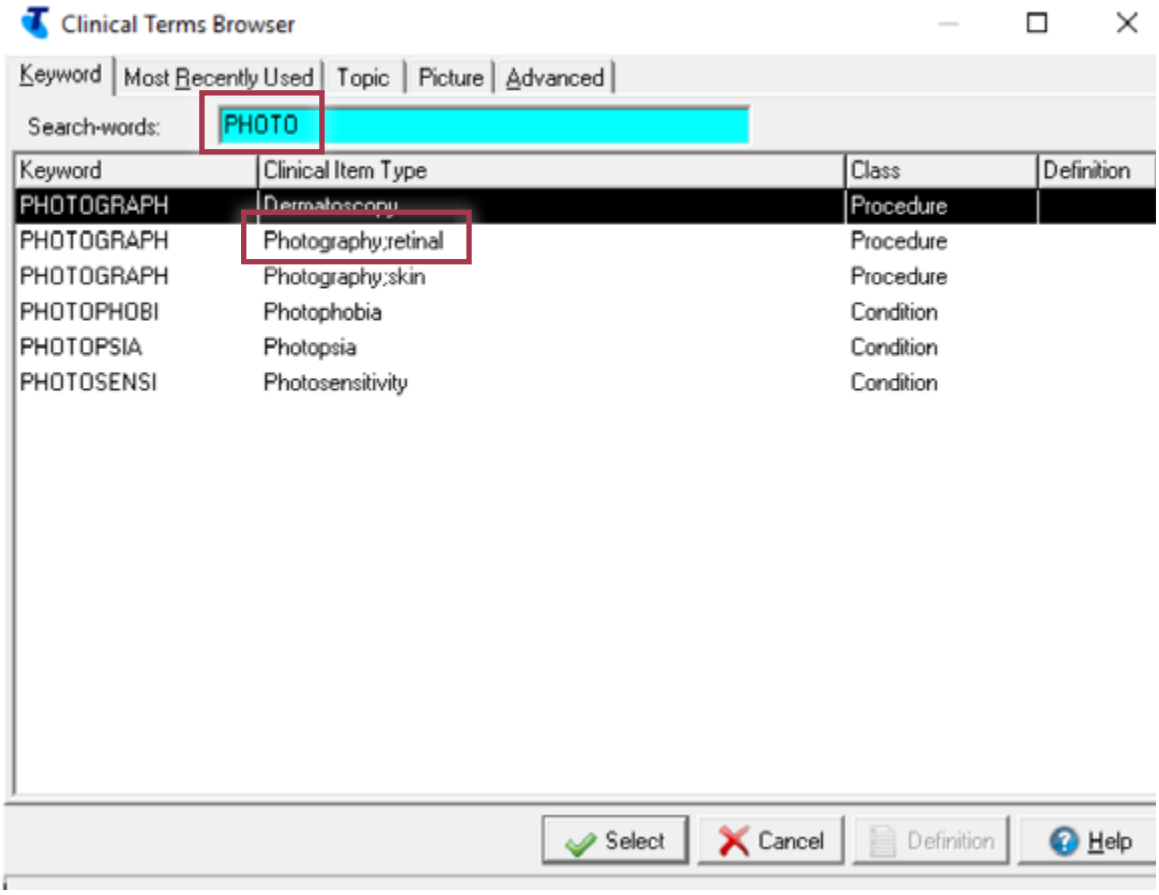
Please note, there are multiple options for uploading retinal photos on Communicare either by a clinical item (option 1) or as a document (option 2). You can also create a photo assessment clinical item (12325/12326), detailed in option 3.

For another method of uploading retinal photos and billing, please see page 9 of *Deadly Sights* document in Section 8.

Option 1: Clinical Item

- Click **'Clinical Item'**

- Search **"photo" and select 'Photography;retinal'**



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- Input relevant data and click **'Save'**

Photography;retinal

	Diabetic retinopathy level Management	
Performed date	01/05/2019	
Visual acuity right eye	Unaided vision	(20/02/2015 6/60)
Visual acuity left eye	Unaided vision	(20/02/2015 6/60)
Visual acuity right eye (corrected)	Aided vision	(No previous values)
Visual acuity left eye (corrected)	Aided vision	(No previous values)
Pinhole Vision - R	Pinhole vision	(No previous values)
Pinhole Vision - L	Pinhole vision	(No previous values)
Retinal photograph - R	Load Image	(No previous values)
Retinal photograph quality - R		(No previous values)
Retinal photograph - L	Load Image	(No previous values)
Retinal photograph quality - L		(No previous values)
Retinal photographs seen by patient	Yes No Blank	(No previous values)
Eye health education provided	Yes No Blank	(No previous values)

- The details will appear in the patient's Progress Notes

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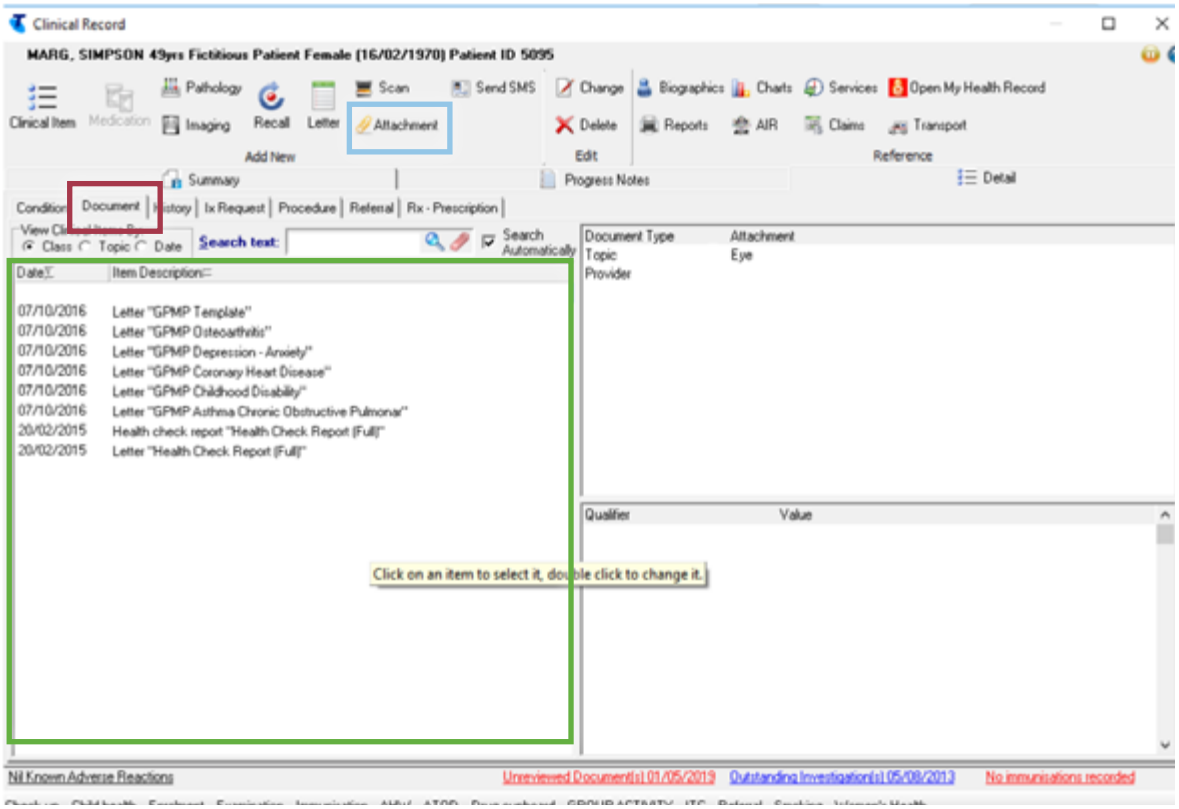
Option 2: Document

- Under Detail > Document, either:
  - Drag PDF report into the green box OR
  - Click '**Attachment**' in the blue box and select PDF to upload



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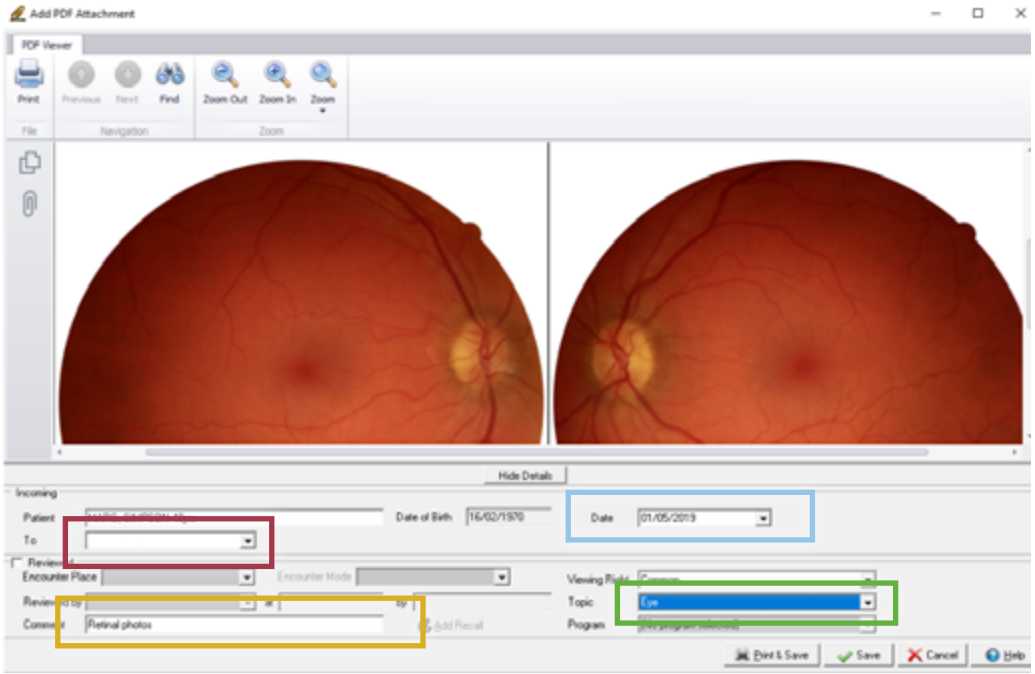
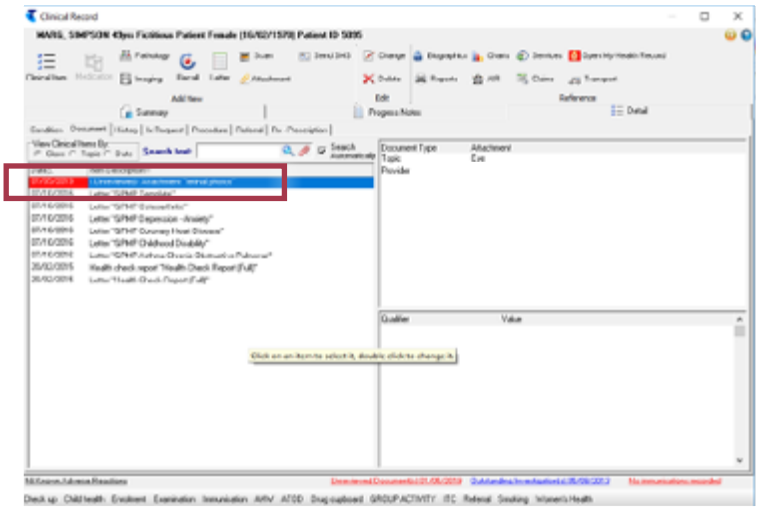
UPLOADING PHOTOS TO PRACTICE SOFTWARE

COMMUNICARE **4b.2**

- Select staff member to review photographs in red box
- Select date photographs taken in blue box
- Select Topic > Eye in green box
- Input “Retinal photos” in comments in orange box
- Click **‘Save’**



- The document will appear unreviewed



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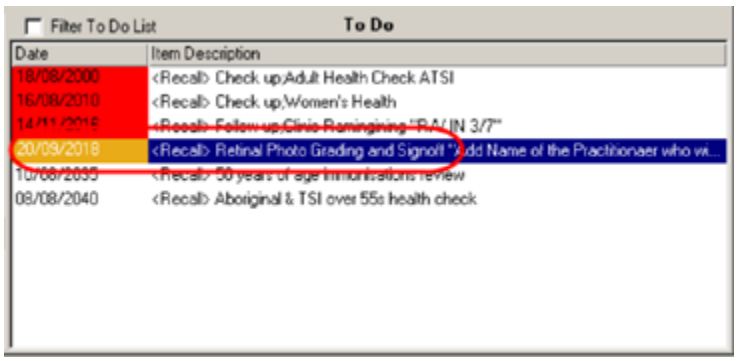
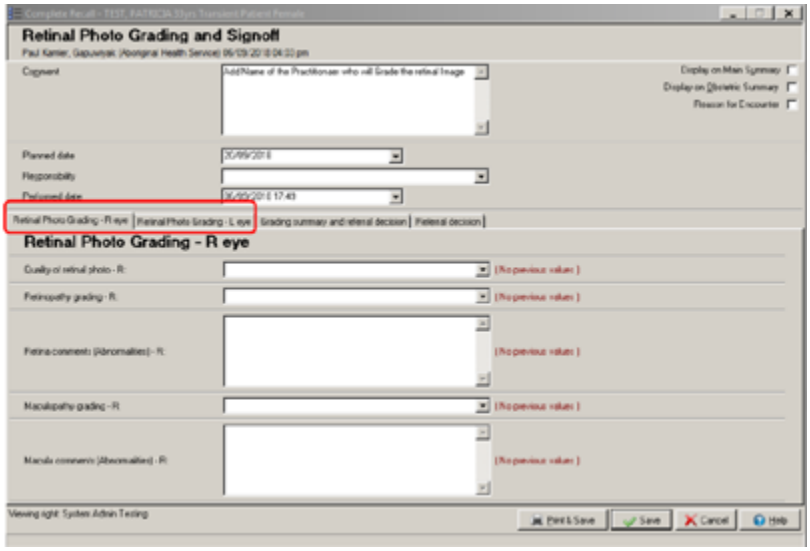
Option 3: Creating a photo assessment clinical item.

Note: this option needs to be set up individually as it is not part of the Communicare package. The following example is used by NT government sites.

- The **Retinal Photo Grading and Signoff** clinical item will have been created on the completion of the **Retinal Photography** clinical item and will be located in the To Do list (recalls).



- Open the item and review the right and left photographs (either by accessing the JPEG files that were uploaded via the Retinal Photography service item, or by directly viewing the photographs on the camera laptop – RxCapture software – if you are based in the clinic where the camera is located).



- Complete each of the tabs, indicating your grading (via the drop-down options) of the retinal photos for R and L eyes, including any comments that may be relevant.
- On the next tab – **Grading summary and referral decision** – provide any relevant comments supporting your referral (triaging) decision.

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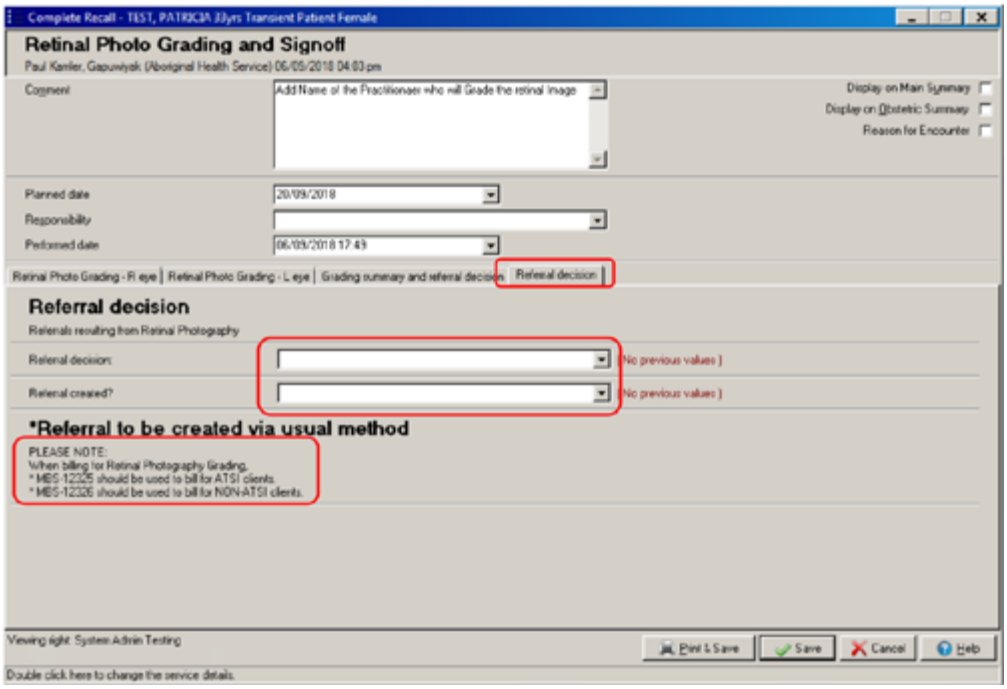
- On the next tab – **Referral decision** – select the drop-down referral option chosen, ensure you **set the referrals/recalls as required** (for Optometry and/or Retinal Photography) and **created a referral letter** where required (when referring to Ophthalmology), and click '**Save**'.



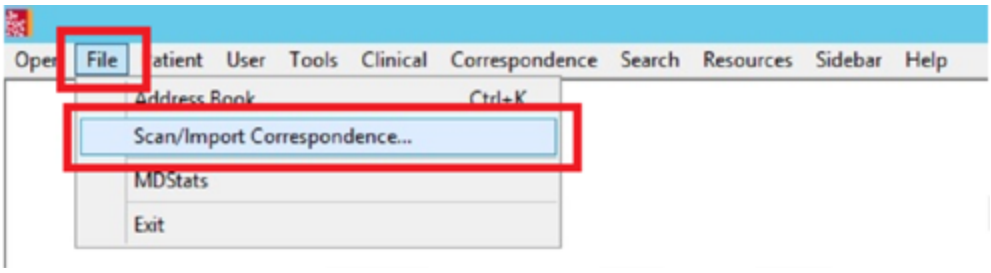
- On completion of the **Retinal Photo Grading and Signoff** service item, MBS Items 12325 and 12326 will automatically default onto the Medicare billing section of the consultation form. If this is a claimable case (i.e. exclusion criteria as per the item descriptors do not apply), proceed to billing one of the following items:
  - MBS 12325 for Aboriginal and/or Torres Strait Islander clients
  - MBS 12326 for non-Indigenous clients

UPLOADING PHOTOS TO PRACTICE SOFTWARE

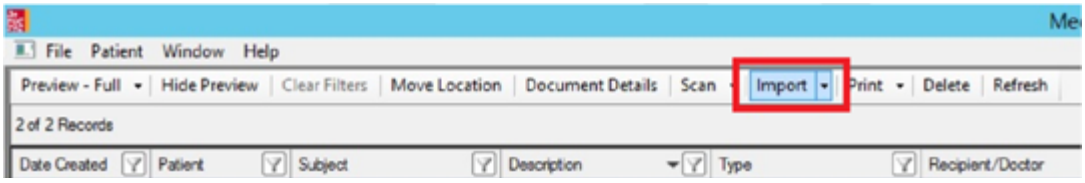
MEDICAL DIRECTOR **4b.3**

Importing retinal photographs into Medical Director

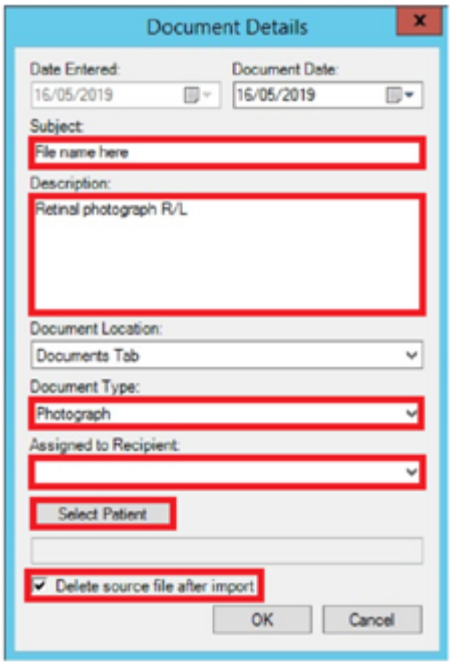
1. Go to File > Scan/Import Correspondence...



2. Click '**Import**' and select file



3. Input the following fields and click '**OK**'



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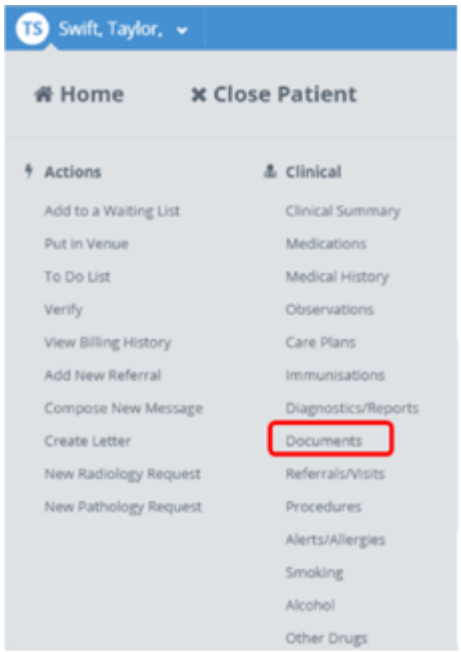
UPLOADING PHOTOS TO PRACTICE SOFTWARE

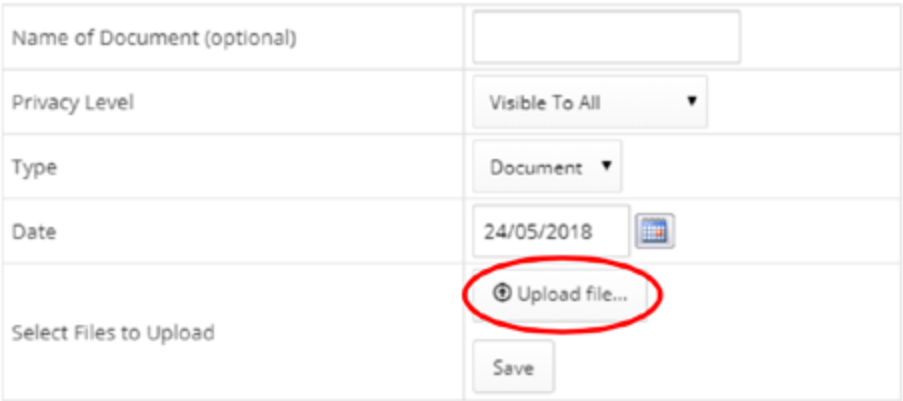
MMEx **4b.4**

Upload of retinal images/reports to the patient file- MMEx

1. **Upload pdf report or jpeg images to patient file on MMEx**
   - Select patient
   - Select **'Documents'** from the Clinical Column



   - Click on the **'Upload File'** button. Type in descriptor in the **'Subject'** field
   - Click on the **'Choose File'** button in the pop-up box and select the file from a location on your computer
   - Click on the **'Upload'** button



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RETINAL CAMERA TOOLKIT

Section 5
Triaging &
Patient Education

Diabetic Retinopathy Guide

The following staging guidelines and referral recommendations are adapted from the Clinical Diabetic Retinopathy and Diabetic Macular Edema Disease Severity Scales, the National Health and Medical Research Council (NHMRC) Guidelines for Management of Diabetic Retinopathy and A guide for General Practitioners on the use of Digital Retinal Photography developed by Optometry Australia (OA).

No diabetic retinopathy

Signs

- *No diabetic retinopathy seen*

Management

*Refer for a comprehensive examination with an **optometrist within 1 year***

Mild diabetic retinopathy

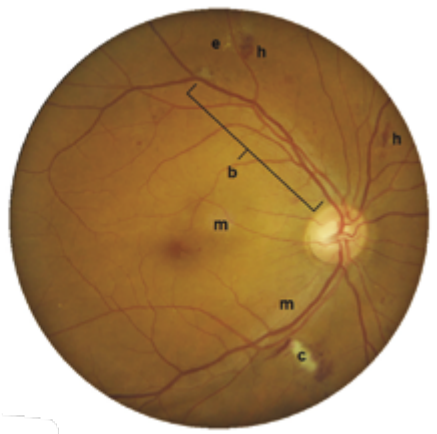
Signs

- *Micraneurysms (m): small outpouchings of the blood vessel walls – appear as small red spots*

Management

*Refer to an **optometrist within 3 months***

Moderate diabetic retinopathy



Signs

- *Micraneurysms (m)*
- *Haemorrhages (h): bleeding due to damaged blood vessels – can be flame, dot or blot shaped*
- *Hard exudates (e): fatty deposits due to leakage of blood vessels and swelling of the retina – well defined yellow lesions or spots*
- *Cotton wool spots (c): swelling of the nerve fibre layer due to reduced oxygen – appear fluffy white*
- *Blood vessel changes (b): due to reduced oxygen supply – blood vessels appear irregular and may loop*

Management

*Refer to an **optometrist* or ophthamologist* within 3 months***

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Severe diabetic retinopathy

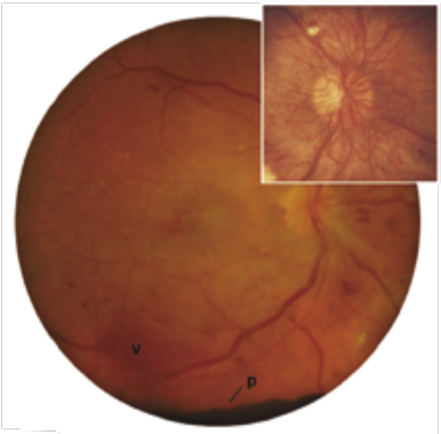
Signs

- *As with moderate diabetic retinopathy, but more widespread microaneurysms, haemorrhages, blood vessel changes (b), exudate (e), and /or cotton wool spots*

Management

*Refer to an **ophthalmologist within 4 weeks***

Proliferative diabetic retinopathy



Signs

- *Neovascularisation (inset): new blood vessels prone toleakage – appear fan-like and feathery*
- *Pre-retinal haemorrhage (p): bleeding in front of the retina–typically well-defined and dark coloured*
- *Vitreous haemorrhage (v): bleeding into the jelly insidethe eye – appears hazy and blocks view of the underlyingretina*

Management

*Refer to an **ophthalmologist within 1 week***

Macular oedema

Signs

- *Macular oedema: swelling of the macula*
  - *Often indicated by the presence of hard exudate (e) inthe macula area*
  - *Swelling may occur without exudate – macula mayhave a cloudy appearance (difficult to visualise in a photograph)*
- *Can occur at ANY stage*

Management

*Refer to an ophthalmologist **within 4 weeks***

National Health and Medical and Research Council Guidelines for Management of Diabetic Retinopathy (2008)
https://www.optometry.org.au/wp-content/uploads/Professional_support/Guidelines/nhmrc_diabetic_guidelines.pdf

Optometry Australia A guide for General Practitioners on the use of Digital Retinal Photography (2017)
https://www.optometry.org.au/wp-content/uploads/provided/GPs_Healthcare-professionals/GPs/gp_retinopathy_flowchart_a4_2017.pdf

Wilkinson, C. P., Ferris,F. L., III, Klein, R. E., Lee, P. P., Agardh, C. D., Davis, M., Dills, D., Kampik, A., Pararajasegaram, R. and Verdaguer, J. T. (2003) Proposed international clinical diabetic retinopathy and diabetic macular edema disease severity scales. Ophthalmology. 110(9), 1677-1682

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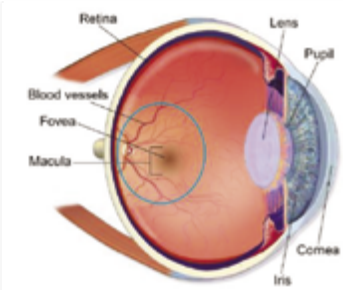
PATIENT EDUCATION

DIALOGUE GUIDE

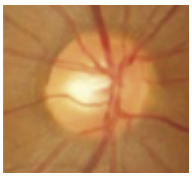
ENSURE you have marked unusable photos as 'NG' & save good photos as a report.

ASK patient to come around to your side and see their photos.

1. **"So we've just photographed the back of each eye. It's called the retina.** ***POINT to retina on the screen with a sweeping circular hand motion and mirror this on the 3D eye model, so they know what you've photographed.***



2. **"This is the part of your eye that makes up a picture of what you see, and the nerve sends that picture to the brain."** ***POINT to the nerve.***



3. **"See this part here?"** ***POINT to the macula.*** **"This is your macula. It's like the 'high definition' part of your retina, for sharper focus and the centre of your vision."**

4. **"For people with diabetes, the retina and macula might stop working properly because the blood vessels get damaged. It's called Diabetic Retinopathy."**

5. **"Can you see all these blood vessels?** ***POINT to blood vessels in the photo.*** **"These can get weak from the sugar, and get tiny holes or tears, which can then leak blood and fat into the eye".** ***If present, POINT to any blood spots or fat spots in the photo. If not present, use the Diabetic Retinopathy grading sheet for example.*** **"See those? They shouldn't be there. You need to see the optometrist, to see how bad it is and what to do."**

Developed by Chris Rektsinis*, Eye Health Project Officer, Aboriginal Health Council of South Australia*

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PATIENT EDUCATION

DIALOGUE GUIDE

6. **"The problem is - your vision is usually fine in the beginning, so you won't know if you have it, and the only way we can find out is to look inside your eyes and see if the blood vessels are damaged from the sugar."**

7. **"If it doesn't get detected or treated, you could lose part of your vision, having patches missing from what you can see, OR other vision problems."**
   ***ASK** patient to put on white simulator glasses. Get them to describe what they see – e.g. patchy, speckly, can't see all around, parts of vision 'blocked'.*

8. **"If we catch it early, we can treat it easily and stop it from getting worse."**

9. **"But if we don't, then we can't really fix it… you will lose parts of your vision, and the treatments become much more difficult, or just won't work at all."**

10. **"If this is happening in your eyes, it might be happening in the rest of your body too. This is why we are checking this today and the optometrist will check the parts we can't see in the photo."**

11. **"So it's really great you've done this today, and we'd like you to see the optometrist. Thanks again for coming in."**

***Developed by Chris Rektsinis**, Eye Health Project Officer, Aboriginal Health Council of South Australia*

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RETINAL CAMERA TOOLKIT

Section 6
Embedding Retinal Photography to Clinical Practice

Setting Targets for Retinal Photography

1. Background

When implementing the retinal camera, a good way to measure impact is by having a targeted approach and setting goals. The following are some examples and potential ways your practice can use to ensure appropriate targets are set.

	ACTIONS	EXAMPLE	PERSON RESPONSIBLE	TIMEFRAME
Identify Service Gaps	Generate support status report	Number of active patients with diabetes Number of active patients with diabetes who have never had an eye examination Number of active patients with diabetes who have had an eye examination in the last 12 months		
Design Action Plan	Tackle Identified Gaps	Opportunities intervention (Chronic Disease Days, MBS 715, MBS721) Targeted intervention (Retinal camera promotion, Diabetic Education days, Recall for retinal screening)		
Set Targets	Set reasonable targets	Number of retinal photos taken Number of active patients with diabetes Number of active patients with diabetes		
Review Targets	Are the targets still appropriate?	Does the action plan need to be modified Were targets realistic? Do the targets need to be modified? Are there any gaps that still need to be addressed?		

2. Identifying Gaps

There may already be targets and goals that you have in mind, however, it would be useful to review the current status of the practice to help identify any gaps.

Each software management system should be able to produce a report on items of interest; overleaf are a few examples:

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- Number of people with diabetes currently seen at the practice
- Number of people with diabetes who have had an eye examination in the last 12 months
- Number of people with diabetes has never had an eye examination
- Number of people with diabetes has had an eye examination in the last 12-36 months
- Number of people recently diagnosed with diabetes
- Number of people over 40 years old with diabetes

Once gaps are identified, targets can be set. For example, if only 30% of patients with diabetes are currently having an eye examination every year, how can this be increased?

Design an Intervention/Action Plan

The retinal camera is a useful tool to engage diabetic patients, however, patients need to know about it and attend the screening session. A good Action Plan should include ways to introduce patients to the tool.

- Are there any current intervention that this can be embedded to e.g. Chronic Disease Day, Diabetes day, MBS items 715 (Aboriginal and Torres Strait Islander Peoples Health Assessment) and/or 721 (Preparation of a GP Management Plan (GPMP)), Diabetic Educator appointments.
- Promote the retinal camera and retinal photos
  - Retinal camera promotional banner
  - Opportunistic promotion during clinic visits – e.g. during 715 or 721 visits, other clinic staff to mention to patient, especially those involved in diabetic care (e.g. Diabetic Educator, podiatrist, nurse, Aboriginal Health Worker, Aboriginal Health Practitioner, GP)
- Targeted intervention
  - Schedule a retinal photography day
- Recalls

3. Set targets

The following can be targets:

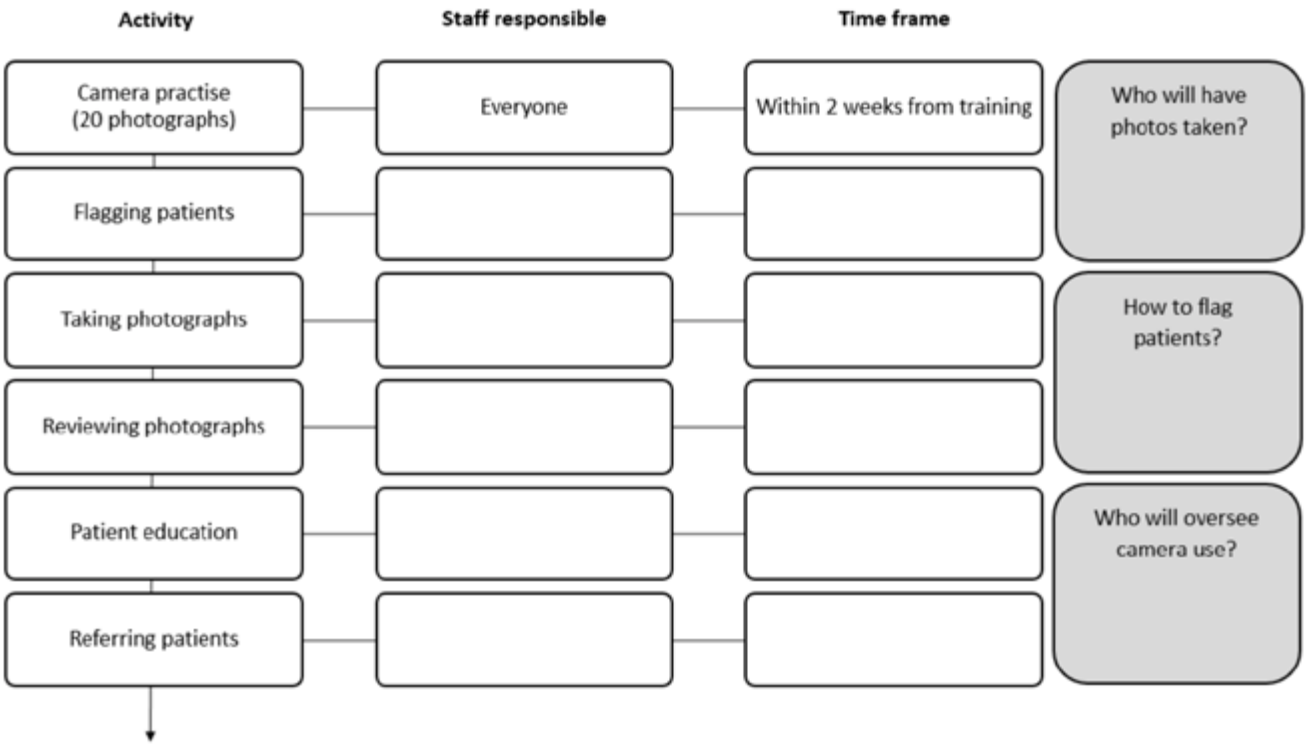
- Number of retinal photos taken – with diabetes or without diabetes.
- Number of MBS items (12325 or 12326) claimed
- Number of diabetic patients referred for comprehensive eye examination (i.e. to optometrist or ophthalmologist)
- Number of patients educated using the retinal photographs

Set target dates

The targets should have a deadline. For example increase number of patients screened using the retinal camera to 50% within 3 months.

Appoint staff responsible to achieve targets

Allocating the task to specific persons will establish accountability to achieve the targets. A flowchart such as the example earlier or the one below can be used.



4. Reviewing the targets

The targets should be reviewed periodically to ensure that they are still appropriate. The action plan may also need to be altered to target different areas.

The following are a number of things that can be considered when reviewing the targets:

- If targets were not achieved, what can be modified to improve this, were there mitigating factors that caused this
- If targets are consistently not achieved, are the targets realistic, should they be modified?
- If the targets are consistently achieved – considering setting higher targets or reassess to see if there are any other areas that can be expanded to (e.g. if originally targets were only set for diabetic patients, would other patients in the practice also benefit from retinal screening e.g. cardiovascular patients, those who have never had eye examinations).

Retinal Camera Promotional Materials

To promote and encourage patients to have retinal photograph taken, the Provision of Eye Health Equipment and Training (PEHET) project is providing promotional materials. These materials include promotional banners and pamphlets and are free of charge until December 2021.

All promotional materials will be personalised to include your clinic/ health service logo and a photo of your staff using the camera.
For more information and to order yours, please contact Colina Waddell on c.waddellbrienholdenfoundation.org or 02 9065 0708.

Stock photo: *(if you don't want to use your own)*

Banner Option 1 - Pull Up Banners

Approx 2245mm x 810mm and includes base. This banner folds up to the following size: 820mm x 110mm x 110mm for easy storage and travel.

Option 1A *– Regular background*

Option 1B *– Dark background (if used in outdoor, dusty area)*

Example *of pull up banner in use*

Banner Option 2

1000 x 60 mm in size with 4 eyelets in the corner.

Option 2A *– Regular background*

Option 2B *– Dark background (if used in outdoor, dusty area)*

Pamphlets

- DL size pamphlets; two sided – the front side matches banner image, the back side contains brief information on diabetic retinopathy and retinal photography screening
- Includes Clinic/Health Service phone number
- Order up to 250 copies for free

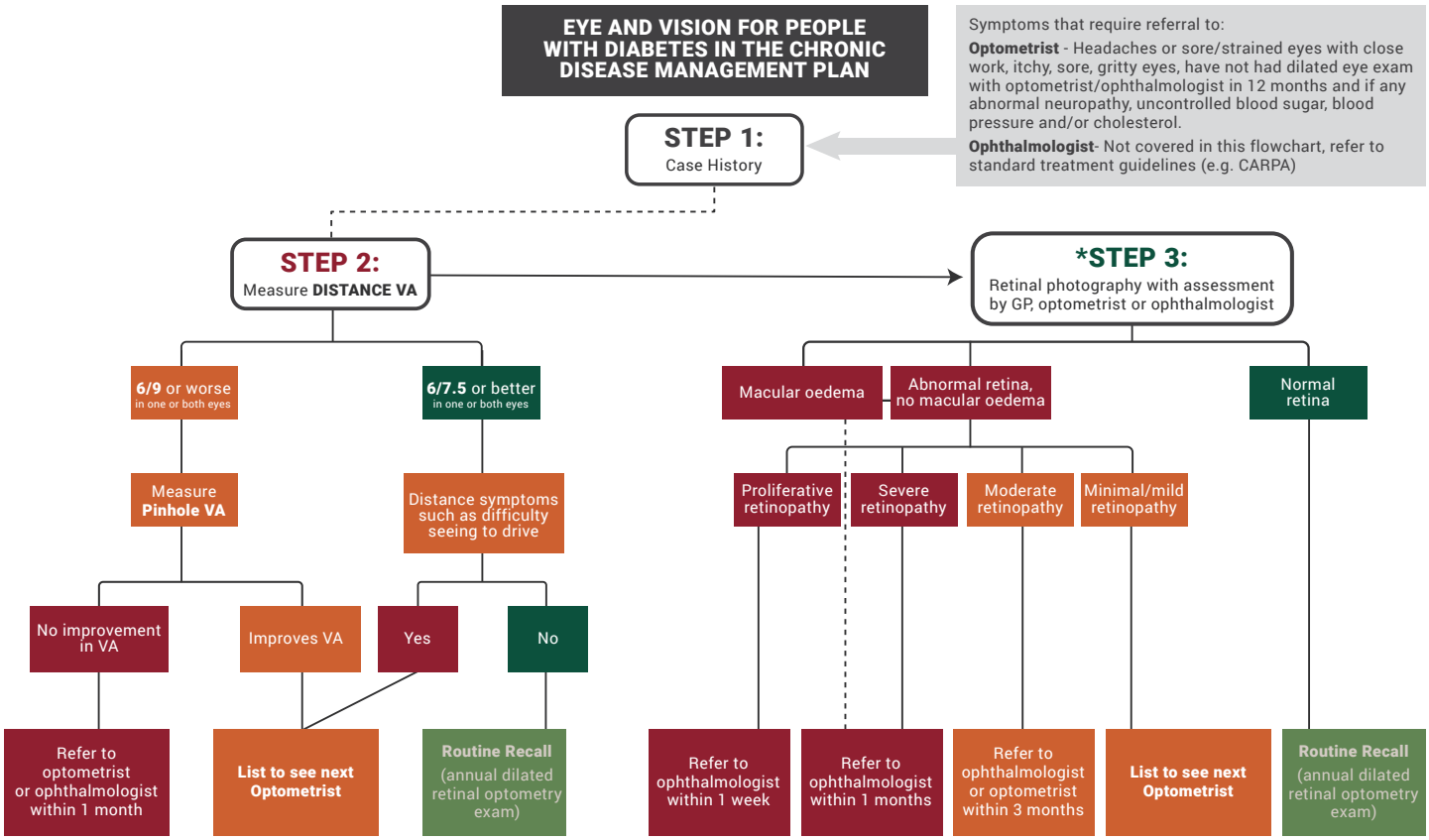
Front

Back

DIABETIC RETINOPATHY PHOTOGRAPHY REFERRAL PATHWAY

6.3

Diabetic Retinopathy Photography Referral Pathway



* If you do not have access to an organised system of retinal photography, refer to the optometrist for an annual dilated retinal exam.

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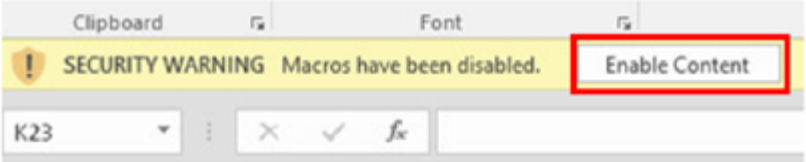
GENERATING RETINAL PHOTOGRAPHY USAGE REPORT

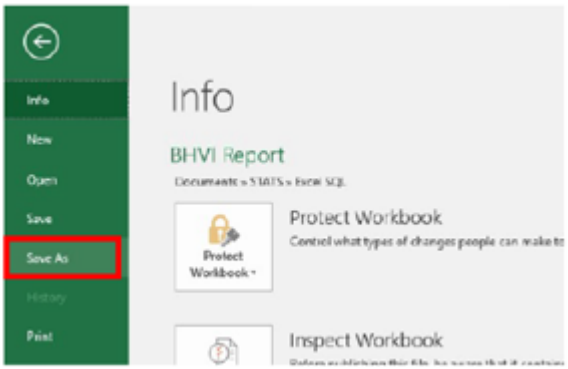
Generating the Usage Report

Double click the "BHVI Report - shortcut" icon on the desktop

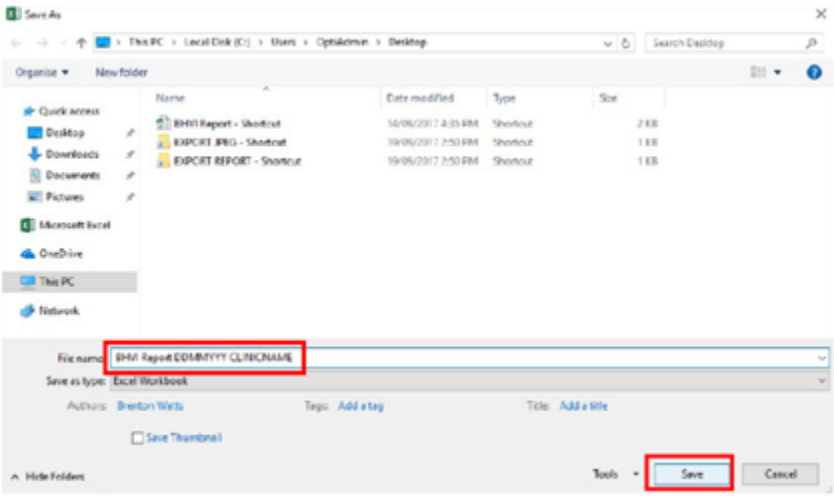
1. The Excel spreadsheet will automatically load the data
   Note: <u>if the data doesn't load</u>, you will need to click "Enable Content"



2 Go to "File" > "Save As"



3. Save the file in a location of your choice
   Note: name the file in the following format: **BHVI Report DDMMYYYY CLINICNAME**



Gidgee Healing

"All Eyes on Normanton — a success story of embedding diabetic retinopathy screening into clinical processes and pathways"

Summary

Diabetic Retinopathy (DR) screening is a useful tool in preventing sight threatening vision loss and in diabetes management. It is important to embed retinal screening within clinical processes to ensure success, and that primary health care (PHC) staff are empowered to fully utilise DR screening to maximise its benefits to patient care. PHC staff are key players within a multidisciplinary diabetes health care team — effective communication and collaboration within the diabetic health care team results in optimum patient care, including improved metabolic control and reduced cardiovascular risk factors. DR screening has the capacity to increase patient awareness about diabetes, facilitate early detection, assist in diabetes management and treatment, and prevent avoidable vision loss.

DR screening does not replace the need for annual dilated ocular fundus examinations for Aboriginal and Torres Strait Islanders with diabetes [1] [2], however, PHC clinics that embrace retinal screening facilitate integration of eye health into PHC. Gidgee Healing Normanton Primary Health Care Clinic provides an excellent example of a successful retinal screening model within a remote Aboriginal Community Controlled Health Organisation (ACCHO) PHC clinic setting. DR screening is integrated within the clinical eye health model through well trained and engaged PHC staff, on-site image triaging, focusing on utilising DR screening for patient education and patient triaging of Diabetic Retinopathy, and good communication both within the team and with the visiting optometrist and regional eye health coordinator.

"Staff have found DR Screening to be a very powerful tool and has resulted in cases of dramatically improved metabolic control, better control of blood pressure and cholesterol, and increased engagement in diet and exercise programs."

Key Elements for Success

- Diabetic Retinopathy Screening is embedded in clinical processes (cycle of care, patient education, chronic disease management).
- Diabetic Retinopathy Screening is recognised as a key entry point to the eye health system.
- Clinical processes in place to ensure MBS Item 12325 is billed when appropriate.
- The visiting optometrist and regional eye health coordinator have included DR Screening as an essential element of the eye health model, and promote its use during visits.
- Diabetic Retinopathy Screening is utilised by the multidisciplinary diabetes health care team in the PHC for patient education.

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Gidgee Healing Normanton Diabetic Retinopathy Screening

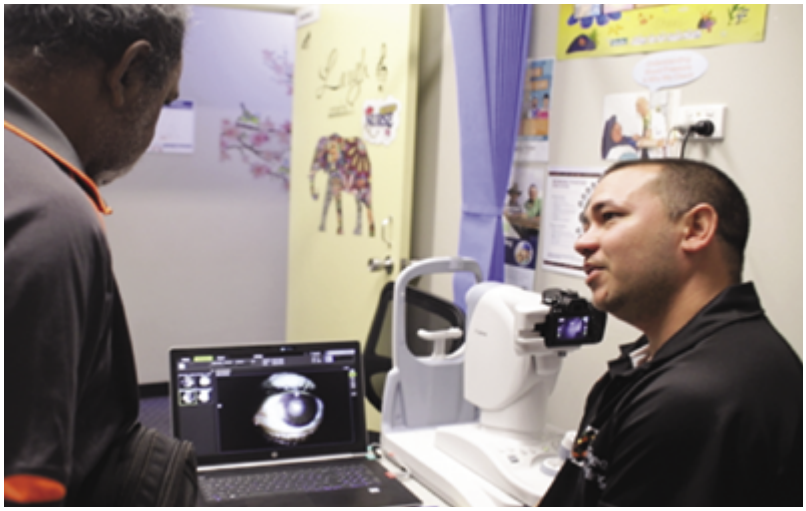
Introduction

Diabetic retinopathy (DR) is a sight threatening diabetes complication. Indigenous Australians are more likely to experience vision loss from DR than non-Indigenous Australians, yet only around half of Indigenous Australians are having the recommended annual retinal check to detect DR [3]. With early detection, DR is often treatable and further progression can be prevented. Furthermore, retinal photography is a valuable tool in patient diabetes education, whether DR is present or not. The Provision of Eye Health Equipment and Training (PEHET) Project funded by the Federal Government aims to support the uptake of retinal screening and the MBS items 12325 and 12326; it comprises the supply of a non-mydriatic retinal camera, training in DR screening and triaging, and support in embedding DR screening into clinical processes in 161 Primary Health Care Services (PHC) around Australia servicing Indigenous Australians.

Gidgee Healing Normanton

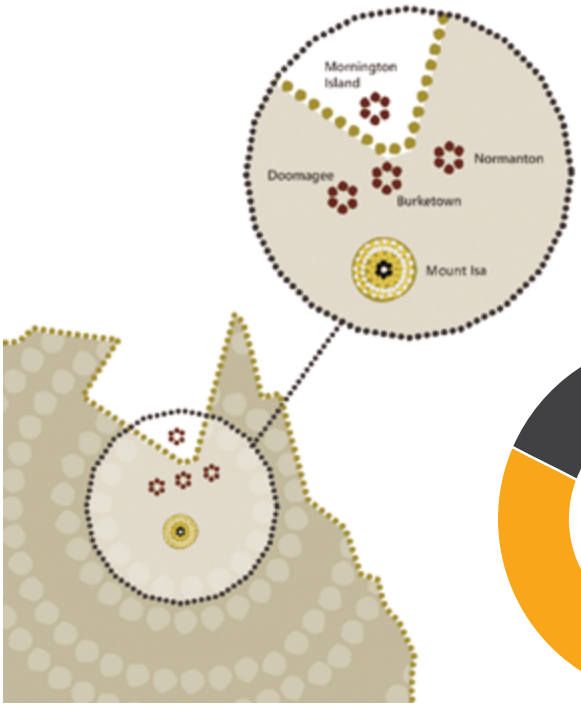
Gidgee Healing is geographically the largest Aboriginal and Torres Strait Islander Community Controlled Health Organization (ACCHO) in Queensland, with 5 PHC clinics (including Normanton) across North West Queensland and over 9,000 active clients. Normanton is a remote community, with a total population of 1,300 (almost 60% who identify as Aboriginal and/or Torres Strait Islander; and a median age of 27 years) [4] and the closest permanent eye health practitioner (optometrist) over 5 hours travel away in Mt Isa. In November 2018, Gidgee Healing Normanton received a retinal camera and training in DR screening through the PEHET Project to service approximately 230 registered patients with diabetes. Two Aboriginal Health Workers, a nurse and a facility officer completed the PEHET DR screening training; The GP and practice manager have completed the PEHET DR triaging course.

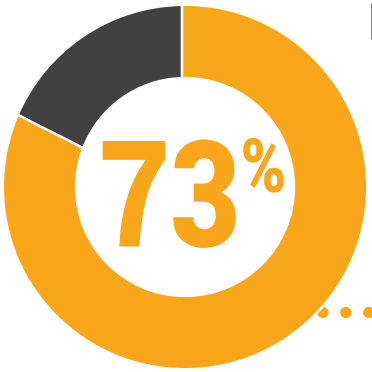
Advocacy by Gidgee Healing ACCHO during 2019 resulted in the introduction of Visiting Optometry Services (VOS). An optometrist now visits for a week every 2 months and a Regional Eye Health Co-coordinator (REHC) was appointed in June 2019. DR screening has become an integral component of multidisciplinary chronic disease management and during 2019 almost 75% of the registered diabetic patients at Gidgee Healing Normanton undertook either DR screening and/or a full comprehensive dilated retinal examination. Embedding DR screening into the PHC Clinic has increased awareness about eye health within the Community and amongst the PHC staff, and pathways into comprehensive eyecare.



Cameron Leon - Previous Regional Eye Health Coordinator

GIDGEE HEALING NORMANTON





73% of Indigenous patients with diabetes in Gidgee Healing Normanton received a retinal check during 2019 compared to 53% nationally

Use of Diabetic Retinopathy Screening in Gidgee Healing Normanton DR Screening Process

- All patients with diabetes undertake screening when attending clinic (opportunistically and on scheduled chronic disease clinic days).
- Aboriginal Health Workers (AHWs) measure VA (pinhole where indicated) and take retinal images.
- All images are immediately shown to clients and utilised for patient education; including an explanation as to what DR is, the risk factors, and the potential for permanent sight loss. Photo education tools regarding the different degrees of DR are presented, and information regarding the similar effects on other organs in the body and feet. The limitations of DR Screening and the need to maintain regular yearly, comprehensive, eye examinations with the visiting optometrist and the importance of eye health are also included in patient education by the AHWs.
- DR Screening reports, including the retinal images and VAs are transferred to each patient's electronic medical record (Best Practice) via USB.
- On the same day as DR Screening, the GP (or practice manager if GP away) triages the retinal images, actions any necessary referrals, and bills MBS item 12325 if appropriate.
- Where the client consults with the dietician, exercise physiologist or other Allied Health Professional, the DR screening report is often utilised again as an education tool to promote healthier lifestyle choices and complying with medications.

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Triaging Patients for diabetic retinopathy

1. For those with **no sign of DR**, Visual Acuity (VA) better than 6/9, and no symptoms of eye problems or change in vision, **a non-urgent optometrist appointment is made**, and a recall for a future DR screening check is set up for one year.
2. For those with signs of **mild DR and no macular oedema**, VA worse than 6/9, other eye/visual complaints or if the photo is ungradable, the client is **referred to the next scheduled visiting optometrist clinic** for further assessment.
3. For **more severe signs of retinopathy requiring treatment**, the client is referred for an urgent or semi-urgent appointment to the regional ophthalmology service in Mt Isa.

All appointments with the optometrist and ophthalmologist is made on the same day of screening. Gidgee Healing support clients by lodging a (Queensland Health) patient travel form and providing transport to and from the plane for their flights into Mt Isa and the hospital where necessary.

Patient Education — engaging clients in diabetes self-management

Patient education and discussion of the photographs are performed at the time of screening, the results of which has been outstanding at Gidgee Healing Normanton Clinic. The Aboriginal Health Workers, General Practitioners and Visiting Allied Health Practitioners, in particular, utilise the retinal images in clinic. **Staff have found DR Screening to be a very powerful tool and has resulted in cases of dramatically improved metabolic control, better control of blood pressure and cholesterol, and increased engagement in diet and exercise programs**. It is through patient education that Normanton has achieved terrific success in embedding DR Screening into clinical processes and raising awareness of eye health in the Community.

"When patients come through, they have no idea about the importance of eye health [...] so to take a retinal photo and explain what we are looking for [with DR Screening]... education... [makes] them aware"

Josephine Bond (Senior AHW, Gidgee Healing Normanton PHC Clinic)

"One of the problems with diabetes is that often, clients don't feel too bad, and I find that showing them an actual picture explaining how the back of their eyes is being damaged [...] I've also seen some great results, with people redoubling their efforts and becoming healthier [...] I think anyone managing a reasonable number of clients with diabetes having access to a retinal camera and utilising DR Screening is a great idea"

Dr Bryan Connor (General Practitioner, Gidgee Normanton PHC Clinic)

Bibliography

[1] Australian Diabetes Society, "Guidelines for the management of Diabetic Retinopathy," 2008. [Online]. Available: https://test1.nhmrc.gov.au/_files_nhmrc/publications/attachments/di15.pdf.

[2] Optometry Australia, September 2018. [Online]. Available: https://www.optometry.org.au/wp-content/uploads/Professional_support/Guidelines/clinical_guideline_diabetes_revised_sept_2018_final_designed.pdf.

[3] Centre for Eye Research Australia & Vision 2020 Australia, "National Eye Health Survey Summary Report," 2016. [Online].

[4] Australian Bureau of Statistics, "2016 Census QuickStats," 2016. [Online].

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KARADI ABORIGINAL CORPORATION

"Our Journey into Indigenous Eye Health- A good news story."

WHO WE ARE

Karadi is an inclusive Aboriginal Community Controlled Organisation, providing leadership in the sector and serving Aboriginal people of our catchment and their families in achieving strong identity, good health, and quality of life.

We work in primary health care to provide services to our local community. Karadi is part of Tasmanian Aboriginal Health Reference Group (TAHRG), a collaboration of five organisations state-wide.

WHERE WE ARE

Karadi Aboriginal Corporation is in Hobart, Southern Tasmania.

"Aside from being used to screen for diabetic retinopathy, the camera has also helped detect undiagnosed conditions in our patients, such as severe to moderate hypertension, macula degeneration and cataracts..."

Our Journey Into Eye Health

Karadi is one of the 166 sites selected to receive a retinal camera through the Federal Government funded Provision of Eye Health Equipment and Training (PEHET) project. The PEHET project is delivered by a consortium of five organisations co-led by Brien Holden Foundation and Australian College of Optometry (ACO).

Indigenous eye health was never intended to be part of Karadi's core work. However, a trial with the Visiting Optometrists Scheme (VOS) revealed a deep need for services in the Aboriginal community where people felt their cultural values were respected. After advertising on Facebook, we became fully booked within 30 minutes of posting, despite being within a 5km radius of twelve optometry practices.

Our journey into eye health implemented the use of preventative eye health care measures and a retinal camera. With this, we have been able to establish a pathway into comprehensive eye health that was previously inaccessible.

Aside from being used to screen for diabetic retinopathy, the camera has also helped detect undiagnosed conditions in our patients, such as severe to moderate hypertension, macula degeneration and cataracts – with some of those patients already having had their cataract surgery.

Diabetic screening processs

We use a model of care that keeps Karadi at the centre to support our clients at whatever point of care they are in. We move with them to provide support, transport, and advocacy throughout their entire journey. Our collaboration also decided that from the beginning we would screen all our clients, with or without diabetes, allowing baseline data for clients as well as detecting and monitoring change over time.

Model of Care:

- Clients are screened for retinal photographs both through booked clinics as well as opportunistically. In the past, images and associated paperwork were sent for grading and reporting off to the Centre for Eye Health as part of our training. This is now being done locally through the VOS.
- All clients are then booked into our VOS clinics for their eye examinations regardless of whether the images are normal or abnormal.
- Should the client require further optometry care, the client will be referred to local optometrists.
- From this the VOS will refer on for specialist Eye Clinics through the Tasmanian Public Health System or
- If required through to private Specialist Eye Clinics. There are some clinics in Hobart that have agreements to bulk bill Aboriginal Clients.

"Despite not being able to claim any benefit, we continue to screen to support our clients and provide them a pathway into eye health, preventing vision loss."

Referral pathways:

In terms of retinal photography our process currently is:

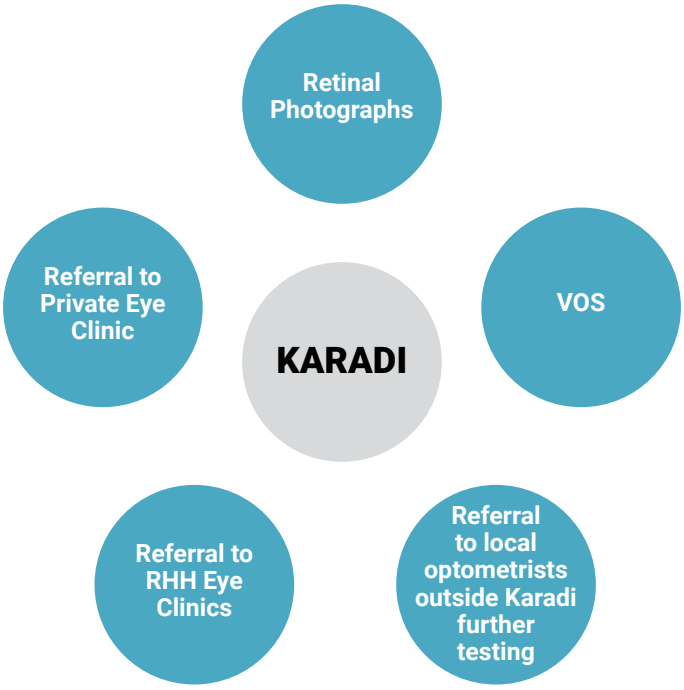
- Take images and take visual acuity.
- Upload images and information to VOS
- Receive a report back with actions and recommendations.
- Recommendations are actioned by the Integrated Team Care (ITC) Team, as well as notification to the client of the outcome of the screening. The report is forwarded to the client and/or GP.
- Appointments are made as noted in the recommendations, for follow-up care and referrals to specialist eye clinics. Referrals can be through VOS or the client's GP.
- The report and the associated actions are documented in the patient-recall system.

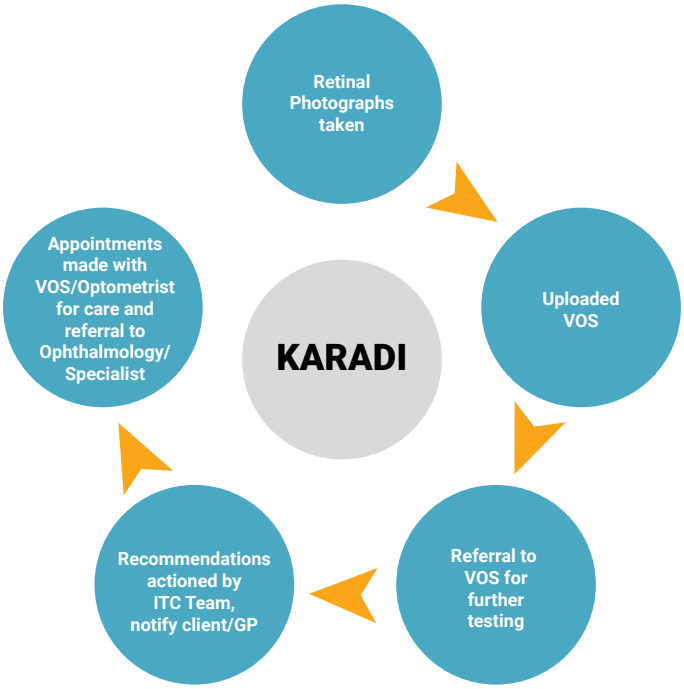
At every step along the way we take the opportunity to do health promotion with our clients, increasing their knowledge and health literacy around eye health.

Upon receipt of the camera, we created our own set of policies and procedures around the use of the retinal camera to ensure that everyone was on the same page and that regardless of which staff member was taking the images that the processes were the same. This was for continuity of care as well as safeguarding against the possibility of clients getting lost in the system and us being able to follow-up and provide the correct recommended course of action.

As we have no GP onsite, we are unable to bill under the MBS item codes 12325/12326. Despite not being able to claim any benefit, we continue to screen to support our clients and provide them a pathway into eye health, preventing vision loss.

Model of Care and Referral pathways





Key players in our good news story

Emma Robertson

Emma is a proud Palawa woman from southern Tasmania where she has lived all her life. She is an Aboriginal Health Worker, part of the Integrated Team Care program at Karadi Aboriginal Corporation servicing clients in the greater Hobart area. She has a keen interest in Indigenous Eye Health.

Marc Hicks

Marc Hicks has worked in Aboriginal Health for over 15 years beginning in an ACCHO and transitioning from the General Practice Network to the Primary Health Network. At Karadi Aboriginal Corporation, he is part of the Integrated Team Care program and is a great advocate of Aboriginal Eye Health.

Marc Hicks & Emma Robertson

RIVERINA MEDICAL & DENTAL ABORIGINAL CORPORATION

WHO WE ARE

Riverina Medical & Dental Aboriginal Corporation (Rivmed) is a large primary healthcare centre consisting of eight doctors, four Aboriginal Health Practitioners, a Nurse Practitioner (NP), three Registered Nurses (RN), a Mental Health team, Allied Health team and Chronic Disease team (CDE).

Rivmed is in Wagga Wagga, NSW, on the land of the Wiradjuri people. Wagga Wagga is an agricultural town with a population of 65,000. Its closest capital city is Canberra (2.5 hours away), and closest big city is Albury/Wodonga (1.5 hours away). The Wagga Wagga Base Hospital, which has an ophthalmology department, is located across the road from Rivmed.

SCREENING PATHWAY

- Diabetic patients are referred internally by Rivmed health practitioners (including GPs, NPs and RNs).
- The screening is carried out by RN Dorcas Musyimi. Dorcas measures Visual Acuity (VA), performs retinal photography and reviews the photos with the patient.
- In a collaborative approach, both the initial referring health practitioner and GP discuss the screening outcome with the patient. Where findings are normal, the patient is referred for a full eye examination with an optometrist in Wagga Wagga. As there are several optometrists in Wagga Wagga, they can be seen on the day or at most, a few days later. The GP, RN or AHW makes the appointment for the patient.
- Where pathology is detected, the patient is referred more urgently to an optometrist or ophthalmologist.
- The GP bills the item(s) 12325/12326.
- A routine 12 month recall is set for the next retinal photography screening.
- There is the option for patients to have an Aboriginal Health Worker attend the optometrist and/or ophthalmology appointments alongside them to provide support. Where required, transport and funding for private ophthalmology appointments are provided.
- Optometrists and ophthalmologists are requested to provide reports of the outcome of the appointments to Rivmed and this information gets integrated into the patient's medical records.

Provision of Eye Health Equipment and Training — funded by the Australian Government.

RIVERINA MEDICAL & DENTAL ABORIGINAL CORPORATION

Five operators have been trained to use the retinal camera with Dorcas as the main operator. R-L: Kymme Hunter, Dorcas Musyimi, Annika Honeysett, Natalie Smith, Victor Simpson.

RETINAL CAMERA SCREENING PATHWAY AT RIVMED

Referral by Rivmed health Practitioners including GPs, Nurse Practitioner and RNs

▼

Screening/Retinal photograph

▼

Review by the GP

▼

Discussion around diabetes management and reinforce education with visual results of their eye health

▼

Refer to optometrist/ophthalmologist where necessary

▼

Set 12 month recalls

▼

Reports forwarded to GPs by optometrist/ophthalmologist & follow up recommendation

▼

Transport provision as needed

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RIVERINA MEDICAL & DENTAL ABORIGINAL CORPORATION

WHY DIABETIC SCREENING WORKS AT RIVMED

- The retinal camera is on-site and there is a support system (e.g. transport provision and ophthalmology funding) in place for patients if required.
- Screening is done on the same day of the patient's consultation with the doctor, NP or CDE. This eliminates the need for another appointment and ensures transient patients are catered for.
- The retinal photos are integrated into the client's medical records which allow doctors to access the photos immediately.
- Doctors can access the photos immediately and refer directly to optometry or ophthalmology if necessary.
- There is a commitment to screening 10 people each month
- The retinal photographs are a great educational tool allowing patients to visualise ocular changes over time.
- Having a main designated operator, Dorcas, and a clear retinal screening pathway means patients are not lost to follow up.

OUR SUCCESS SO FAR

There are 141 type 1 and 2 diabetics (Females: 87 and Males: 54) out of almost 3,000 patients in the practice. 86 (Females: 45 and Males: 41) were screened in less than a 12-month period in 2019, meaning over half the female diabetics and three quarters of the male diabetics were screened. Of these patients, only one had to be referred as the pupils were too small for a clear photograph and hence was followed up elsewhere.

Due to COVID-19, the retinal screening program was paused for a year in 2020. It resumed in February 2021 and the uptake has been slower as many patients are still having phone consultations as opposed to face-to-face.

Before the retinal camera, undetected diabetic retinopathy was a major source of vision loss. People are now very receptive to getting their retinal photos taken as they understand the importance of screening. The patients and their families, staff and community are all committed to making it work. The retinal screening also allows staff to maintain a strong relationship with optometrists and ophthalmologists for the referral pathways.

"Images of eye health help to reinforce patient education and discussions around diabetic management." - Dorcas Musyimi

Come and visit our beautiful Wiradjuri reserve and walking track.

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ALBURY WODONGA ABORIGINAL HEALTH SERVICE

"Improving Screening for Diabetic Retinopathy in Aboriginal Medical Service."

WHERE WE ARE

Albury Wodonga Aboriginal Health Service (AWAHS) is in the border town of Albury, servicing communities in both Victoria and New South Wales.

WHO WE ARE

AWAHS is a community controlled organisation established to cater for the primary health care needs of Aboriginal and Torres Strait Islander people and their families.

Key staff involved in Improving Screening for Diabetic Retinopathy

Kim Moffitt

I am a Traditional Bidjigal/Gweagal Salt Water woman from Botany Bay La Perouse. My family are the traditional allodial sovereign custodians of the land and still live there today, looking after Country. I am a Registered Aboriginal Health Practitioner with 29 years' experience in multiple disciplinary health roles.

Fiona Bradbury

I am a Registered Nurse with 26 years' experience currently working as a Chronic Disease Coordinator for the Integrated Team Care Program at Albury Wodonga Aboriginal Health Service. I have worked in this role for nearly 7 years.

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ALBURY WODONGA ABORIGINAL HEALTH SERVICE

6.5d

OUR UNIQUE APPROACH TO UTILISING DIFFERENT SERVICES TO STRENGTHEN EYE CARE PATHWAYS

AWAHS was one of the 166 sites selected to receive a retinal camera through the Federal Government funded Provision of Eye Health Equipment and Training (PEHET) project. The PEHET project is funded by the Australian Government Department of Health and delivered by a consortium of five organisations: Brien Holden Foundation (BHF), Australian College of Optometry (ACO), Optometry Australia (OA), Aboriginal Health Council of South Australia (AHCSA) and Centre for Eye Health (CFEH). The aim of the program is to support the uptake of the new Medicare Benefits Schedule (MBS) items 12325 and 12326.

AWAHS received their retinal camera and completed training in April 2018. We have created a collaborative eye care environment by engaging in the services provided by Visiting Optometry Services and the local optometrist and ophthalmologist. Through these collaborations, we have overcome many barriers such as establishing a sustainable pathway to previously inaccessible local ophthalmology practices and a local optometry grading service.

"I love doing it and it is amazing what you find in someone's eyes." Kim

As all diabetic patients are now routinely screened, we have moved on to a new aim of embedding retinal photography as part of the Aboriginal Health Check (MBS item 715). This will ensure all patients receive retinal screening and a pathway into eye care, whether they are diabetic or not. In November 2020 we started on our 142 patients' annual retinal photography recalls.

"When they see damage on their retina as they are not looking after themselves it's a bit of a wakeup call" Kim

Through collaboration, the uptake in Retinal Photography has increased dramatically. The Centre for Eye Health grades the retinal photographs and reports are sent back to AWAHS. The GP then refers to the VOS optometrist (monthly visits provided by Brien Holden Foundation) if necessary and processes the MBS claims. The local ophthalmologist now bulk bills all AWAHS patients, thanks to the continuous advocacy of AWAHS.

AWAHS Aboriginal Health Practitioner Kim Moffitt now takes retinal photography for our cardiac patients. The aim is to implement retinal photography into our Aboriginal Health Check (MBS 715) so all patients get screened. We are aware that the retinal photography MBS item is only billable for people with diabetes, however, we are aiming to screen the majority of patients with or without attaching an MBS item number and claiming a benefit.

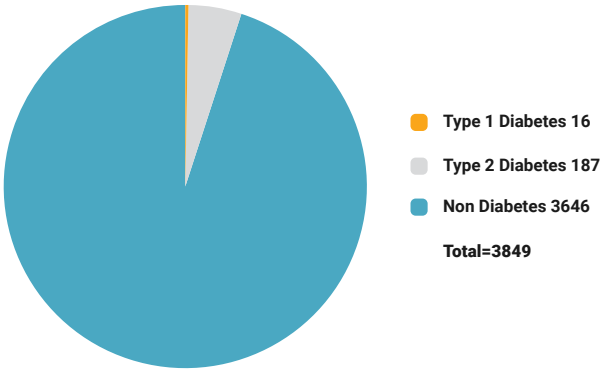
"Patients absolutely can't wait to see their retinal images. It is an opportunity for me to talk to them about stopping smoking, drinking in moderation, and taking their medication every day. Some people make lifestyle changes after the photo and chat" Kim

Kim taking a photo of Uncle Tunny's retina

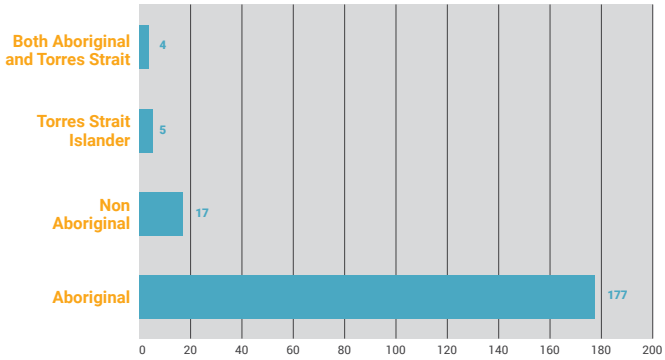
ALBURY WODONGA ABORIGINAL HEALTH SERVICE

6.5d

AWAHS patients with diabetes



Diabetic Patients at AWAHS



RETINAL CAMERA SCREENING PATHWAY AT AWAHS

Patient is identified as having diabetes through internal databases

↓

Appointment is scheduled for retinal photography/or opportunistically

↓

Retinal photo taken

↓

Recall is generated into Communicare - 12 monthly

↓

Retinal photograph is then sent to the Centre of Eye Health for examination and grading

↓

The report from the Centre of Eye Health is forwarded to AWAHS Aboriginal Health Practioner (AHP)

↓

GP is made aware of the report and bills the retinal photo MBS 12325 or 12326

↓

If a referral to an ophthalmologist is advised the AHP will arrange a GP to do a referral

↓

AHP will then make an appointment with the optometrist/ophthalmologist

WHY HAS AWAHS BEEN SUCCESSFUL WITH RETINAL SCREENING?

- We combined the Provision of Eye Health Equipment and Training (PEHET) project and The Look Out Project – The Indigenous Diabetes Eyes and Screening (IDEAS VAN)
- We have had 2 staff members working closely together with retinal screening
- Dedicated clinic time and a retinal camera champion: Kim Moffitt
- We have created a collaborative eye care environment by engaging in the services provided by our Visiting Optometry Services, local optometrist and ophthalmologist. Through these collaborations, we have established a sustainable pathway
- We have successfully established a bulk-billing relationship with our local ophthalmology service; especially that now that the IDEAS van no longer visits.

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ALBURY WODONGA ABORIGINAL HEALTH SERVICE

CHALLENGES WE FACED

- GP Training was difficult as most GPs worked 2-3 days a week making it challenging when trying to coordinate an appropriate day of the week.
- Non-usage of the retinal camera as practitioners were not confident in taking photos and required further training provided by the Consortium.
- Room allocation of the retinal camera was a barrier as it was kept in a portable office at the back of the clinic, predominantly only being used by the Diabetic Educator/Podiatrist
- Medicare claiming has been difficult because our GPs were not always confident in triaging retinal images.
- COVID has meant we ask patients to wear a mask for retinal photography. The camera is thoroughly wiped down after each patient.

"I would love to photo screen everyone that came in. It's so important as patients cannot see what is going on inside them without it" Kim

Fiona taking a photo of a patient's retina.

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MALLEE DISTRICT ABORIGINAL SERVICES 6.5e

MDAS
MALLEE DISTRICT ABORIGINAL SERVICES

"The traditional custodians of Mallee country are the Latji Latji, Paakantji (Barkindji), Ngiyampaa, Mutthi Mutthi, Wemba Wemba, Tati Tati and Barapa Barapa."

WHO WE ARE

Mallee District Aboriginal Services provides Health, Family, Early Years and Wellbeing services to Aboriginal and Torres Strait Islander People and their families in the Mallee region of northwest Victoria. The area is between the Wimmera and Murray rivers and borders with South Australia and New South Wales.

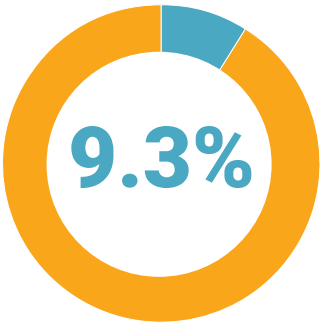
Mallee District Aboriginal Services is committed to improving the services we provide to our community through our medical clinics in Swan Hill and Kerang

OUR HEALTH CLINICS

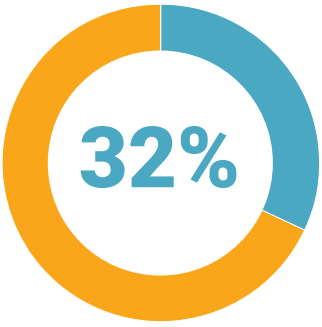
Our clinics in Swan Hill and Kerang consist of 1 Doctor, 1 Clinic Coordinator, 3 Registered Nurses, 1 Midwife, 1 Chronic Care Coordinator, 1 Chronic Care Outreach Worker, 2 Health Promotion Officers, 4 trainee Aboriginal Health Practitioners and 1 Allied Health trainee.

The staff involved are Taylah Baird (Allied health), Ami Johnston (Practice Nurse) and Zah Thebe (Health Manager for Swan Hill and Kerang).

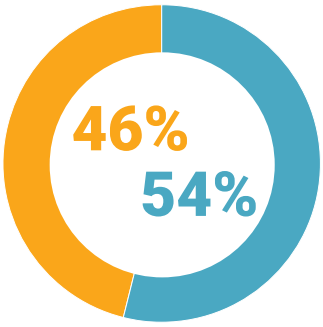
Diabetic photoscreening to Date November 2020



Clients with Type 1 or Type 2 Diabetes



Diabetic Clients Photoscreened in Last 6 Months



Diabetic Client Gender: 54% Male, 46% Female

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MALLEE DISTRICT ABORIGINAL SERVICES 6.5e

RETINAL CAMERA SCREENING PATHWAY AT MDAS SWAN HILL AND KERANG

Client presents for 715 (Aboriginal And Torres Strait Islander Peoples Health Assessment) or 721 (General Practitioner Management Plan)

↓

Identified as having diabetes or having vision impairment

↓

Same day retinal photography screening

↓

Annual recalls set

↓

Discussion of retinal photographs and education for the client around eye health and/or diabetes management

↓

Retinal photos sent to Centre of Eye Health/visiting optometrist for grading

↓

GP reviews grading results and refers to optometry/ophthalmologist

↓

GP bills MBS item code 12325/12326

↓

Transport provision where needed for further eye care appointments

↓

GP receives report from optometrist/ophthalmologist with follow up recommendations

Retinal screening in process

PROMOTING THE RETINAL CAMERA

- Social Media. Our Facebook page is followed by 2872 people and posts every day.
- Banners and pamphlets in reception area
- Posters throughout the clinic
- Recommendations by clinic staff
- Promotional events e.g. World Sight Day, World Diabetes Day
- Local community members involved in advertising.
- Word of mouth referrals

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ADVANTAGES OF HAVING THE RETINAL CAMERA

- Improves community access to the eye health pathway.
- Opportunistic screening for non-diabetic patients to detect new cases of diabetes or even other eye conditions.
- Perform Diabetes cycle of care effectively.
- Provides education and helps engage the patient on why diabetic control is so important.
- Allows visiting optometrist to utilize camera for diabetic eye disease, other ocular conditions and monitoring changes over time.
- Greater opportunity for staff to maintain their skills and helps engage them on eye health.

Map of Victorian Aboriginal language territorries

RETINAL CAMERA TOOLKIT

Section 7
Example Letters

Retinal Photo Grading Request to Optometrist templates

You can use the following templates to request photography grading from an eye health professional.

Digital copies of the following grading request templates can be accessed **via this link**.

The following hard copies can be scanned and completed if preferred.

Use the below guide to complete the referral pathway.

REFERRAL PATHWAY FOR PRIMARY HEALTH CARE WORKERS - A GUIDE
1. Primary health care worker takes retinal photograph
2. Anything of immediate concern AMS/GP will notify the optometrist or refer to ophthalmologist
3. Photos are provided to local optometrist within 2 weeks If the optometrist does not visit the health service on a regular basis, determine the best option for the transfer of images to the Optometrist for eg. CSMNnet, secure Gmail, or photos provided to practice on CD or USB
4. Request for grading provided with photos
5. Optometrist grades photos within 2 days of receiving
6. Completes attached report and return to health service by fax or mail. Optometrist will phone if anything urgent

Grading request to optometrist

[Aboriginal Health Service/GP Practice Letterhead – with contact details]

Dear Optometrist,

We are writing to ask if you would provide grading of retinal images to support GP billing at our practice of the 12325 and 12326 Medicare item for retinal photography.

PATIENT INFORMATION		
	Patient full name:	DOB:
	Date of photography:	
	Type of diabetes: Type 1 / Type 2 / Gestational Duration of diabetes:	
	Most recent random BSL: Date: HbA1C: Date:	
	Visual acuity: (unaided) Right: Left: Visual acuity: (corrected) Right: Left: Visual acuity: (pinhole) Right: Left:	
	Other notes:	

Please complete the section below and return it to us within 7 days.

If there are any findings of urgent concern, please phone the client's GP to discuss, so we can support the client's referral for an optometry or ophthalmology assessment, as required.

Feel free to contact us if you require further information.

Yours sincerely,

[Name – Health Practitioner]

Diabetic Retinopathy Optometrist Grading Report Template

Dear Doctor

I have assessed the retinal photographs for this client with findings indicated below:

Patient full name:	DOB:
IMAGE GRADING	**SUGGESTED MANAGEMENT**
☐ No diabetic retinopathy	Routine yearly optometry review for comprehensive eye exam
☐ Mild non-proliferative diabetic retinopathy (mild NPDR)	Optometry review in _____ months
☐ Moderate non-proliferative diabetic retinopathy (moderate NPDR)	Optometry/Ophthalmology review in _____ months
☐ Severe non-proliferative diabetic retinopathy (severe NPDR)	Referral to ophthalmology Appointment date _____ Or Please make an appointment for this patient
☐ Proliferative diabetic retinopathy (PDR)	Referral to ophthalmology Appointment date _____ Or Please make an appointment for this patient
☐ Clinically Significant Macular oedema (CSME)	Referral to ophthalmology Appointment date _____ Or Please make an appointment for this patient
☐ Ungradable photos	Refer to optometrist for comprehensive eye exam

A retinal photograph does not replace a comprehensive eye examination by an optometrist, which is recommended at least yearly for Aboriginal and Torres Strait Islander people with diabetes, or earlier if they notice a difference with their vision.

Please do not hesitate to contact me if you would like to discuss management for this client.

Yours sincerely,

[Optometrist name and qualifications]

Centre for Eye Health

Retinal photo grading service

Centre for Eye Health

Centre for Eye Health is situated on the University of New South Wales campus in Sydney, NSW. The Centre has a team of 18 optometrists who are experienced in the diagnosis of ocular diseases such as diabetic retinopathy, glaucoma and macular degeneration. The Centre also has a strong research arm and access to consultant ophthalmology services when required.

Until 31 December 2021, the CFEH retinal photo grading service is available free-of-charge to health facilities that have received a retinal camera through the PEHET (Provision of Eye Health Equipment and Training) project funded by the Australian Government Department of Health. The reading services will continue to be available to PEHET sites following the end of the project contract at a nominated cost.

Using a secure online platform, Microsoft Teams, retinal photos (JPG format) are graded for the level of diabetic retinopathy, presence and severity of diabetic macular oedema and other incidental pathologies. A report with the results and corresponding management recommendations is transmitted back to the health facility for follow-up within two working days.

If your site is interested in utilising this service, please call or email to discuss the process in more detail. Our contact details are:

- **Hotline number:** (02) 8115 0777 (ask to speak to one of the Diabetes Team)
- **Email** Karin Mavromatis on *education@cfeh.com.au*

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RETINAL CAMERA TOOLKIT

Section 8
Other Resources

Aboriginal Health Council
of South Australia Ltd.

DEADLY SIGHTS COMMUNICARE AND MBS GUIDE

Communicare acknowledges the business intelligence and product development shared through respectful partnerships spanning more than 20 years in the Aboriginal Community Controlled Health and medical services sector and looks forward to evolving Communicare as the state of the art primary health care system in the national effort to reduce health inequality and close the gap in a generation.

Aboriginal Health Council of South Australia Ltd. COMMUNICARE

Contents

AHCSA's Eye Health Program 'Deadly Sights' aims to support Members to develop and deliver comprehensive primary eye health services to reduce the prevalence and incidence of poor eye health and vision loss in Aboriginal populations.

About the Deadly Sights Communicare and MBS Guide

Deadly eye health is important to us all. Poor eye health or vision loss can impact on functionality and everyday tasks, and it can limit an individual's education, employment and social opportunities.

It can also increase the risk of injury, leading to dependence on services and other people [1]. These negative consequences are not only felt by people with poor vision, but also by their families and communities. Aboriginal and Torres Strait Islander children, especially those living in remote areas, generally begin life with better vision than non-Indigenous Australian children [2]. This trend reverses by adulthood, with Aboriginal and Torres Strait Islander adults being three times more likely to experience vision loss or blindness than non-Indigenous adults [3]. Uncorrected refractive error, cataracts, and diabetic retinopathy are the main non-acute causes of vision loss and blindness among Aboriginal and Torres Strait Islander people [3]; however trachoma and trichiasis are also prevalent in some communities [4]. Despite these facts, approximately 94% of vision loss and blindness among Aboriginal and Torres Strait Islander people is preventable or treatable [3].

Regular eye screening begins in primary health care. However, limited availability of ophthalmologists worldwide makes it impossible for them to undertake all of the eye examinations required to detect those at risk of vision loss and/or in need of treatment [5]. As such, those clinicians working in primary health care are the best placed for supporting people to understand how to look after their eyes, access eye health exams, and to refer those requiring treatment.

The Deadly Sights Communicare and MBS Guide is a broad-based set of recommendations combining clinical, practical and technical information relating to screening, referrals and principals for management of non-acute visual impairment in primary health care settings.

Aboriginal and Torres Strait Islander people are THREE times more likely to have vision loss or blindness than other Australians

This guide outlines suggested documentation pathways using Communicare V18.4. Please note that it requires local administrator modifications in order for Communicare to perform as shown. Please contact AHCSA for details of any of the following locally created clinical items outlined; 'Visual acuity;pinhole', 'Photography assessment;retinal', 'Check up;optometrist', and 'Check up;ophthalmologist'.

Conditions that Cause Vision Loss

The leading causes of vision loss for Aboriginal and Torres Strait Islander people aged 40 and over in 2016 were refractive error (63%), cataract (20%), and diabetic retinopathy (5.5%) [6]. Trichiasis, as a result of trachoma infections can lead to blindness and is also a significant issue. Early detection of these conditions is important to eliminate or reduce the severity of vision loss.

Refractive Error

Refractive error is the most commonly reported eye condition amongst Aboriginal and Torres Strait Islander people, and one of the major causes of their visual disadvantage [7]. A refractive error means that the shape of your eye does not bend light correctly, resulting in a blurred image.

The treatment of refractive error is easier than the treatment of other causes of vision loss as it can generally be corrected with appropriate glasses or contact lenses.

Visual acuity testing will identify blurred vision or vision loss. If this is detected, a referral to an optometrist is required for diagnosis and treatment.

Cataracts

Aboriginal and Torres Strait Islander people develop cataracts at a higher rate, and at an earlier age, compared to non-Indigenous Australians [7], yet are four times less likely to have cataract surgery [8]. Initially, cataracts may only slightly reduce vision, but over time can lead to visual loss. Most of this blindness is avoidable since cataracts can be easily treated with surgery performed by an ophthalmologist. Cataracts are characterised by clouding of the lens affecting vision. It can develop in one or both eyes [5].

The reason for the increased prevalence of cataracts in Aboriginal and Torres Strait Islander people is not known for certain. Causes of cataracts include: aging; diabetes; hypertension; obesity; smoking; prolonged use of some medications; previous eye injury or inflammation; and exposure to sunlight [9].

Early detection of a cataract through regular eye screening can lead to earlier treatment and better post-operative outcomes. Cataracts are diagnosed by optometrists and ophthalmologists using a slit lamp or an ophthalmoscope.

Diabetic Retinopathy

Diabetes is the fastest growing cause of visual loss in the adult Aboriginal and Torres Strait Islander population. One in ten Aboriginal and Torres Strait Islander adults with diabetes experience vision-threatening diabetic retinopathy [10]. Many are not being adequately screened or treated for its blinding complications.

Diabetic retinopathy is a complication of diabetes that involves damage to the blood vessels of the retina (nerve layer lining the back of the eye). This is the part of the eye which imprints the image that is sent to the brain. It is a 'silent disease' which can damage people's eyes before they even know they have diabetes or experience any problems with their vision [7].

If left undetected, symptoms can appear in one or both eyes, generally beginning with blurred or distorted vision, and then a reduced visual field. As the disease progresses, it can lead to partial or complete blindness [8]. Over ninety percent of vision loss caused by diabetic retinopathy can be prevented by early detection and appropriate treatment, such as laser surgery or injections [11].

Diabetic retinopathy can be diagnosed by an optometrist or ophthalmologist. It may also be detected following the review of a retinal photograph by a suitably trained health professional. See pages 9-18 for a recommended systems approach to management using Communicare.

Trichiasis

Trichiasis is the result of repeated infections of trachoma usually experienced in childhood which causes inflammation especially of the tarsal conjunctivae (the inside lining of the eyelids). Long-term inflammation leads to scarring and distortion of the upper eyelid with in-turning of eyelashes (trichiasis) that scratch the cornea (the central clear exterior of the eye). In turn, these constant abrasions can cause irreversible corneal opacity (clouding) and blindness.

Although trachoma was eliminated from most parts of Australia by the 1930s, it continues to be a significant public health problem in Aboriginal and Torres Strait Islander communities in many rural and remote areas of the NT, SA and WA with the associated risks of infected individuals developing trichiasis.

The World Health Organization (WHO) adopted a resolution to eliminate blinding trachoma as a public health problem by 2020. Australia is a signatory to this resolution, the Global Elimination of Trachoma (GET 2020). For Australia to achieve the GET target[1], there needs to be a system in place to identify and manage incident (new) cases of trichiasis.

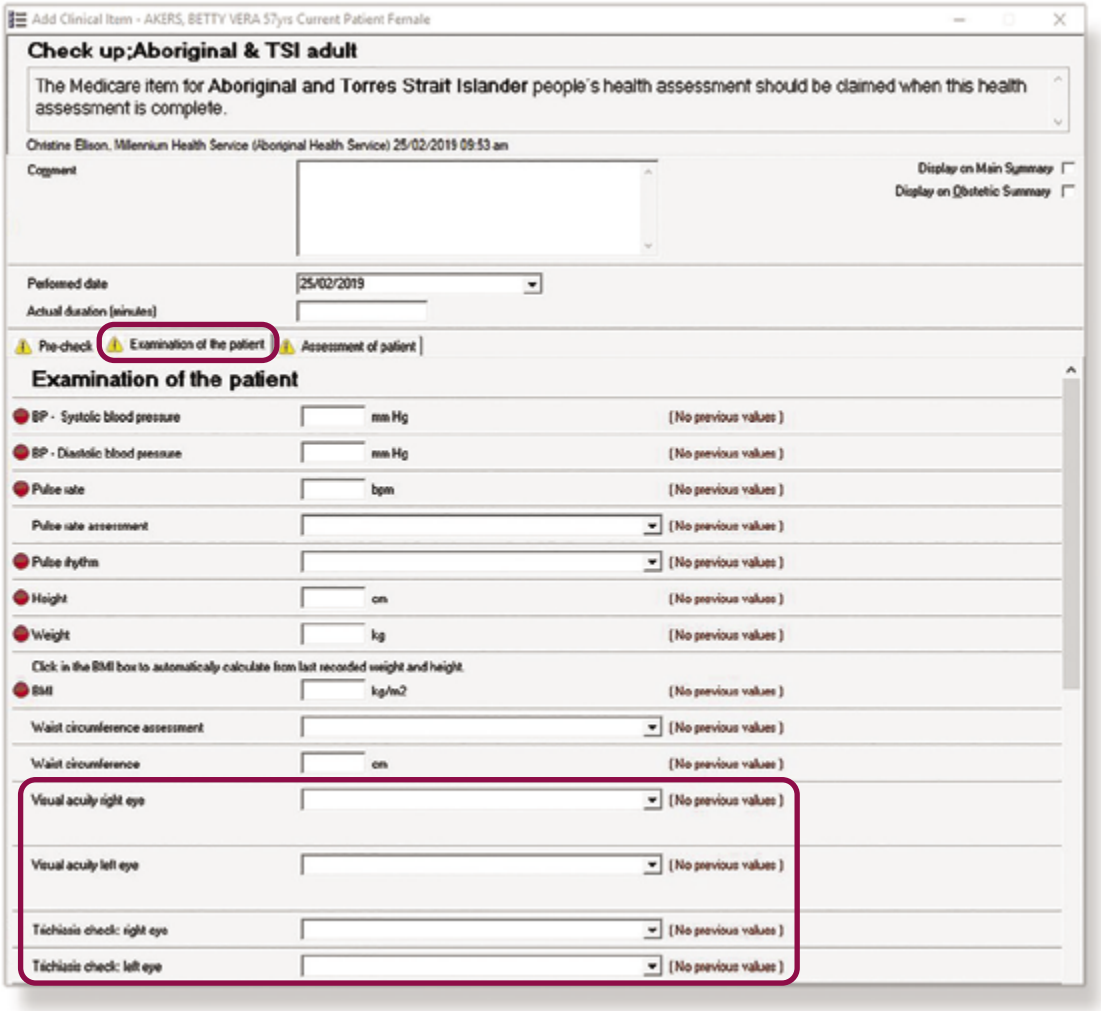
See pages 5 to 8 for how this can be supported by Communicare.

1. This is in addition to a prevalence of trachoma in children aged 5–9 years of <5%.

Eye Checks in Aboriginal and Torres Strait Islander Health Checks

In the primary health care setting, the early detection of eye conditions will often occur when clients undergo an annual Aboriginal health check. Primary health care staff are then able to follow appropriate referral pathways for treatment and management of any conditions identified.

In both the '**Check up;Aboriginal and TSI adult**' and '**Check up;Aboriginal and TSI over 55s**' Communicare clinical items, visual acuity and trichiasis checks are recorded under **Examination of the patient**.



Performing the Visual Acuity Test

Testing visual acuity in the **first instance** is always performed **Unaided** (with the naked eye) or **Aided/Corrected** (with the client's existing glasses or contact lenses). After performing visual acuity and recording the results in the healthcheck, **if a client's best vision is worse than 6/6** (normal vision), test again with a pinhole occluder.

There are a range of conditions that cause a reduction in visual acuity. Testing with a pinhole occluder may help to identify if the reduction is due to a refractive error, which can usually be corrected with glasses.

Ask the client to hold the occluder in front of the eye to be tested and cover the other eye.

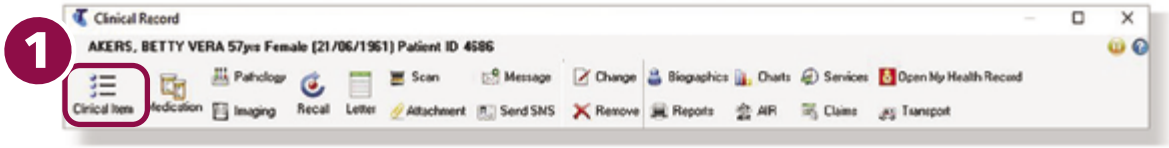
- Repeat visual acuity test through pinhole.
- Do this again for other eye if required.

When using pinhole occluder:

- If distance vision improves, it is likely the person has some refractive error.
  New glasses will help.
- If distance vision doesn't improve at all, there is likely to be another cause for reduced vision.
  New glasses won't help [12].

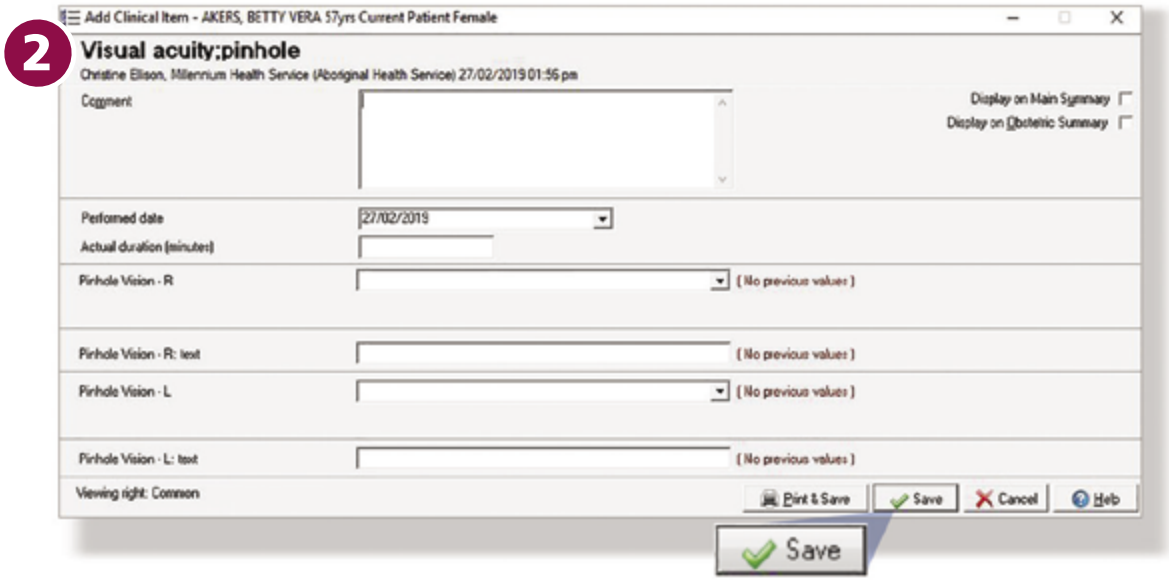
Document in Communicare as follows:

1. In the client's clinical record, select the **Clinical Item** icon.



2. This will launch the Clinical Terms Browser. Search for and select the clinical item '**Visual acuity;pinhole**'.Complete the qualifiers as necessary and '**Save**'.

   The majority of conditions affecting visual acuity will require a referral to an optometrist/ ophthalmologist. If reduced vision is identified whilst performing the annual health check, follow the referral instructions outlined on **pages 19-22**.



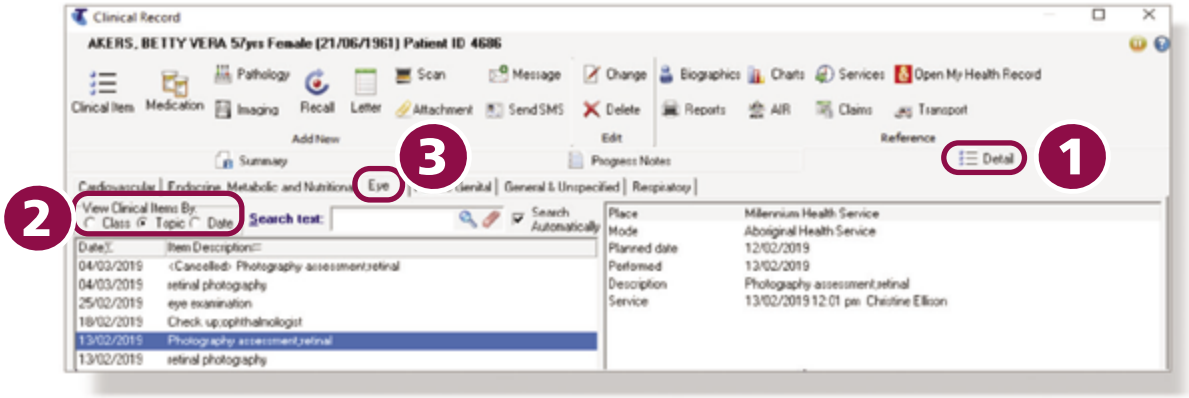
Performing the Trichiasis Check

The clinical diagnosis of trichiasis is defined as the presence of at least one in-grown eyelash touching the eyeball, or evidence of recent removal of in-turned lashes. It is recommended that a suspected case of trichiasis is confirmed by a health professional experienced in the diagnosis of trichiasis. In most cases this will be an ophthalmologist. Minor surgery is usually required to repair the distorted or in-turned eyelid.

If the examination reveals one or more eyelashes touching the eyeball, or evidence of epilation (removal of in-turned eyelashes):

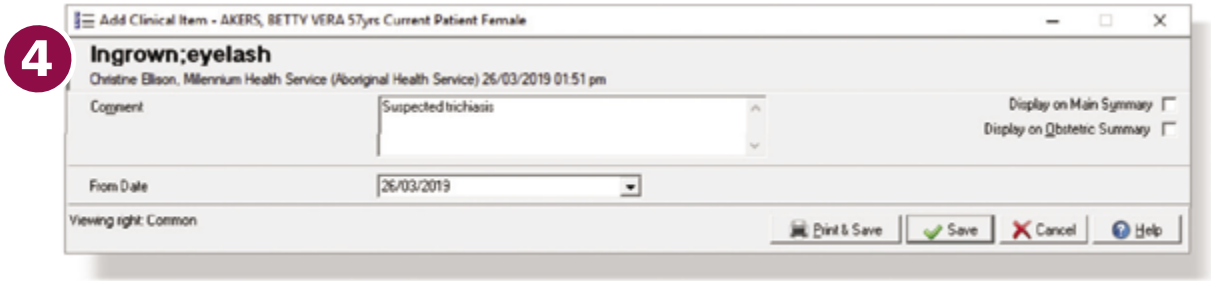
Review client's clinical record to see if a diagnosis of trichiasis has previously been documented and any details of follow up with an ophthalmologist, including if the client has had surgery or not. You will find this information by following steps 1-3.

1. Go to the '**Detail**' tab.
2. Select to **View Clinical Items By**: '**Topic**'.
3. Then select '**Eye**'. You can right click on any of the items here and select '**find associated service details**'. This will take you to the place in the client's clinical record where the progress note was written.



If trichiasis has not been previously documented and YOU ARE NOT a health professional with experience in the diagnosis of trichiasis:

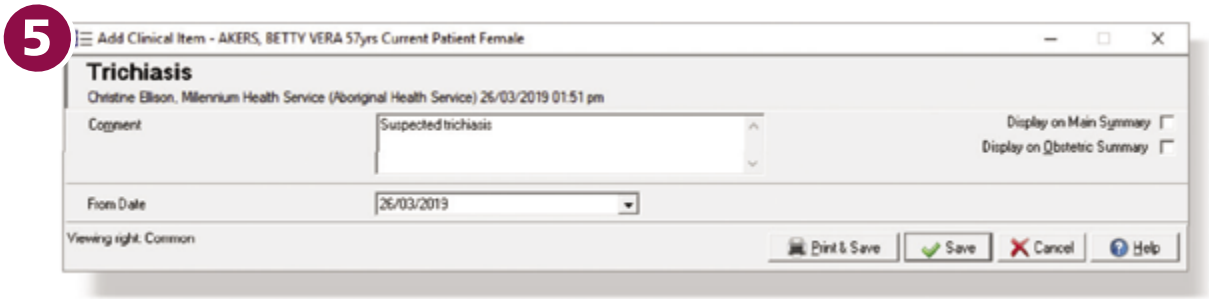
4. Document the clinical item '**Ingrown;eyelash**' in the client's clinical record, reporting your findings in the comment box e.g. Suspected trichiasis.



OR

If trichiasis has not been previously documented and YOU ARE a health professional with experience in the diagnosis of trichiasis:

5. Document the clinical item '**Trichiasis**' in the client's clinical record, with any necessary comments in the comment box.



It is important that trichiasis or suspected trichiasis is examined by an ophthalmologist. Following steps 4 or 5, organise a referral to an ophthalmologist. See pages 19-22 for details on documenting a referral.

A person with trichiasis who has not had previous surgery for trichiasis should be given at least three opportunities to have surgery. Refusal of surgery should be documented, ideally in the presence of a family member.

Retinal Photography in Communicare

Retinal cameras in primary health care services provide opportunistic access to retinal photography for people with diabetes who have missed their annual screen or required eye examination. Taking the retinal photograph also provides a visual tool for timely and effective client education.

The assessment of the retinal photographs enables referrals for a comprehensive eye examination or treatment by an optometrist or ophthalmologist to be generated where required. A retinal photograph does not replace a comprehensive eye examination.

It is recommended that any Aboriginal and Torres Strait Islander person living with diabetes be reviewed by a qualified eye health professional yearly.

Qualified practitioners authorised to take retinal photographs are:

- Primary health care practitioners who have completed the appropriate retinal camera operator training; and,
- Practicing secondary eye health professionals including optometrists, orthoptists and ophthalmologists.

Quality of the Photo

When taking the photo, if a clear image cannot be obtained due to small pupils, mydriatic drops are permitted under an approved protocol. If a clear image cannot be obtained for any other reason, the patient should be referred to an optometrist or ophthalmologist for further assessment.

Suggested Flow Chart for Client with Type 2 Diabetes

RETINAL PHOTOGRAPHY

Trained Operator	Perform visual acuity and retinal camera photography; • Record using '**Photography;retinal**' clinical item in client's clinical record. • Upload photo into clinical item. • Completion of '**Photography;retinal**' clinical item triggers recall for '**Photo assessment;retinal**'.

PHOTO ASSESSMENT

Trained Assessor	Photo is assessed by someone appropriately trained; • Generate a list of clients requiring their retinal photo to be assessed. • Record using '**Photography assessment;retinal**' clinical item in client's clinical record. Claim MBS item 12325 or 12326 if applicable.

RESULTS

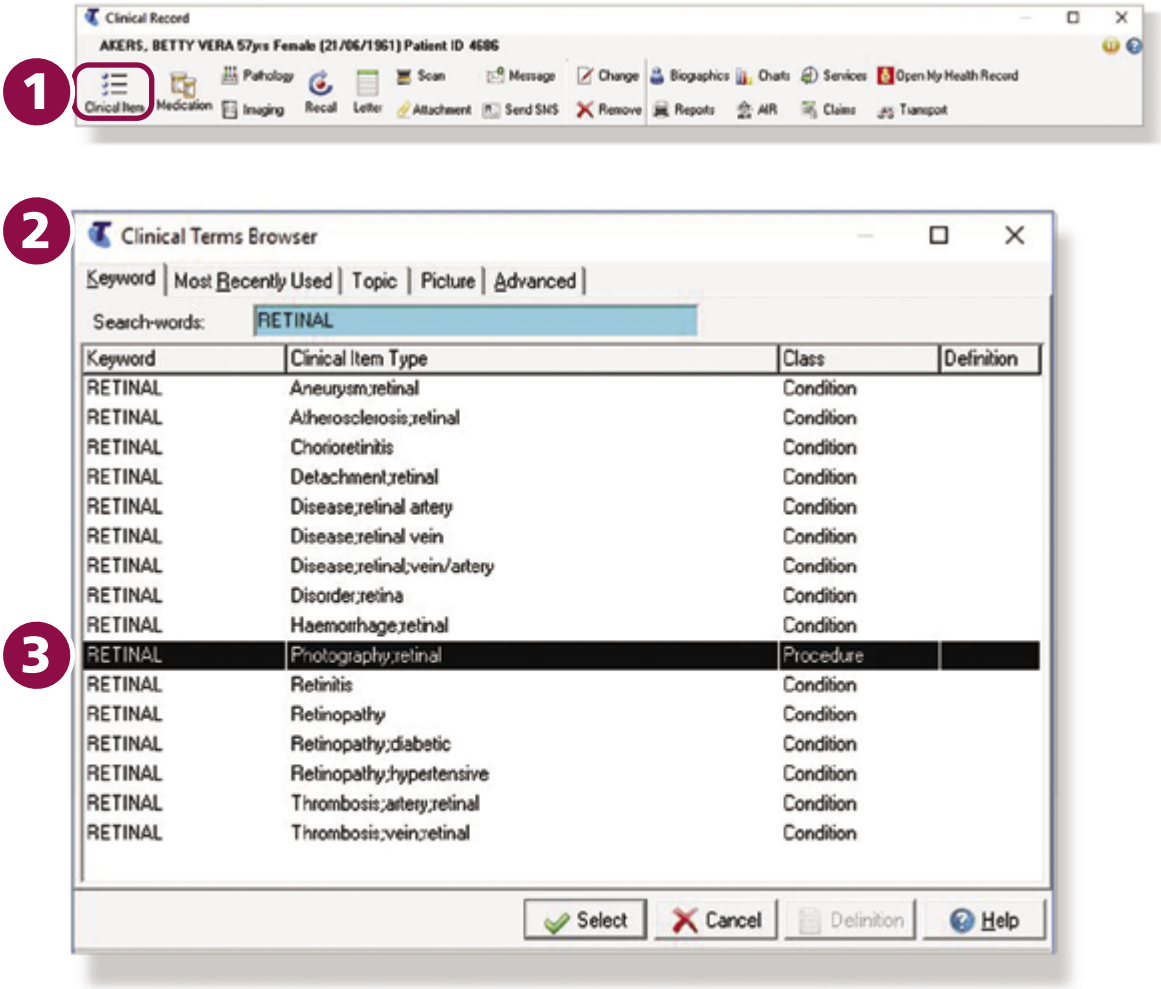
Normal	Refer to optometrist for a comprehensive eye examination in **one year's time**. *(If unable, then perform visual acuity and retinal photography in one year's time).*

OR

Abnormal	Refer to optometrist/ophthalmologist according to Diabetic Retinopathy Guidelines (See Appendix 1).

Note: *If the client's clinical record contains existing recalls set by the visiting optometrist or ophthalmologist for other reasons, they should not be superseded by the retinal screening results.*

Retinal Photography Clinical Item



1. In the client's clinical record, select the **Clinical Item** icon.
2. This will launch the Clinical Terms Browser. Enter **RETINAL** or **PHOTOGRAPHY** as a keyword to locate the '**Photography;retinal**' clinical item.
3. **Double click** to select. The clinical item will appear.

4. Complete the qualifiers as necessary and '**Save**'.

4

Add Clinical Item - A'KAY, BRIAN DEREK 37yrs Current Patient Male

Photography;retinal

You MUST measure the client's visual acuity for distance vision before taking the retinal photographs

Christine Ellson, Millennium Health Service (Aboriginal Health Service) 23/04/2019 10:24 am

Comment

Display on Main Summary

Performed date 23/04/2019

Actual duration (minutes)

Presenting Vision

This is the client's visual acuity (distance vision) at the time of taking the retinal photographs.

Unaided Distance Vision

(Measure distance vision without glasses or contact lenses.)

Visual acuity right eye (No previous values)

Visual acuity left eye (No previous values)

Aided Distance Vision (i.e.corrected)

(Measure distance vision with the client's existing distance glasses or contact lenses)

Visual acuity right eye (corrected) (No previous values)

Visual acuity left eye (corrected) (No previous values)

Distance Vision through Pinhole

(If unaided or aided distance vision is worse than 6/6 in either eye, then measure vision again through a pinhole occluder.)

Pinhole Vision - R (No previous values)

Pinhole Vision - L (No previous values)

Pupils and Dilation

When natural pupil size is 3.5mm or more, retinal photographs are usually fine without dilating the pupils. Measure the pupil size before considering dilating the patient.
Pupil size:
0-2.5mm - dilate
2.5-3.5mm - try undilated
3.5mm or more - undilated

Iris shadow test (No previous values)

Pupils dilated with informed consent Yes No Blank (No previous values)

Pupils dilated with (No previous values)

Dilation time of day (hh:mm) (No previous values)

Retinal Photography

Retinal photograph - R Load Image (No previous values)

Retinal photograph quality - R (No previous values)

Retinal photograph - L Load Image (No previous values)

Retinal photograph quality - L (No previous values)

Retinal photographs seen by patient Yes No Blank (No previous values)

Eye health education provided Yes No Blank (No previous values)

Viewing right: Common

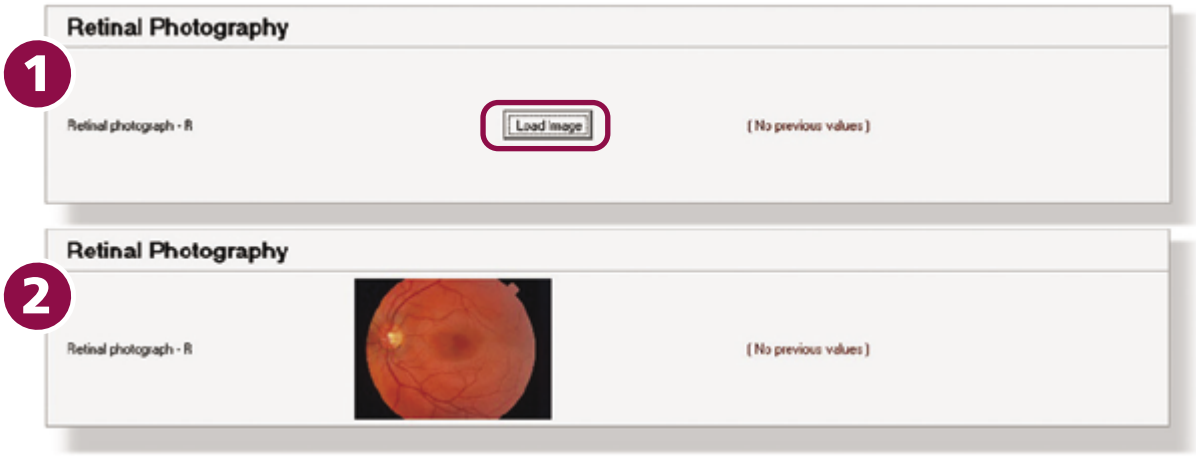
Print & Save | Save | Cancel | Help

Save

See next page for details on how to upload the retinal photos into this clinical item

How to Upload the Photo into Communicare

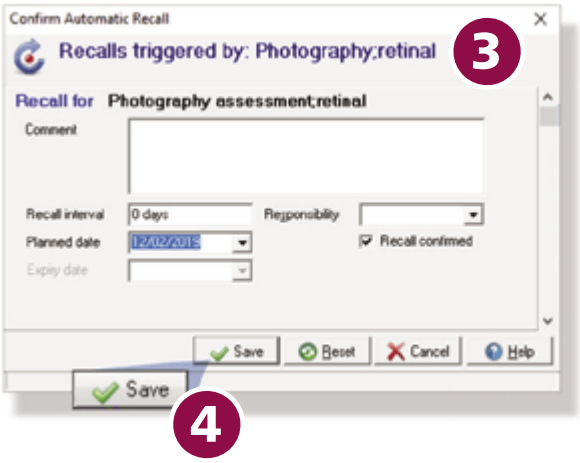
Ensure the photo is saved in a file accessible on the computer you are using. Use a standard naming convention to avoid uploading the wrong photograph to a client's file (e.g. Last name, first name, date, eye – AkersBetty17Dec18Right).



1. Within the '**Photography;retinal**' clinical item, select to '**Load Image**' next to the '**Retinal photograph – R**' qualifier.
2. This will open up your file browser. Search for the location of the photo and select the correct photo.

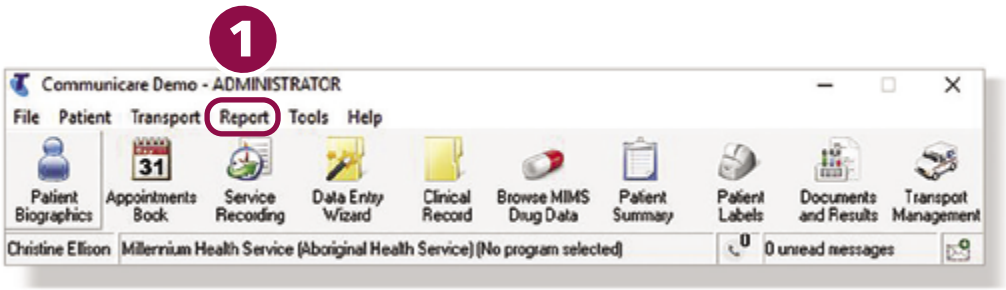
   The photo will be loaded into the clinical item. You can double click on the image to expand it to full screen.

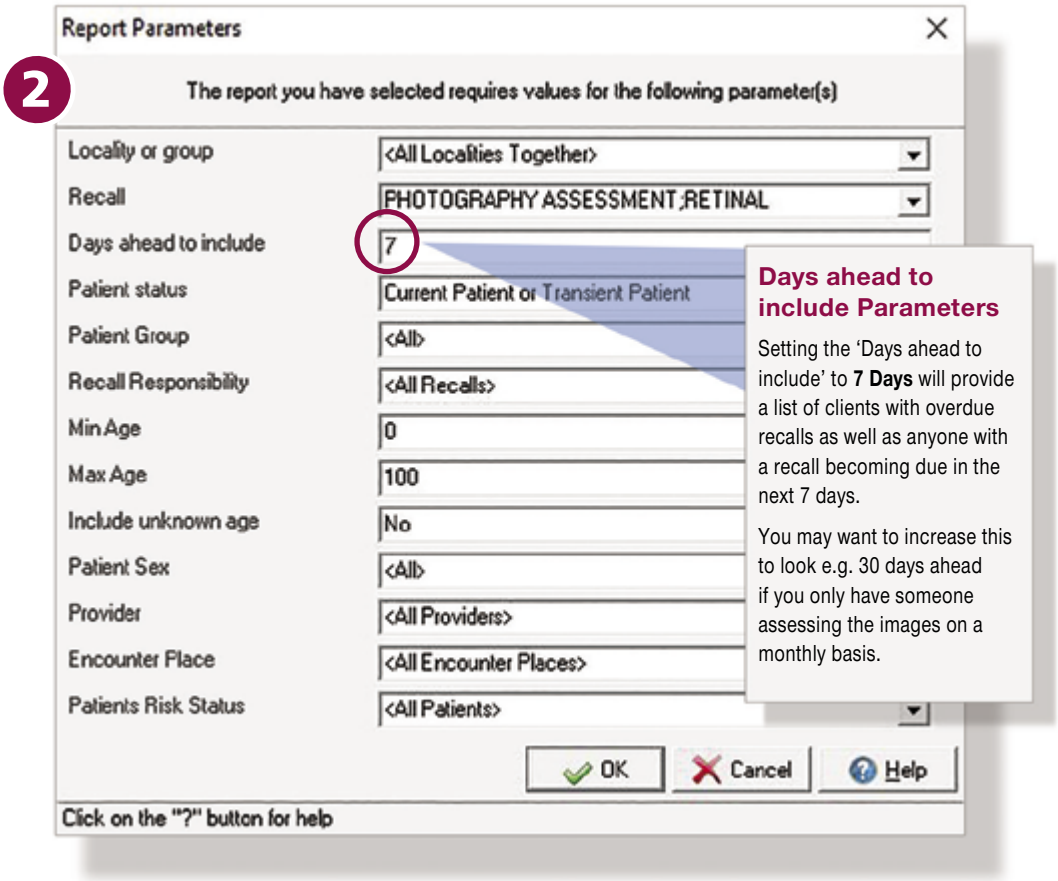
   Repeat the process for '**Retinal photograph – L**'. Select '**Save**' on the '**Photography;retinal**' clinical item.
3. An automated recall for '**Photography assessment;retinal**' will appear.
4. Select '**Save**' on the recall, and it will now appear as due in the client's '**To Do**' list.



Note: *Some services experience issues uploading images. If this is the case, first check that the setting on the camera is not saving images as large files. You may also need to change the settings in Communicare to allow larger files to be uploaded. Ask your local Communicare administrator to change the settings to allow a document size of 2048kb with a resolution of 150. Changing the settings to anything larger than this can negatively impact the performance and speed of Communicare. If resolution is too low (i.e. Less than 1.5mb), then photos cannot be adequately assessed.*

Generating a List of Clients Requiring Assessment of Retinal Photos





1. Select **Report** from the Communicare toolbar. Go to **Recalls | Recalls Due**, and select '**Yes**'.
2. Enter the **Report Parameters** and select '**OK**' to generate the report.

   A report listing all of the client's names who have a recall due or overdue for '**Photography assessment;retinal**' will be generated.

Alternatively, this report can be automatically scheduled to a specific provider(s) email address on a regular basis e.g. fortnightly. Speak to your local Communicare administrator to arrange for this to be set up

Retinal Photograph Assessment Clinical Item

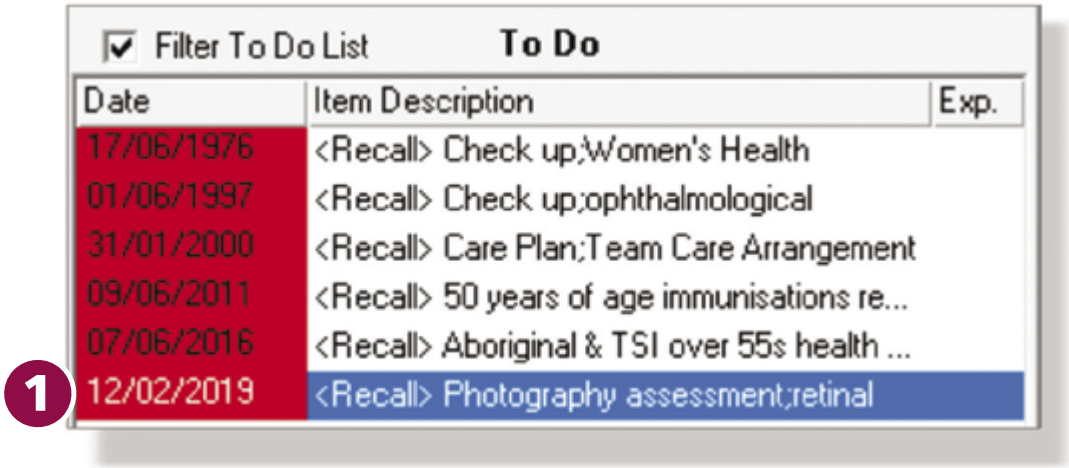
The assessment clinical item should be completed by a practitioner qualified to assess retinal images.

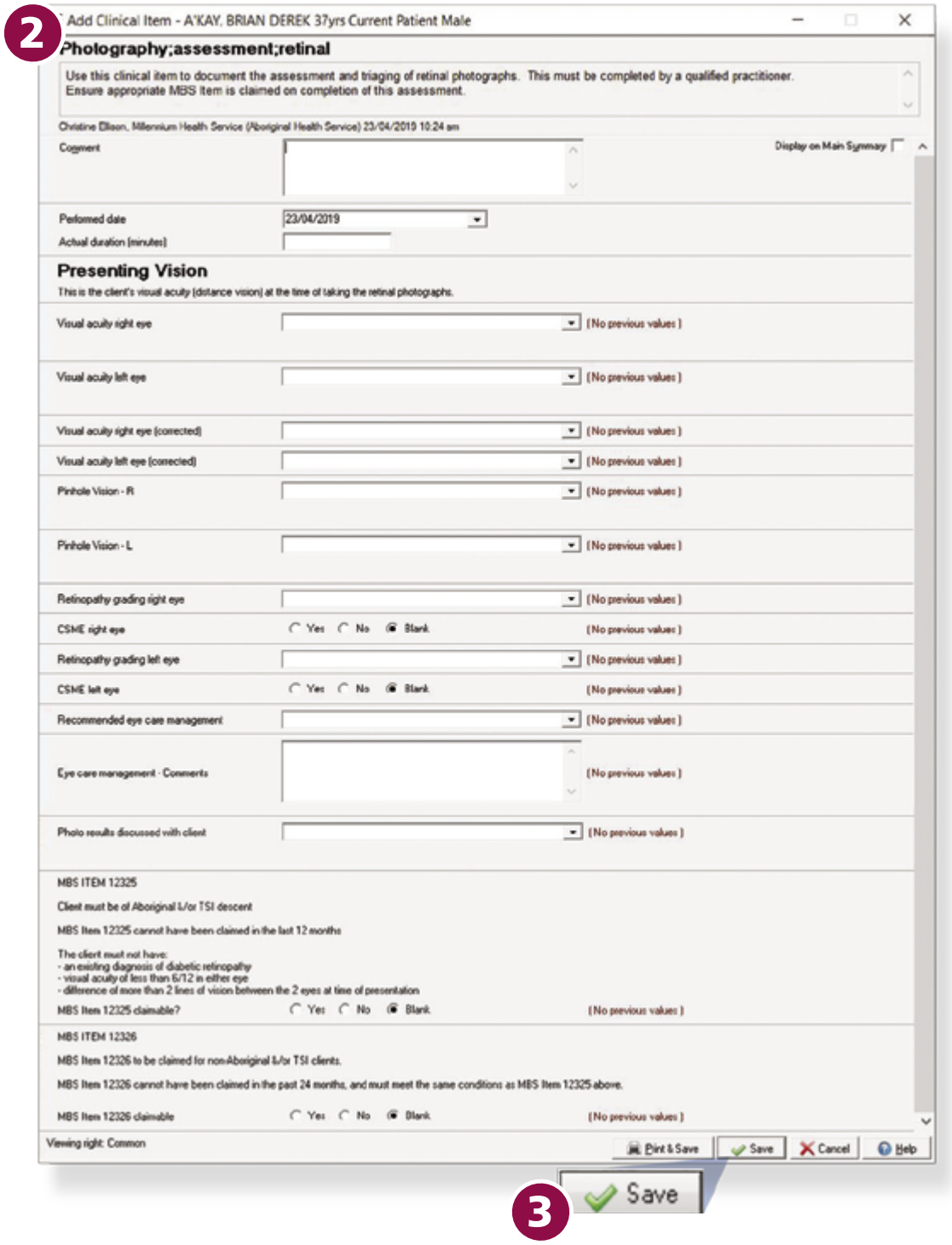
Qualified practitioners are:

- Any practicing secondary eye health professionals – i.e. optometrists, orthoptists, ophthalmologists.
- Any qualified primary health practitioners who have successfully completed the nationally accredited training *Diabetic Retinopathy Assessment: A Training Course for GPs* run by the Centre For Eye Health (CFEH).

  These are primarily GPs, but may also include nurse practitioners, Aboriginal health workers, Aboriginal health practitioners, or other nominated clinic staff, provided they have successfully completed the above mentioned training.

1. The '**Photography assessment;retinal**' recall will have been generated upon completion of the '**Photography;retinal**' clinical item. Double click on the recall in the client's '**To Do**' list and select to '**Complete It**' (see next page).





2. The clinical item will appear. The '**Photography assessment;retinal**' clinical item facilitates the documentation of the assessment of the retinal photo, recording the degree of retinopathy, if any, and the recommended course of action.

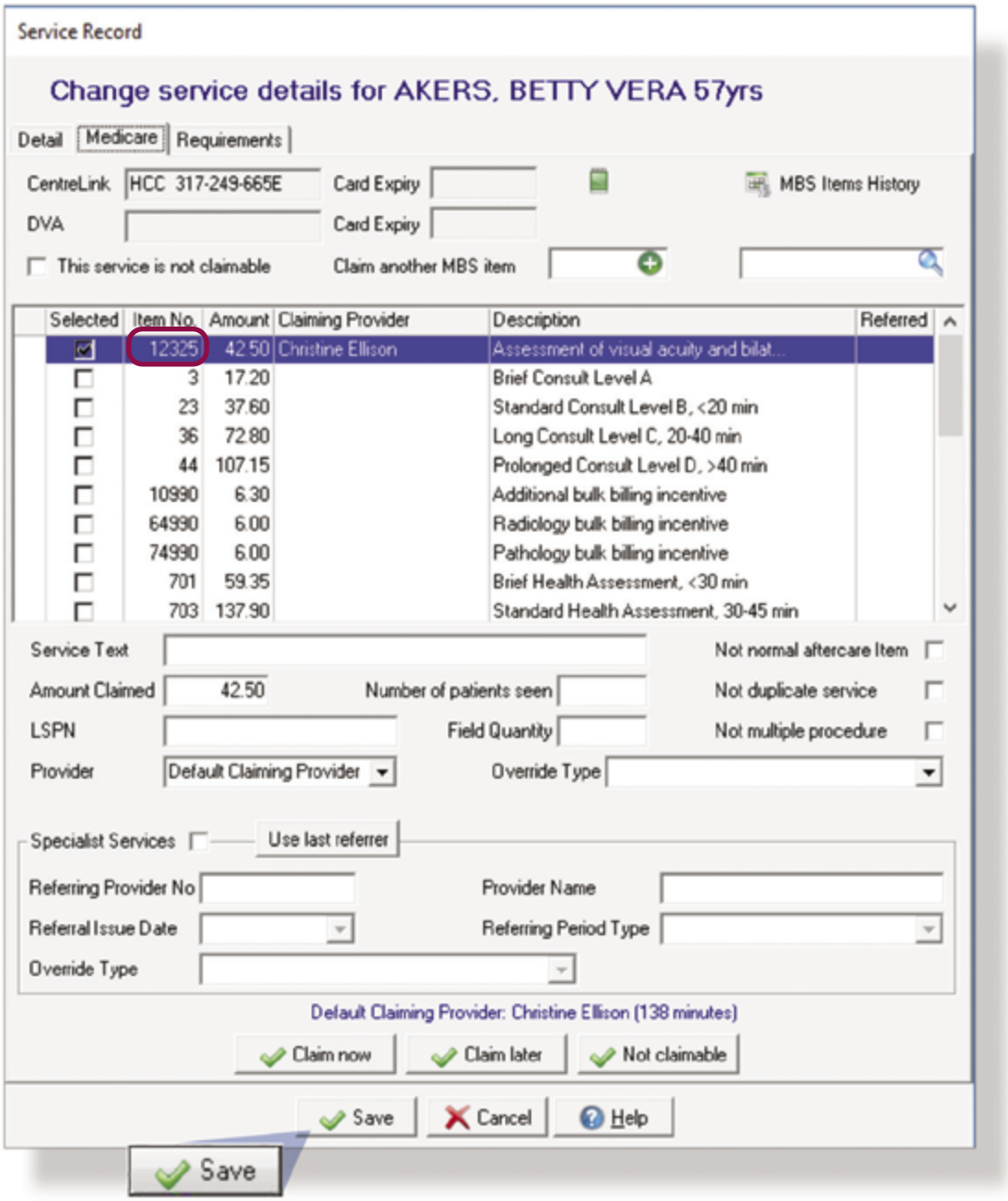
   This should be followed by claiming the appropriate MBS item and making the recommended eye health referrals if required. See pages 19-22 for details on documenting a referral.

3. Complete the fields as necessary and select '**Save**'.

Medicare Billing for Retinal Photography

There are two MBS items used for the billing of retinal photography services detailed as follows.

It is suggested that on completion of the **'Photography assessment;retinal**' clinical item, the **MBS item number 12325** is defaulted. Talk to your local Communicare administrator to arrange this.



Retinal Photography Medicare Billing Items [13]

MBS: 12325 (Aboriginal and Torres Strait Islander)

Assessment of visual acuity and bilateral retinal photography with a non-mydriatic retinal camera, including analysis and reporting of the images for initial or repeat assessment for presence or absence of diabetic retinopathy, in a patient with medically diagnosed diabetes, if: (a) the patient is of Aboriginal and/or Torres Strait Islander descent; and (b) the assessment is performed by the medical practitioner (other than an optometrist or ophthalmologist) providing the primary glycaemic management of the patient's diabetes; and (c) this item and item 12326 have not applied to the patient in the preceding 12 months; and (d) the patient does not have: (i) an existing diagnosis of diabetic retinopathy; or (ii) visual acuity of less than 6/12 in either eye; or (iii) a difference of more than 2 lines of vision between the 2 eyes at the time of presentation.

MBS: 12326 (Non – Aboriginal and Torres Strait Islander)

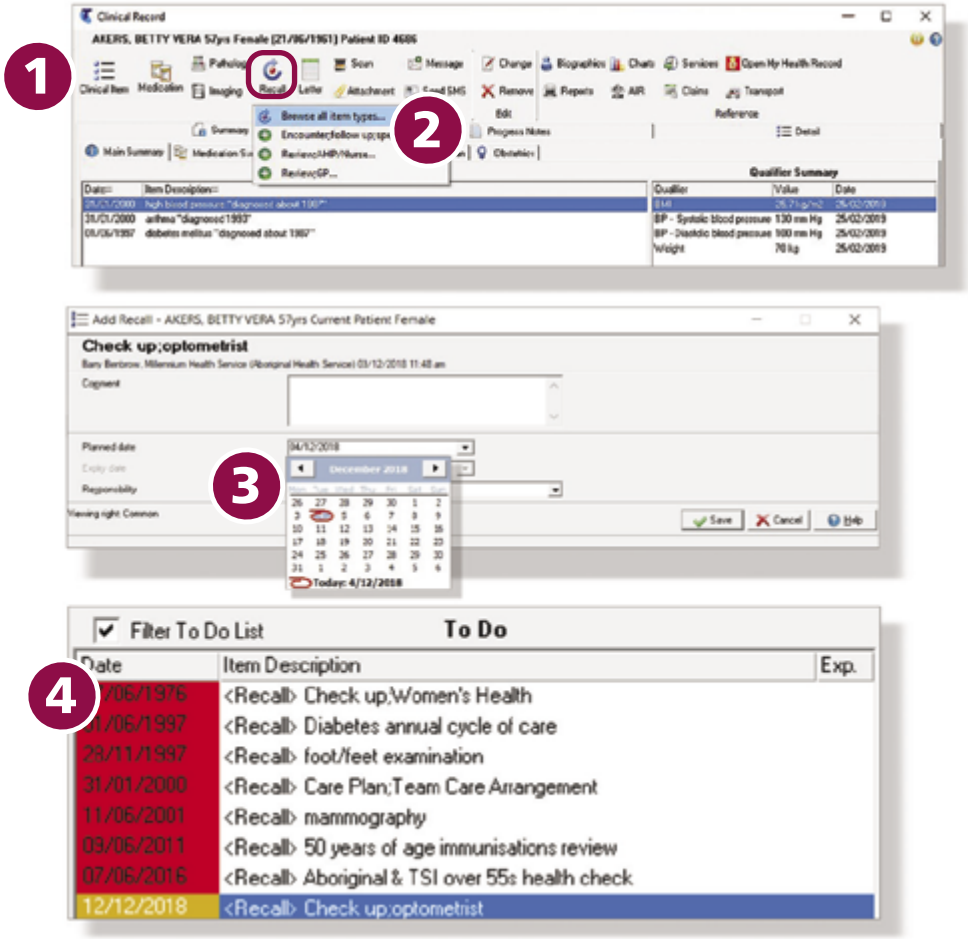
Assessment of visual acuity and bilateral retinal photography with a non-mydriatic retinal camera, including analysis and reporting of the images for initial or repeat assessment for presence or absence of diabetic retinopathy, in a patient with medically diagnosed diabetes, if: (a) the assessment is performed by the medical practitioner (other than an optometrist or ophthalmologist) providing the primary glycaemic management of the patient's diabetes; and (b) this item and item 12325 have not applied to the patient in the preceding 24 months; and (c) the patient does not have: (i) an existing diagnosis of diabetic retinopathy; or (ii) visual acuity of less than 6/12 in either eye; or (iii) a difference of more than 2 lines of vision between the 2 eyes at the time of presentation.

Referrals

It may be necessary for a client with reduced visual acuity to be reviewed by a GP in the first instance. Follow local protocols if this is the case.

The client may also need a referral to an optometrist or ophthalmologist following an eye check or the assessment of a retinal photo. This process will vary depending on whether the optometrist/ophthalmologist visits the service or not. Outlined below are the most common ways to make a referral to a visiting provider and to an external provider. Note that this process may vary at each health service, so please check local procedures/recall names before following these directions.

Referring a Client to a Visiting Optometrist/ Ophthalmologist

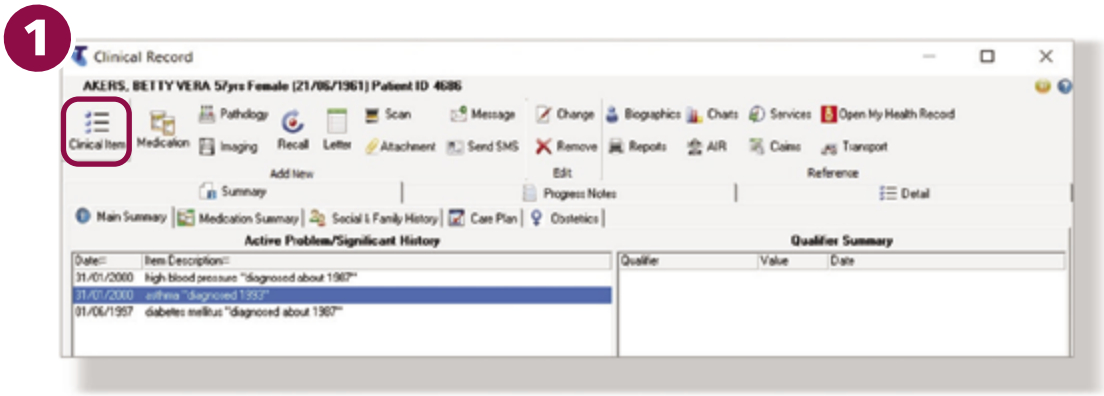


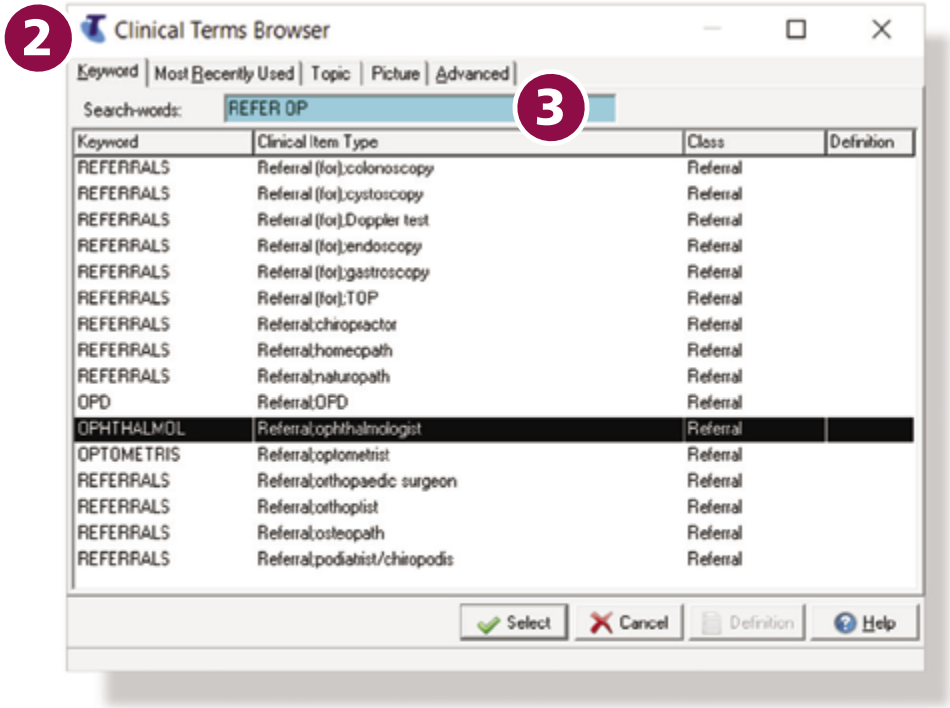
The most common way to make a referral to an optometrist or ophthalmologist who visits the health service is to set a recall.

1. Select the **Recall** icon at the top of the client's clinical record.
2. If a drop down list appears, select the appropriate recall from the list.

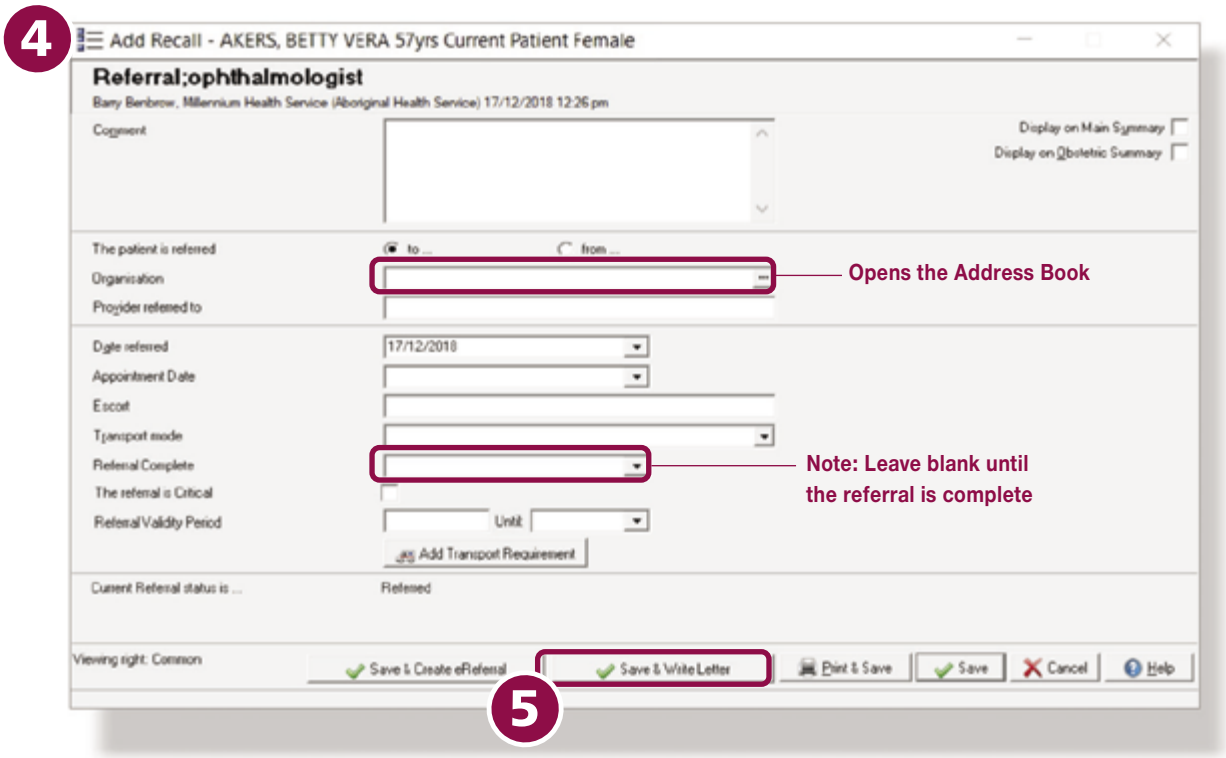
   If an appropriate recall is not found on the list, select the '**Browse all item types**' option. This will launch the Clinical Terms Browser where you can search for and select the appropriate recall.
3. Select the planned date for the recall.
4. The recall will now appear in the client's '**To Do**' list.

Referring a Client to an External Optometrist/ Ophthalmologist



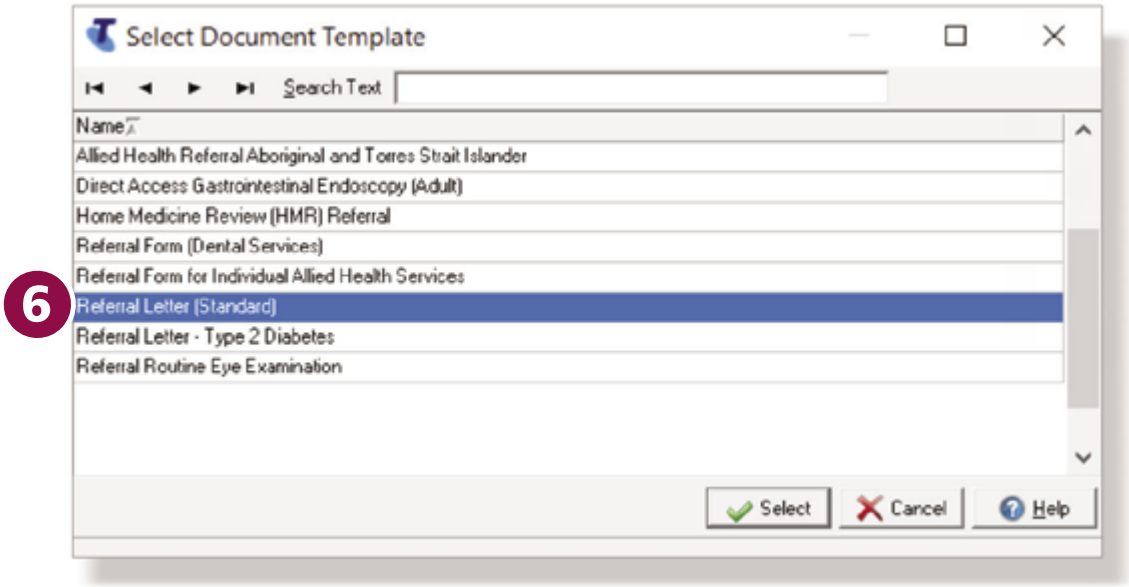


1. In the client's clinical record, select the **Clinical Item** icon.
2. This will launch the Clinical Terms Browser.
3. Under the **Keyword** tab, start typing **REFER OP** as a keyword to locate '**Referral;ophthalmologist**' and '**Referral;optometrist**'.

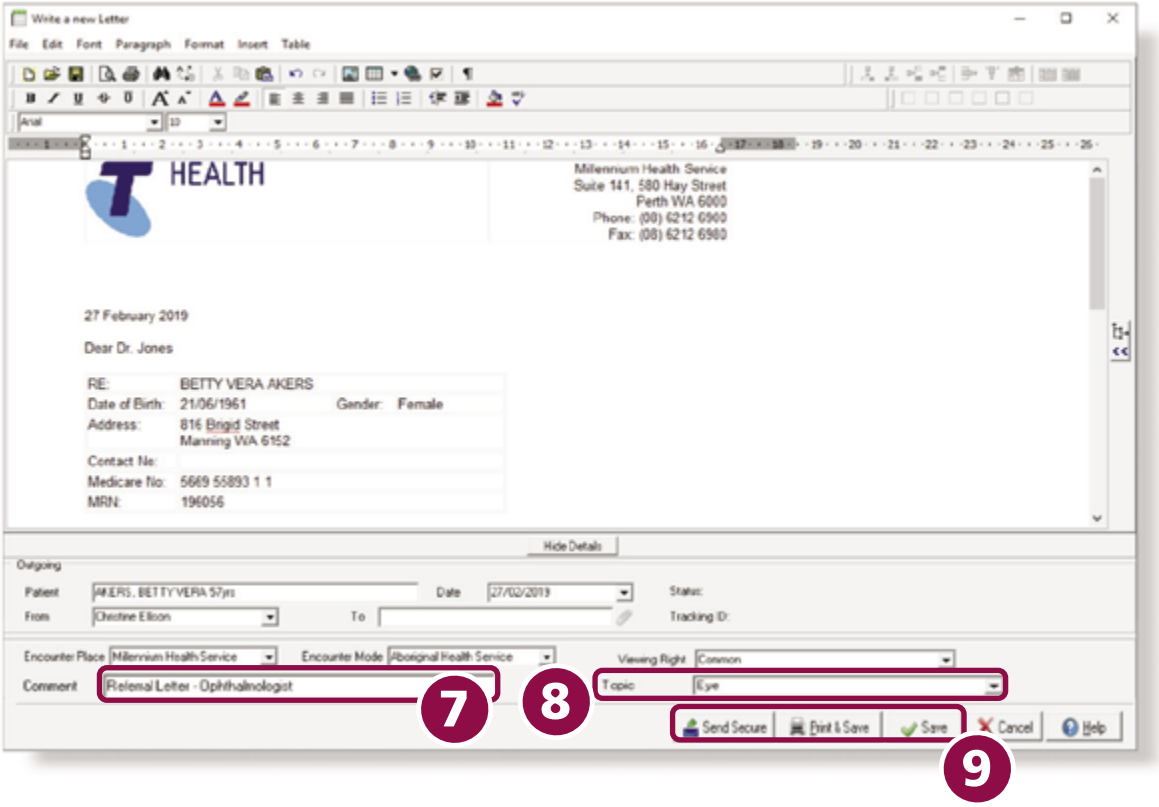


4. Select the desired referral type you wish to add and complete the appropriate qualifiers. It is acceptable to leave qualifiers blank if they are unknown, or not required/necessary.

5. Once the required information has been filled out, select '**Save & Write Letter**'.



6. Select the referral template you wish to use. Unless there is a specific optometrist/ophthalmologist template, the most appropriate option is likely to be '**Referral Letter (Standard)**'.



7. Change the Comment to the specific referral type that has been made (e.g. **Referral Letter - Ophthalmologist**) – this will make it easier to find in the client's clinical record.

8. Change the Topic to '**Eye**'.

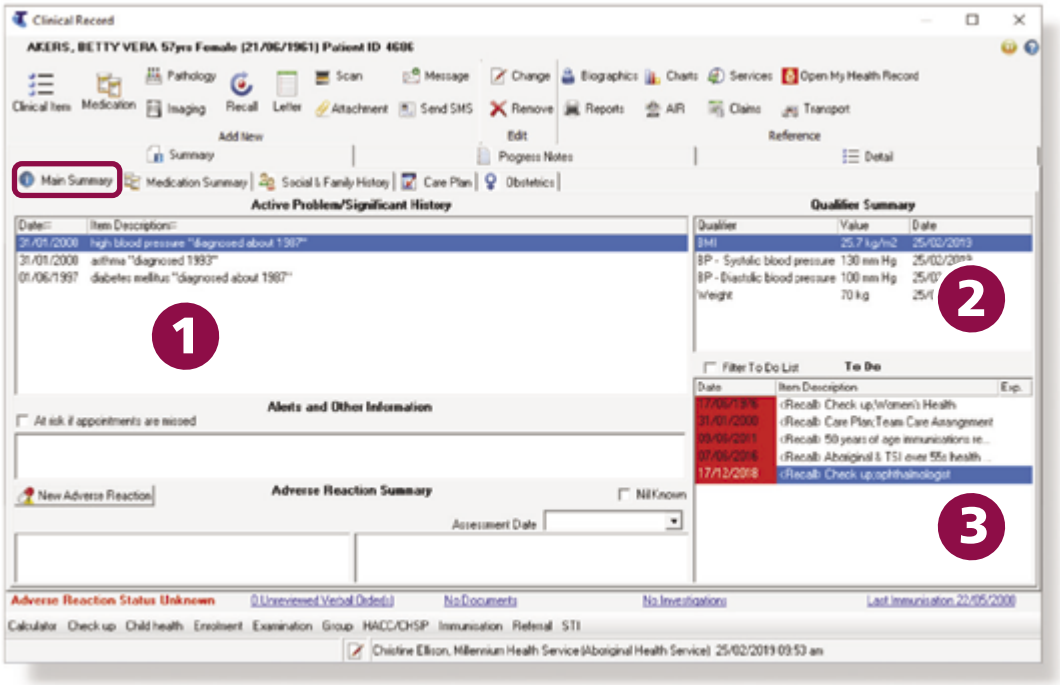
9. Record any necessary information in the referral letter and select '**Send Secure**', '**Print & Save**' or '**Save**' as required.

Once the referral has been entered, it will be displayed in the '**To Do**' list, until the '**Referral Complete**' qualifier has a date entered. It will also populate the progress notes, and can be searched for in the **Detail** tab of the client's clinical record.

Visiting Optometrist/Ophthalmologist Documentation in Communicare

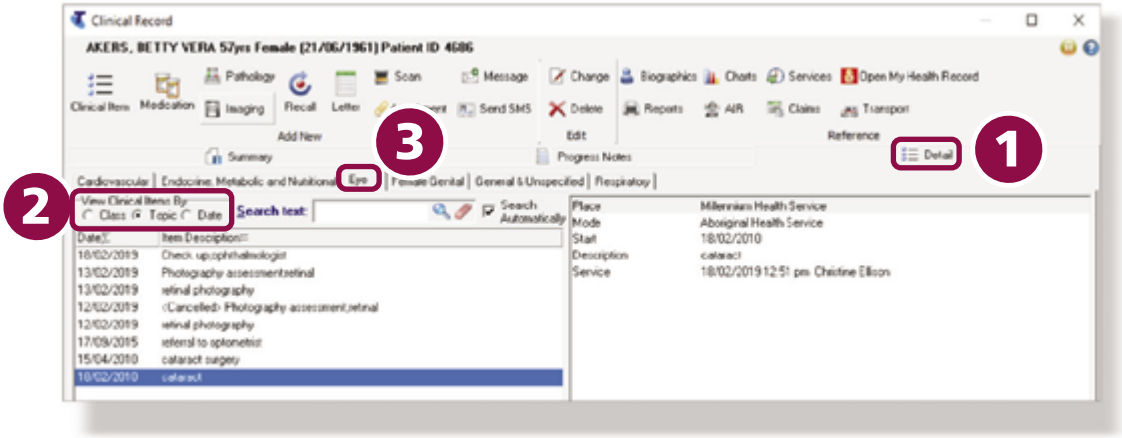
The Client's Clinical Record

When you first open a client's clinical record, it will open on the **Main Summary**. A lot of useful information can be found here.



1. Here you will find any **Active Problems/Significant History** for the client, such as whether they have diabetes.
2. Here you will find the **latest values recorded for certain qualifiers**. You can double click on any of these to see a history of values recorded.
3. Here you will find **overdue** as well as **upcoming recalls and/or referrals**.

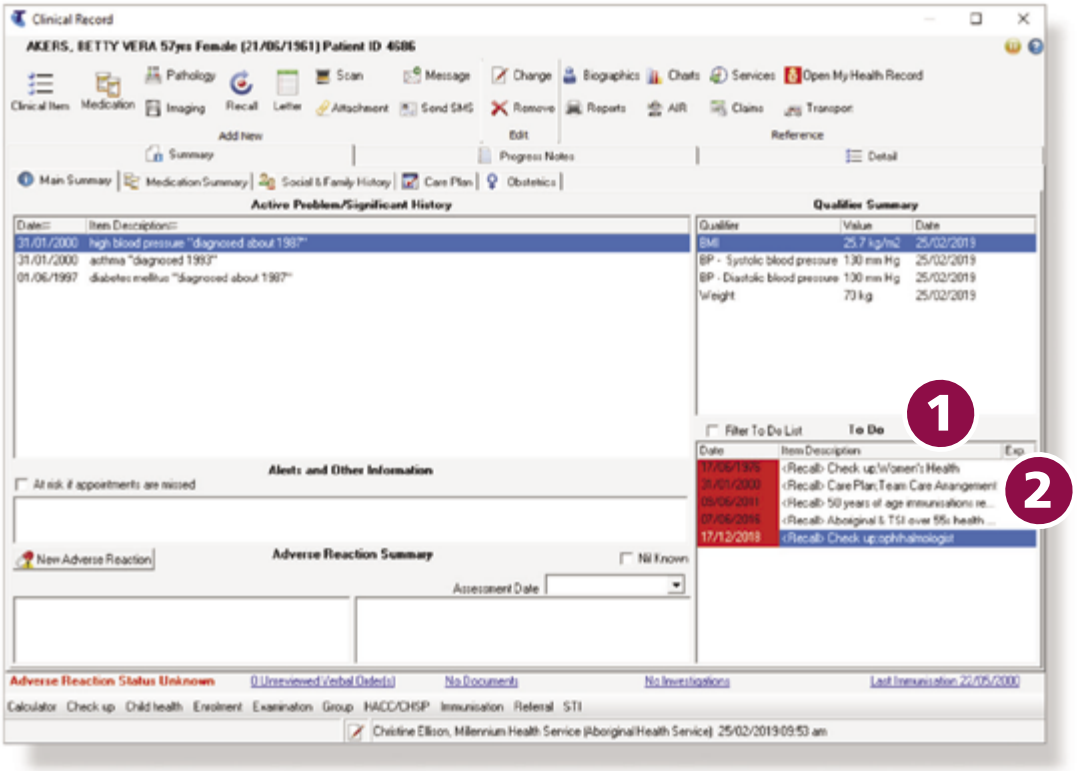
Searching a Client's Clinical Record for Previous Documentation Regarding their Eyes

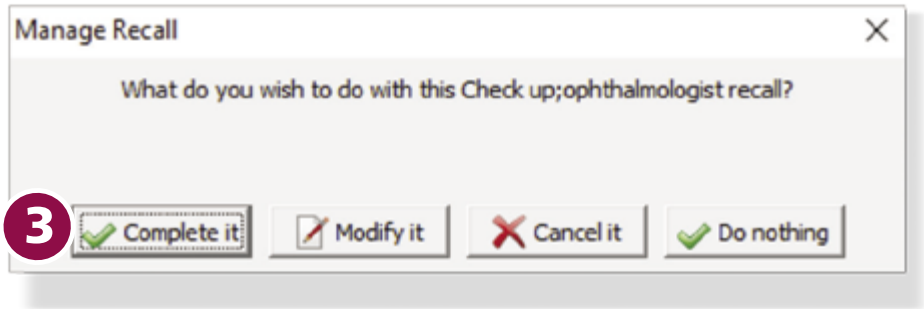


1. You can find all of the clinical items documented regarding a client's eyes by going to the **Detail** tab.
2. Select to **View Clinical Items By:** '**Topic**'.
3. Then select '**Eye**'. You can right click on any of the items here and select '**find associated service details**'.

   This will take you to the place in the client's clinical record where the progress note was written, including details of who recorded the service and any accompanying notes.

Optometrist and Ophthalmologist Clinical Items





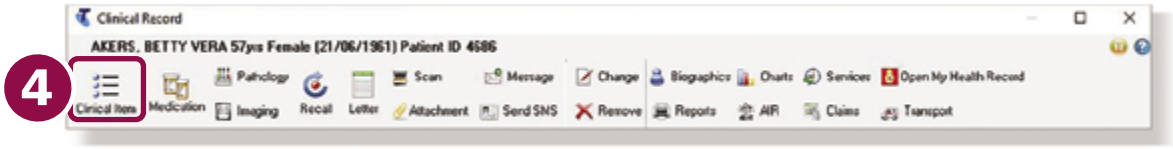
Both optometrists and ophthalmologists have dedicated clinical items in Communicare, titled '**Check up;optometrist**' and '**Check up;ophthalmologist**' respectively. To locate these:

1. Within the client's clinical record, first check the '**To Do**' list. Many clients will have a recall for '**Check up;optometrist**' or '**Check up;ophthalmologist**'.

If there is an appropriate recall in the 'To Do' list:

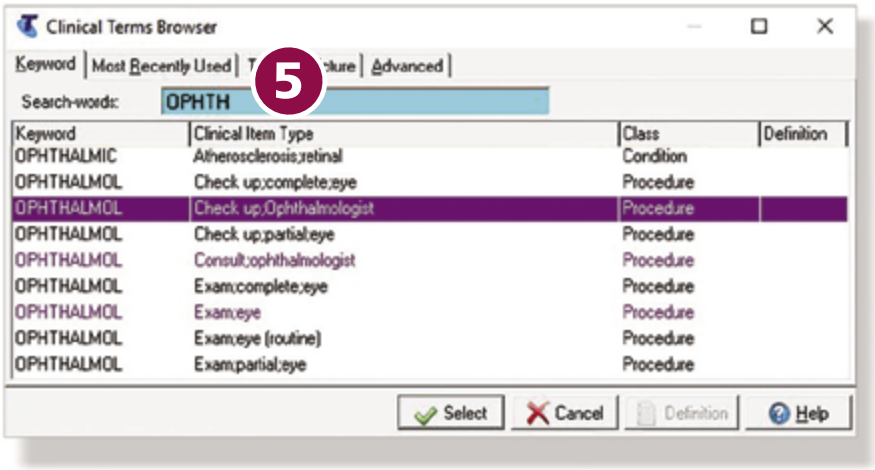
2. Double click on the recall.
3. The '**Manage Recall**' screen will appear. Select to '**Complete it**' and the clinical item will appear.

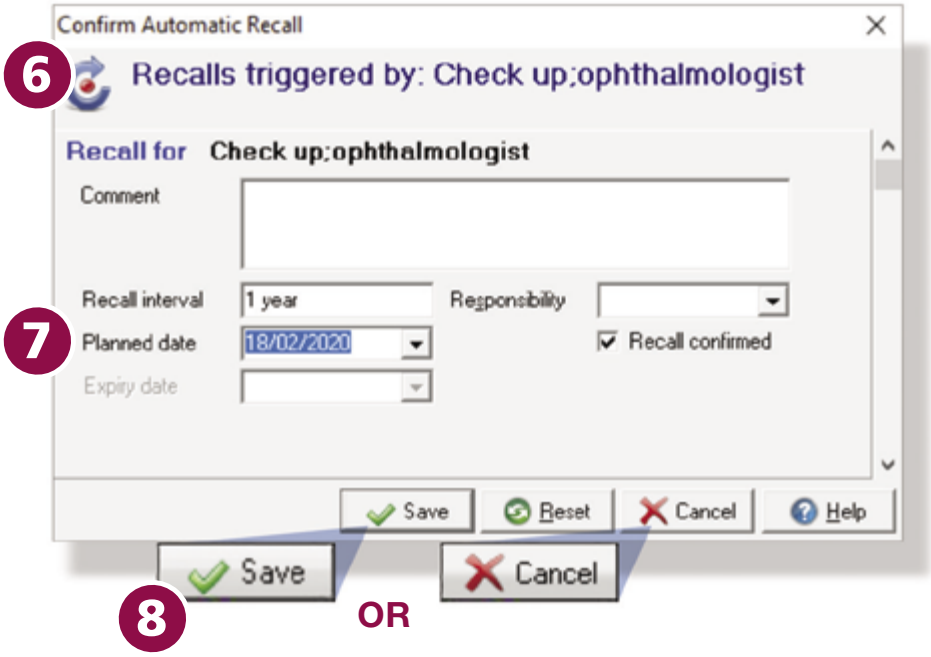
If there is a NOT an appropriate recall in the 'To Do' list, follow steps 4 and 5 on page 26



4. If there **is not** an appropriate recall in the '**To Do**' list, select the **Clinical Item** icon.

5. This will launch the Clinical Terms Browser. Enter **OPTOM** or **OPHTHAL** as a keyword to locate the appropriate clinical item. Double click to select.





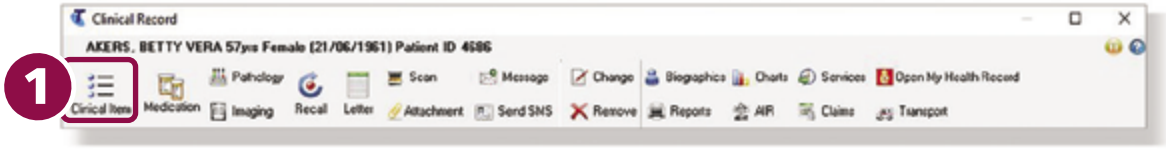
6. Upon completion of both the '**Check up;optometrist**' and '**Check up;ophthalmologist**' clinical items, a recall will be triggered for one years' time.

7. You can change the '**Planned date**' of the recall if the check up needs to be completed sooner than in one years' time.

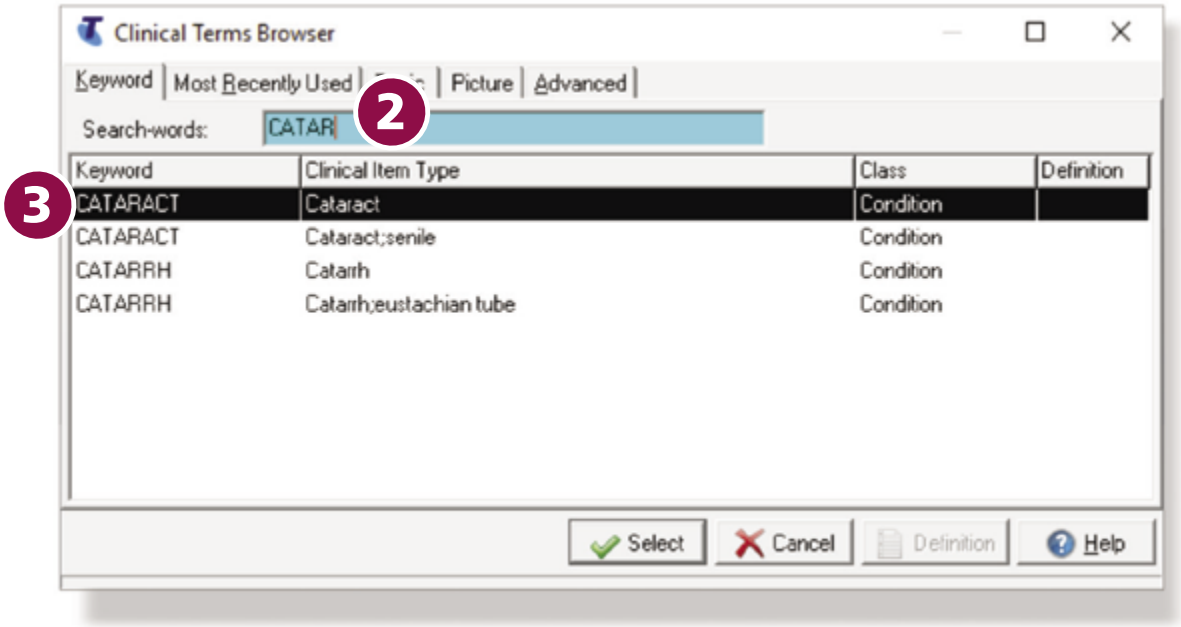
8. Select '**Save**' OR if the client does not require a recall, select '**Cancel**'.

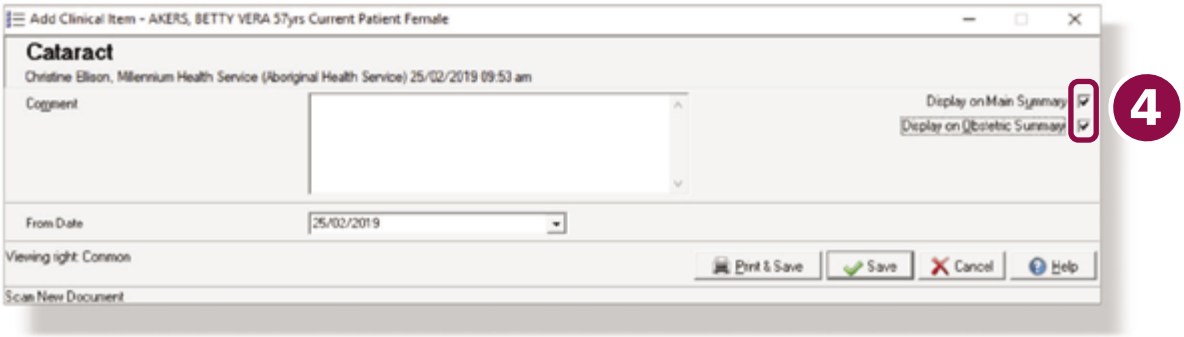
Documenting a Diagnosis

It is important that any conditions discovered are formally documented in the client's clinical record. To do this:



1. Select the **Clinical Item** icon.

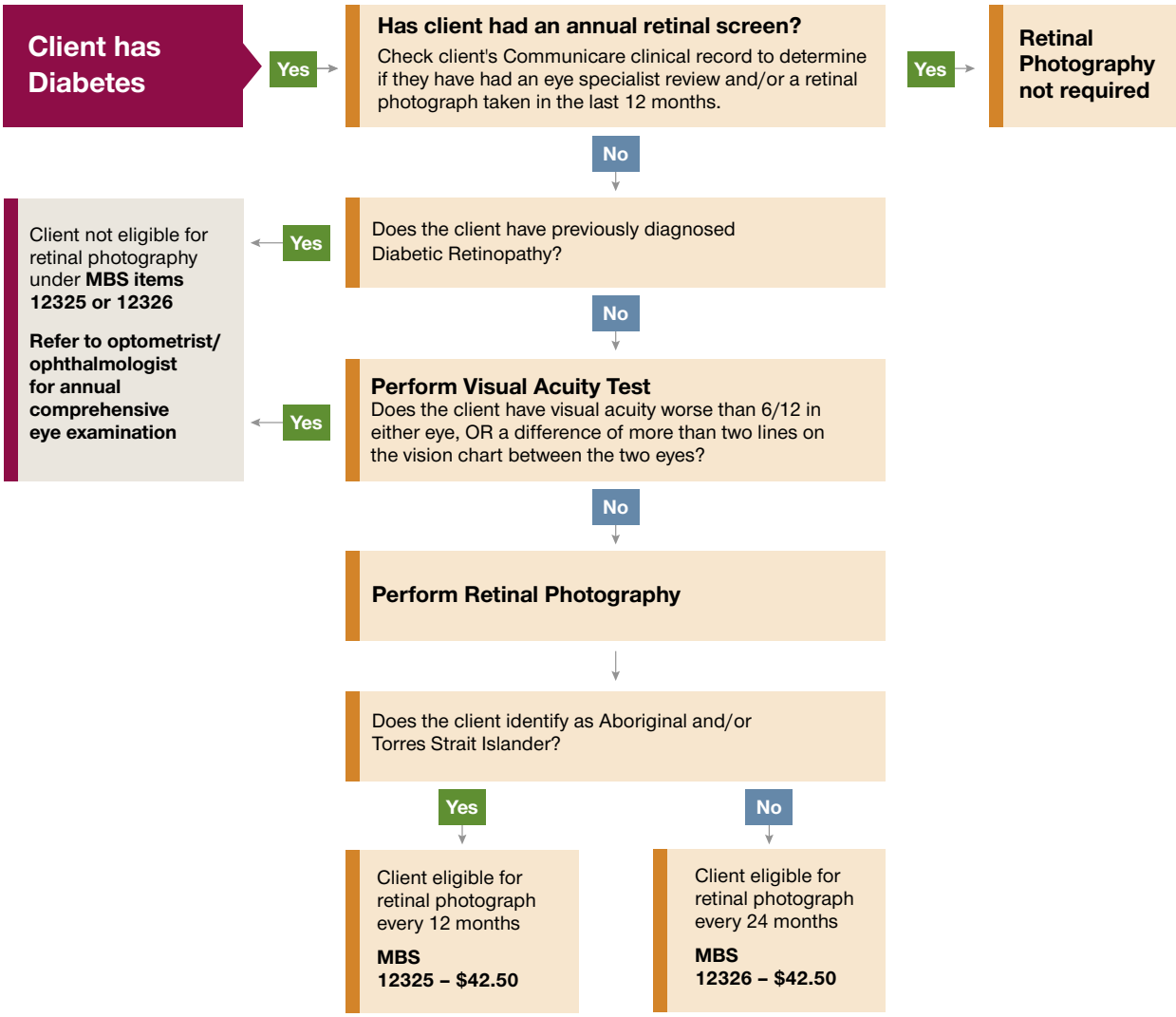




2. This will launch the Clinical Terms Browser. Begin typing the name of the condition that you want to record (e.g. **Cataract**).
3. Double click to select the appropriate clinical item.
4. If it is a major/ongoing condition that all clinical staff should know about immediately upon opening the client's clinical record, tick '**Display on Main Summary**' and '**Display on Obstetric Summary**' (if applicable) and '**Save**' the clinical item.

Retinal Photography MBS Flowchart

The flowchart below provides information to support Aboriginal health workers, Aboriginal health practitioners, registered nurses and general practitioners to optimise Medicare Benefits Scheme (MBS) revenue for clients with Diabetes using new retinal photography item numbers (MBS item numbers 12325 and 12326).



Appendix 1 – Diabetic Retinopathy Guide

The following staging guidelines and referral recommendations are adapted from the *International Clinical Diabetic Retinopathy and Diabetic Macular Edema Disease Severity Scales*, the *National Health and Medical Research Council (NHMRC) Guidelines for Management of Diabetic Retinopathy* and *A guide for General Practitioners on the use of Digital Retinal Photography* developed by Optometry Australia (OA).

No Diabetic Retinopathy

SIGNS

No diabetic retinopathy seen

MANAGEMENT

Refer for a comprehensive examination with an **optometrist within 1 year**

Mild Diabetic Retinopathy

SIGNS

Microaneurysms (m): small outpouchings of the blood vessel walls – appear as small red spots

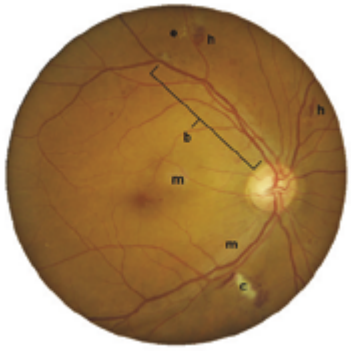
MANAGEMENT

Refer to an **optometrist within 3 months**

Moderate Diabetic Retinopathy

SIGNS

- Microaneurysms (m)
- Haemorrhages (h): bleeding due to damaged blood vessels – can be flame, dot or blot shaped
- Hard exudates (e): fatty deposits due to leakage of blood vessels and swelling of the retina – well defined yellow lesions or spots
- Cotton-wool spots (c): swelling of the nerve fibre layer due to reduced oxygen – appear fluffy white
- Blood vessel changes (b): due to reduced oxygen supply – blood vessels appear irregular and may loop



MANAGEMENT

Refer to an **optometrist*** or **ophthalmologist** ** **within 3 months**

*OA **NHMRC

Severe Diabetic Retinopathy

SIGNS

As with moderate diabetic retinopathy, but more widespread microaneurysms, haemorrhaging, blood vessel changes (b), exudate (e), and/or cotton wool spots

MANAGEMENT

Refer to an **ophthalmologist within 4 weeks**

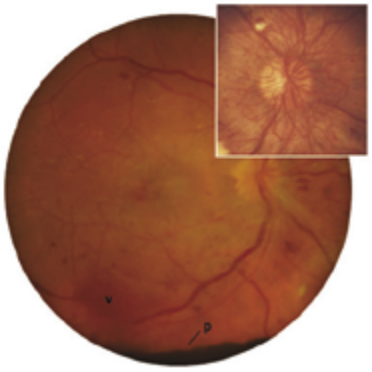
Proliferative Diabetic Retinopathy

SIGNS

- Neovascularisation (inset): new blood vessels prone to leakage – appear fan-like and feathery
- Pre-retinal haemorrhage (p): bleeding in front of the retina – typically well-defined and dark coloured
- Vitreous haemorrhage (v): bleeding into the jelly inside the eye – appears hazy in front of the retina

MANAGEMENT

Refer to an **ophthalmologist within 1 week**



Macular Oedema

SIGNS

- Macular oedema: swelling of the macula characterised by the presence of hard exudate (e) in the macula area
- Can occur at **ANY** stage

MANAGEMENT

Refer to an **ophthalmologist within 4 weeks**

National Health and Medical and Research Council Guidelines for Management of Diabetic Retinopathy (2008) https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/di15.pdf

Optometry Australia A guide for General Practitioners on the use of Digital Retinal Photography (2017) http://www.optometry.org.au/media/871149/gp_retinopathy_flowchart_a4_2017.pdf

Wilkinson, C. P., Ferris,F. L., III, Klein, R. E., Lee, P. P., Agardh, C. D., Davis, M., Dills, D., Kampik, A., Pararajasegaram, R. and Verdaguer, J. T. (2003) Proposed international clinical diabetic retinopathy and diabetic macular edema disease severity scales. Ophthalmology. 110(9), 1677-1682

Provision of Eye Health Equipment and Training (PEHET) – funded by the Australian Government

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1. Australian Health Ministers' Advisory Council (2017). *Aboriginal and Torres Strait Islander Health Performance Framework 2017 report*. Canberra: Department of the Prime Minster and Cabinet.

2. Steering Committee for the Review of Government Service Provision (2016). *Overcoming Indigenous disadvantage: key indicators 2016 report*. Canberra: Productivity Commission.

3. Foreman, J., Keel, S., Xie, J., van Wijngaarden, P., Crowston, J., Taylor, H.R., and Dirani, M. (2016). *The National Eye Health Survey 2016 report*. Melbourne: Vision 2020 Australia.

4. The Kirby Institute (2017). *Australian trachoma surveillance report 2016*. Sydney: The Kirby Institute, University of New South Wales.

5. International Diabetes Federation and The Fred Hollows Foundation (2015). *Diabetes eye health: a guide for health care professionals*. Belgium: International Diabetes Federation.

6. Australian Institute of Health and Welfare (2018). *Indigenous eye health measures 2017*. Retrieved Jan 2019 from https://www.aihw.gov.au/reports/indigenous-australians/indigenous-eye-health-measures-2017/contents/summary.

7. Razavi, H., Burrow, S., and Trzesinski, A. (2018) Review of eye health among Aboriginal and Torres Strait Islander people. *Australian Indigenous HealthBulletin* 18(4). Retrieved Jan 2019 from http://healthbulletin.org.au/articles/review-of-eye-health-among-aboriginal-and-torres-strait-islander-people.

8. Wearne, S. (2007). Remote Indigenous Australians with cataracts: they are blind and still can't see, *Medical Journal of Australia*, vol. 187, no. 6, pp. 353-356.

9. Australian Indigenous HealthInfoNet (2012). *Eye Health – Cataract*. Perth, WA: Australian Indigenous HealthInfoNet.

10. Australian Indigenous HealthInfoNet (2018). *Diabetic retinopathy among Aboriginal and Torres Strait Islander people: key facts* (August 2018 ed., pp. 1). Perth: Australian Indigenous HealthInfoNet.

11. Wong, TY., Sun, J., Kawasaki, R., Ruamviboonsuk, P., Gupta, N., Lansingh, V., Maia, M., Mathenge, W., Moreker, S., Muqit, M., Resnikoff, S., Verdaguer, J., Zhao, P., Ferris, F., Aiello, L., Taylor, H. (2018). Guidelines on diabetic eye care: The International Council of Ophthalmology Recommendations for Screening, Follow-up, Referral, and Treatment Based on Resource Settings, *Ophthalmology*, vol. 125, pp. 1608–22.

12. Remote Primary Health Care Manuals (2017). *Clinical Procedures Manual for remote and rural practice*, 4th edition. Alice Springs: Centre for Remote Health.

13. Australian Government Department of Health (2019). *MBS Online; Medicare Benefits Schedule*. Retrieved Jan 2019 from http://www.mbsonline.gov.au/internet/mbsonline/publishing.nsf/Content/Home.

Cover Artwork Reference

Paitya Miina

Illustrated by Allan Sumner, the cover artwork is a visual story about AHCSA's Eye Health Program. The title of the illustration is 'Paitya Miina', a Kaurna word meaning 'Deadly Eyes'. The artwork depicts the journey of how the AHCSA Eye Health Program will assist and support the development and enhancement of eye health services and program. This will ensure Member Services have the capacity to identify, monitor, manage and resolve poor eye health for clients. The ultimate goal is to ensure better eye health outcomes for Aboriginal and Torres Strait Islander People.

Australian Indigenous HealthInfoNet

Key facts

Diabetic retinopathy

among Aboriginal and Torres Strait Islander people

Diabetic retinopathy (DR) **can damage the eyes** of people with diabetes before they notice vision problems

1 in 10 Aboriginal and Torres Strait Islander adults with diabetes* experience vision-threatening DR[1]

*adults 40 years and over with known diabetes

Health centre staff can help patients with diabetes **prevent severe vision loss from DR by**[2]

- supporting them to **manage their diabetes**
- conducting/referring them for **yearly eye checks**
- referring them for **specialist care if needed**
- supporting them to **complete treatment**

Research tells us that **among Aboriginal and Torres Strait Islander people with diabetes**[3]

½ don't receive **yearly eye checks** **¼ have never had one**

But there is **good news!**

Yearly eye checks have increased

Vision loss from DR has decreased[3,4]

MBS item 12325 is available for health centres to do yearly screening for DR using a retinal camera

Increasing retinal screening and improving access to eye care can lead to **better eye health!**

updated August 2018

Source:

1. Keel S, Xie J, Foreman J, van Wijngaarden P, Taylor HR, Dirani M (2017). The prevalence of diabetic retinopathy in Australian adults with self-reported diabetes: The National Eye Health Survey. *Ophthalmology 124*(7), 977-984.
2. International Diabetes Federation, The Fred Hollows Foundation (2015) *Diabetes eye health: a guide for health care professionals.* Brussels, Belgium: International Diabetes Federation
3. Foreman J, Keel S, Xie J, van Wijngaarden P, Crowston J, et al. (2016) *The National Eye Health Survey 2016 report.* Melbourne: Vision 2020 Australia
4. Taylor HR, National Indigenous Eye Health Survey Team (2009) *National Indigenous eye health survey: minum barreng (tracking eyes): full report.* Melbourne: Indigenous Eye Health Unit, The University of Melbourne

For more information see the key facts and animated infographic about DR that are available on the Health*InfoNet*'s Eye Health Portal: healthinfonet.ecu.edu.au/learn/health-topics/eye-health/diabetic-retinopathy

The Fred Hollows Foundation

ECU Australia University Edith Cowan

Artwork: Life before the drought by Julie Weekes

Eye health
Key facts

Information for health care providers to assist their everyday practice

Diabetic retinopathy among Aboriginal and Torres Strait Islander people

Diabetic retinopathy (DR) is a serious eye problem that can develop in people with diabetes and can lead to vision loss and blindness. It can damage the eye before people know they have diabetes or experience any problems with their vision.

The good news is:

- Up to 98% of severe vision loss and blindness from DR can be prevented if people receive recommended eye checks and treatment.
- Aboriginal and Torres Strait Islander people with diabetes are now more likely to receive yearly eye checks than in the past and are less likely to experience vision loss due to DR.

But despite signs of progress:

- Aboriginal and Torres Strait Islander people are still at greater risk of developing diabetes and DR than non-Indigenous people.
- For Aboriginal and Torres Strait Islander people with diabetes, only half will have received their last yearly eye check for DR, and a quarter will never have had one.

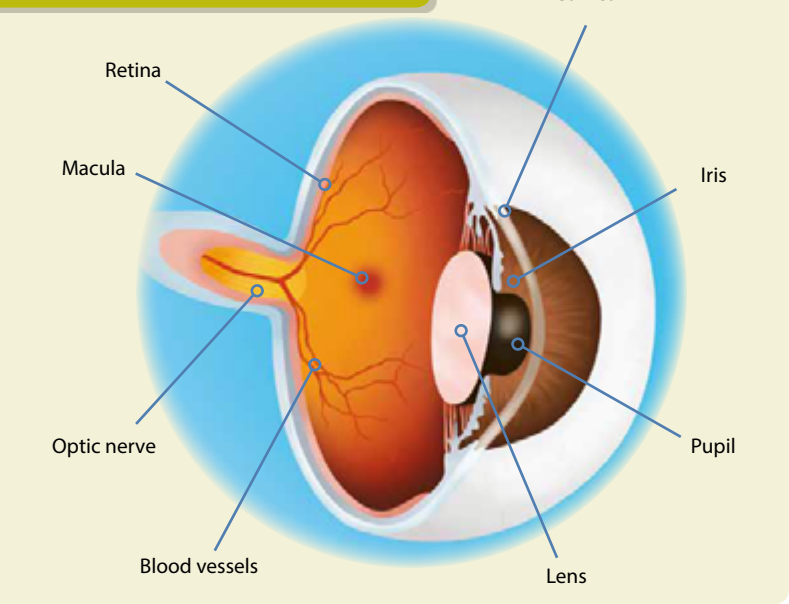
Now it is important that:

- Aboriginal and Torres Strait Islander people are supported to manage their diabetes and get yearly eye checks so that DR is detected early.
- Yearly eye checks include: a medical history, vision test, retinal examination, and referral if specialist eye care is needed.
- People with DR are given information about eye care pathways and are supported to seek specialist treatment at the right time.

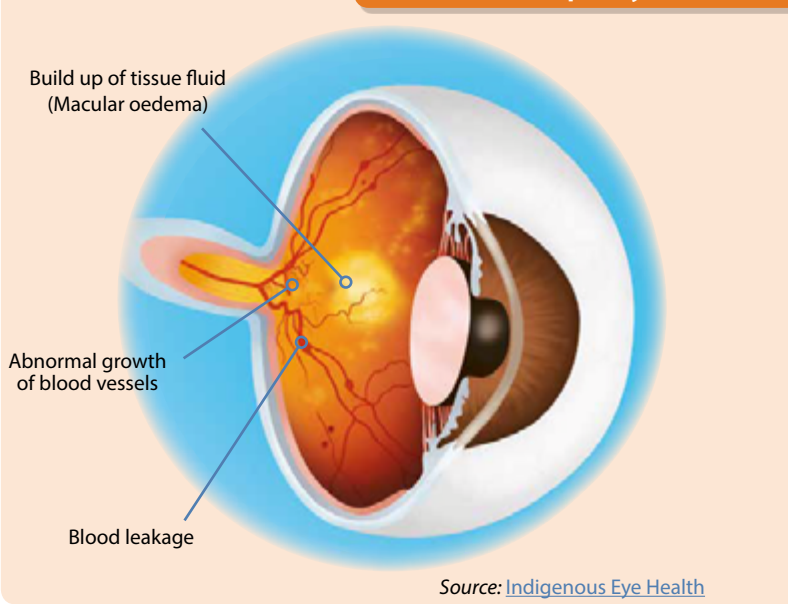
How does diabetic retinopathy occur?

- DR occurs when chronic high blood sugar levels result in changes in blood flow that damage small blood vessels in the retina of the eye. The blood vessels can leak and bleed, abnormal blood vessels can grow, and retinal detachment can occur.
- DR usually affects both eyes and progresses over time through the early (non-proliferative) stages—which are usually asymptomatic (have no symptoms)—to the late (proliferative) stage when severe vision loss can occur.
- When symptoms of vision loss occur they include: spots, floaters, blank areas or dark areas in the visual field.
- DR can lead to an eye condition called diabetic macular oedema that can cause blurry vision at any stage of DR.

Normal retina



Diabetic retinopathy



Source: Indigenous Eye Health

For more info: *Diabetes eye health: a guide for health care professionals* (International Diabetes Federation and The Fred Hollows Foundation, 2015)

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Who gets diabetic retinopathy?

- All people with type 1 and type 2 diabetes are at risk of developing DR and the longer they have diabetes the greater the risk.
- Aboriginal and Torres Strait Islander people are three times more likely to have diabetes, which puts them at greater risk of developing DR.
- People with poorly controlled blood sugar, blood pressure and cholesterol levels are more likely to develop DR.

For more stats: The National Eye Health Survey 2016 report (Foreman, et al., 2016)

Aboriginal and Torres Strait Islander adults with diabetes are

2x

as likely to have vision impairment from DR as non-Indigenous adults with diabetes.[1]

Up to

98%

of severe vision loss from DR can be prevented by detecting DR early and treating it at the right time.[2]

How to prevent vision loss from diabetic retinopathy

People with diabetes need:

- education and lifestyle advice to encourage healthy eating habits and regular exercise
- eye checks when diabetes is diagnosed and regular eye checks afterwards
- medication, if prescribed by a medical practitioner, to control blood sugar, blood pressure and blood cholesterol levels
- early detection of DR and treatment at the right time.

Communities need education about DR.

For more info: Diabetes eye health: a guide for health care professionals (International Diabetes Federation and The Fred Hollows Foundation, 2015)

healthy eating

regular exercise

prescribed medication

regular eye checks

How to detect diabetic retinopathy

- There are no symptoms in the early stages of DR, so regular eye checks are needed for detection before it progresses to a stage when serious vision loss and blindness can occur.
- NHMRC guidelines recommend that Aboriginal and Torres Strait Islander people with diabetes have an eye check every year (eye checks for non-Indigenous people are recommended every two years).
- As DR progresses and damage to the retina increases, people may need to have their eyes checked more often.
- Retinal examinations can be carried out by a health worker, nurse or doctor in a primary health care setting if there is a special digital camera available that takes photographs of the retina.
- Retinal examinations can also be carried out by eye specialists (optometrists or ophthalmologists) using a digital camera, ophthalmoscope or slit-lamp.

For info about DR screening: Check Today, See Tomorrow: diabetic retinopathy screening card (Indigenous Eye Health Unit, 2015)

Images of the retina

Normal

Abnormal

Sight-threatening

Source: Indigenous Eye Health

1. Based on crude figures for Indigenous adults aged 40 years and over and non-Indigenous adults aged 50 years and over.
2. Taylor HR, National Indigenous Eye Health Survey Team (2009) *National Indigenous eye health survey: minum barreng (tracking eyes): summary report*. Melbourne: Indigenous Eye Health Unit, The University of Melbourne

How to treat diabetic retinopathy

- At all stages of DR, people need to manage their diabetes and get regular eye checks.
- During the early stages of DR, no treatment is needed unless diabetic macular oedema occurs.
- Laser treatment (photocoagulation) is the main form of treatment when DR progresses.
- If a person has already lost sight from DR, laser treatment will only help to maintain the sight that is left—it cannot restore lost sight.
- More complicated cases may need eye surgery (vitrectomy).
- Injection of medication into the eye (intravitreal injection of anti-VEGF medication) is a relatively new treatment option for some cases.

Source: Lions Outback Vision

For more info: Diabetes eye health: a guide for health care professionals (International Diabetes Federation and The Fred Hollows Foundation, 2015)

Delivering eye care for diabetic retinopathy

Primary health care can support patients to manage their diabetes and access care for their eyes by:

- incorporating yearly eye checks into patient management plans
- establishing a patient recall system to identify and remind all diabetes patients about their yearly eye checks
- conducting eye checks (or referring patients to an eye specialist to have one)
- referring patients with DR or vision impairment to an eye specialist for further assessment and management
- supporting patients after referral to: make appointments, complete treatment, and attend appointments for follow-up and review
- providing information about referral pathways to help people with DR get specialist care when they need it.

- Since 1 November 2016, primary health care services have had access to an Aboriginal and Torres Strait Islander specific MBS item (12325) to support screening for DR using a retinal camera.
- The Integrated Team Care (ITC) Program helps Aboriginal and Torres Strait Islander people access culturally appropriate primary health care and provides care coordination services to people who need multidisciplinary care for chronic disease, including DR.
- Outreach optometry and ophthalmology services are delivered to people living in regional, rural and remote areas through the Visiting Optometrists Scheme (VOS) and the Rural Health Outreach Fund (RHOF).

Source: The Fred Hollows Foundation

- Fully equipped vans—like the Lions Outback Vision Van in Western Australia and the IDEAS Van in Queensland—give rural and remote Australians access to specialist eye care. The vans are a mobile treatment centre offering comprehensive optometry and ophthalmology care, including the treatment of DR.

More information about eye care for diabetic retinopathy

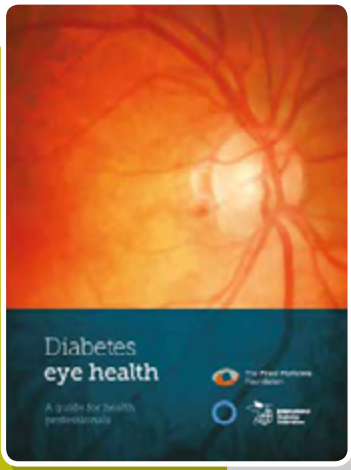
Health practice resources

Check Today, See Tomorrow [resource kit] (Indigenous Eye Health Unit, 2015):

- Diabetes eye care flipchart
- Messages and adult eye check
- Diabetic retinopathy screening card

Diabetes eye health: a guide for health care professionals [report] (International Diabetes Federation and The Fred Hollows Foundation, 2015)

Guidelines for the management of diabetic retinopathy [report] (National Health and Medical Research Council, 2008)



Source: The Fred Hollows Foundation

Source: Indigenous Eye Health

Training resources

Diabetic retinopathy grading [online course] (Indigenous Eye Health Unit and Centre for Eye Research Australia, updated 2016)

Eye health and diabetes [online module] (Remote Area Health Corps)

Primary eye care checks [online module] (Remote Area Health Corps)

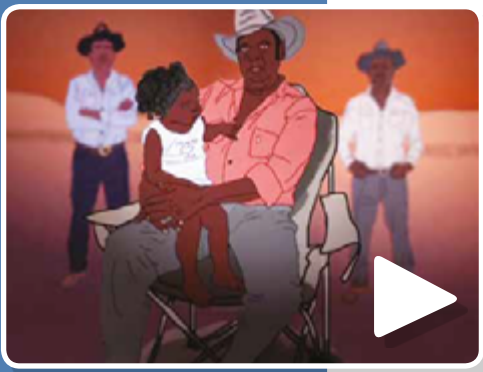
Health promotion resources

Aunty Mary's story [video] (Guide Dogs NSW/ACT, Hooker M, 2013)

Bad sugars, bad eyes [video] (Lions Outback Vision, 2012)

Check Today, See Tomorrow [resource kit] (Indigenous Eye Health Unit, 2015):

- Diabetes eye care brochure
- Urban, rural and remote posters
- Multimedia resources



Source: Lions Outback Vision

These key facts are available online at: www.healthinfonet.ecu.edu.au/other-health-conditions/eyeworkers/diabetic-retinopathy/key-facts

The Eye Health web resource

- These key facts have been developed by the Australian Indigenous Heath*InfoNet* and The Fred Hollows Foundation and are available on the Health*InfoNet's* Eye Health web resource: www.eyehealth.org.au.
- The Eye Health web resource provides health professionals with the latest information and research to inform their everyday practice. It includes an extensive collection of information and resources about the eye health of Aboriginal and Torres Strait Islander people, a workforce portal (a selection of plain language information for health care providers) and a yarning place (an online network to help people connect).
- The health workforce is encouraged to contribute to the development of the Eye Health web resource by sharing knowledge and experience and suggesting new materials for inclusion: www.healthinfonet.ecu.edu.au/contact/share_info.

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Yarning place: www.yarning.org.au/group/12
Website: www.eyehealth.org.au

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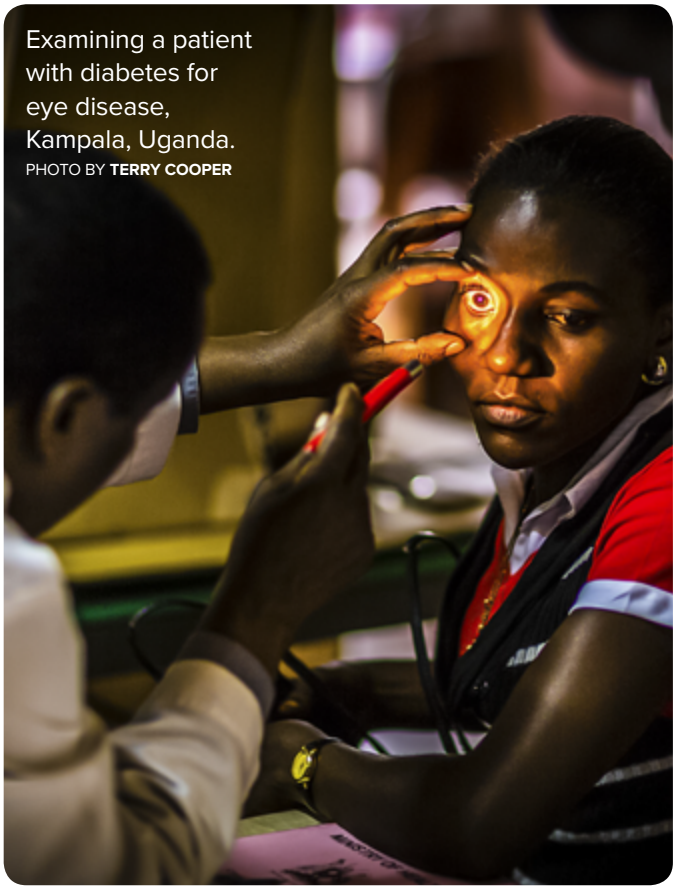


Examining a patient with diabetes for eye disease, Kampala, Uganda.
PHOTO BY **TERRY COOPER**

Doctor holds up two fingers during a vision test, Cambodia.
PHOTO BY **ELLEN CRYSTAL**

Strengthening health systems to manage diabetic eye disease: Integrated care for diabetes and eye health

Every person with diabetes is at risk of going blind. At any time around a third of people with diabetes have some form of eye health complication, with devastating and wide-ranging social and economic impacts on people living with diabetes, their families and communities.

To address the growing burden of diabetic eye disease, our organisations encourage urgent action from governments, medical associations, service providers and patient organisations to:

1. ***Integrate eye health within routine diabetes care by primary health care providers***
2. ***Improve collaboration across the diabetes and eye health sectors***
3. ***Foster and support patient-centred care approaches for diabetic eye health***

Diabetic Eye Disease – a growing global threat

With the number of people developing diabetes rising sharply around the world, in both developed and developing economies, the global burden of diabetic eye disease and vision impairment will continue to increase. Without effective urgent action, this has the potential to cripple already overwhelmed health systems – particularly in low and middle income countries where 75% of people with diabetes live, and where diabetes is growing most rapidly.[1]

Early preventative action is being impeded

Almost all vision impairment and blindness from diabetic eye disease can be prevented through effective diabetes management, early detection of eye problems through regular eye exams, and timely treatment.[2]

Frequently, however, eye health remains outside of mainstream primary diabetes care and is left to eye health specialists where it is difficult to access from the community level. Many people with diabetes – as well as many health professionals – are unaware that diabetes can cause vision impairment and irreversible blindness, and do not undergo regular eye examinations. Limited awareness, combined with financial and geographical barriers for patients to access needed services, and uneven distribution of skilled personnel and equipment, all impede access to vital sight-saving services, particularly for people in rural and remote areas.

Recommendations for action

Our organisations urge strong, innovative action and improved collaboration across the health system to overcome current barriers and bring eye health to the frontline of diabetes care:

1. Integrate eye health in routine diabetes care by primary health care providers

Appropriately trained primary health and diabetes professionals are most likely to have the opportunity to educate at risk patients, provide or facilitate essential regular eye examinations as part of routine care for people with diabetes, and ensure people with diabetic eye disease or vision complications are guided to access specialist eye services for timely treatment and follow up.

Increasing eye health assessments at the primary care level, through the empowerment and appropriate training for primary health and diabetes care personnel will help to improve patient access and overall assessment rates, cut wait times and reduce unnecessary referrals to specialist care.[3] This will also enable specialist eye health practitioners to focus on treatment, rather than examination.

Enabling effective integration of eye health and routine diabetes care requires action to:

- ***Ensure eye assessments are part of the routine diabetes care for people living with diabetes.***
- ***Strengthen human resources through increased investment in appropriate diabetic eye health training and tools for primary health and diabetes care professionals.***
- ***Develop and strengthen laws, policies and guidelines that support integrated approaches, promote appropriate task shifting from eye health specialists to trained primary health professionals, and provide context and culturally-appropriate guidance to service providers.***

[1] International Diabetes Federation, *IDF Diabetes Atlas: Seventh Edition 2015*, Brussels, 2015, p. 51

[2] See *ICO Guidelines for Diabetic Eye Care (Updated 2017)*. San Francisco, California: International Council of Ophthalmology, 2017, p 1. Available at: http://www.icoph.org/downloads/ICOGuidelinesforDiabeticEyeCare.pdf

[3] This recommendation aligns the International Council of International Council of Ophthalmology's *ICO Guidelines for Diabetic Eye Care (Updated 2017)*. San Francisco, California: International Council of Ophthalmology, 2017. Available at: http://www.icoph.org/downloads/ICOGuidelinesforDiabeticEyeCare.pdf

A diabetes patient having his eyes examined by an eye doctor, Vietnam.
PHOTO BY **HANH PHAM #MAKEVISIONCOUNT**

- ***Reduce financial barriers to access, including ensuring, for example, that diagnostic tests and treatment for diabetic eye disease are included in health financing models that promote Universal Health Coverage.***
- ***Scale up infrastructure including compatible e-health systems at different levels of healthcare and increase investment in the development of more cost effective, sturdy and automated technologies for assessment, referral, and treatment.***

2. Improve collaboration across the diabetes and eye health sectors

Far too often, general diabetes care on one side, and the prevention, treatment and rehabilitation of diabetes complications such as diabetic eye disease on the other are addressed independently by different specialist health cadres and strategies.

A more holistic approach to addressing diabetes and all its complications, including diabetic eye disease, would help to break down these silos and promote meaningful cross-sectoral coordination, specialist expertise and information exchange. This could reduce unnecessary duplication of efforts, and advance more efficient, flexible and optimised models of care for people with diabetes.

Strengthening this collaboration requires stronger partnerships between actors in the eye health and diabetes sectors to develop joint strategies, improve robust referral pathways, exchange knowledge and expertise, and define their integrated responsibilities in supporting people with diabetes.

3. Foster and support patient-centred care approaches for diabetic eye health

Patient perspectives on diabetes, acceptability of available healthcare services and perceived benefits of treatment are critical determinants in effective early detection, treatment and management of diabetic complications.

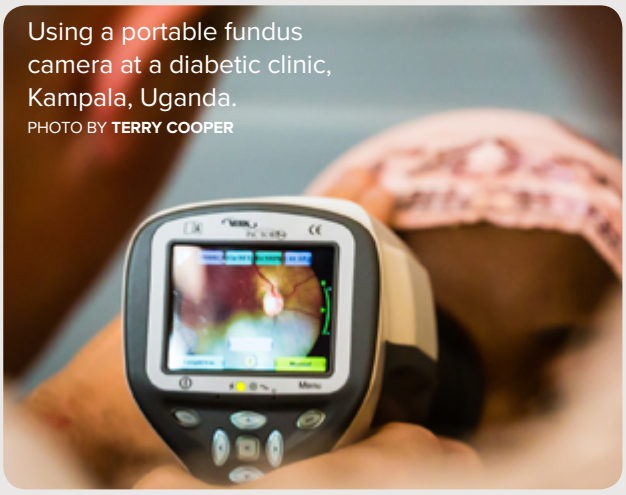
A comprehensive approach to the management of patients with chronic diseases like diabetes requires more than access to care and essential medicines. Access to health information, psycho-social support and participatory decision-making are also crucial for better case management.

Health strategies for the detection and treatment of diabetic eye disease need to be set up in a way that starts from the perspective and the needs of a person diagnosed with diabetes. Strategies should prioritise approaches to reduce patient costs and distances to services, as well as ensuring that information, education and services are provided in a culturally acceptable and context appropriate manner and language for patients. People with diabetes are entitled and should be empowered to make informed decisions about their care, how they can access appropriate treatment, follow up and support systems they want to use.

With strategic investment and leadership, we can reduce the burden of diabetic eye disease. In some countries such as the United Kingdom, where governments have made the commitment to prioritise access to good quality diabetic eye care for all citizens, diabetic eye disease is no longer the leading cause of blindness among working age people.[4]

Addressing this growing threat on a global scale requires similar commitment from all stakeholders to ensure that accessible, affordable, appropriate and safe eye care services become an integral part of diabetes management, care and support for all people with diabetes.

Screening a patient for diabetic retinopathy, Kampala, Uganda.
PHOTO BY **TERRY COOPER**



Using a portable fundus camera at a diabetic clinic, Kampala, Uganda.
PHOTO BY **TERRY COOPER**

Eye examination during workshop, Kampala, Uganda.
PHOTO BY **TERRY COOPER**

[4] Liew. G, Michaelides. M, Bunce. C, "A comparison of the causes of blindness certifications in England and Wales in working age adults (16 to 64 years), 1999 to 2000 with 2009 to 2010" BMJ Open 2014, 12 February 2014, available at http://bmjopen.bmj.com/content/4/2/e004015.full

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Endorsed by International Agency for the Prevention of Blindness (IAPB), International Council of Ophthalmology (ICO), World Council of Optometry (WCO) and International Diabetes Federation (IDF)

Australian Indigenous HealthInfoNet

In brief: eye screening and care

navigating the treatment pathway

Aboriginal and Torres Strait Islander people begin life with generally very good vision—on average better than non-Indigenous people—but in adulthood, rates of blindness increase at an earlier age than for non-Indigenous people.

Complications from some health conditions (e.g. diabetes) can result in severe vision loss and blindness that can be prevented if people receive regular eye checks, relevant eye screening and care.

It's important that Aboriginal and Torres Strait Islander children and adults are supported to get regular eye checks and navigate the treatment pathway.

Eye screening is a quick way to detect eye problems and can be conducted by a range of trained health care professionals, including: Aboriginal and Torres Strait Islander Health Workers and Practitioners, eye health workers (EHWs), regional eye health coordinators (REHCs), nurses and general practitioners (GPs), and optometrists.

Eye checks are an important part of broader preventive health efforts like:

- health assessments for Aboriginal and Torres Strait Islander people
- chronic disease management.

When conducting eye checks, health care professionals conduct different types of eye screening. Eye checks usually include:

- taking the patient's case history
- screening for visual acuity (measuring refractive error i.e. distance/near vision)
- checking the structure of the eyes for abnormalities.

Depending on the patient's age and needs, and the training and resources available to the health care professional, eye checks may also include:

- screening for infant red reflex
- screening for cataract
- screening for diabetic retinopathy (DR) if patients have diabetes
- screening for trachoma (in children) and trichiasis (in adults) in parts of the country where active trachoma persists
- screening for trichiasis (in adults) if they grew up in a trachoma area but now live elsewhere
- treatment for minor eye injuries
- appropriate referral if further eye assessment and/or care is needed.

Linked and coordinated eye care services are needed to help patients complete the eye care journey from:

the primary health care professional working in a community-based health centre

to the optometrist working in a private practice or providing visiting services

to the ophthalmologist providing visiting services, conducting surgical blitzes or working in a hospital.

healthinfonet.ecu.edu.au/eye-health

For more information see our longer factsheet

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The Fred Hollows Foundation

Artwork:
Life before the drought
by **Julie Weekes**

Australian Indigenous HealthInfoNet

Eye screening and care

navigating the treatment pathway

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It's important that Aboriginal and Torres Strait Islander children and adults are supported to get regular eye checks and navigate the treatment pathway.

Eye screening and care: what's it all about?

Eye screening is a quick way to detect eye problems and can be conducted by a range of trained primary health care (PHC) professionals, including: Aboriginal and Torres Strait Islander Health Workers and Practitioners, eye health workers (EHWs), regional eye health coordinators (REHCs), nurses and general practitioners (GPs).

Other PHC professionals can also play an important role in encouraging patients to get eye checks, including: health promotion officers, diabetes educators, and chronic disease care coordinators.

When eye checks indicate that patients have reduced vision, diabetes and/or complex eye conditions, PHC professionals refer them to an optometrist or an eye specialist (ophthalmologist) if a more comprehensive eye exam and treatment may be needed. Optometrists can correct vision problems with glasses or contact lenses, while specialist eye doctors (ophthalmologists) can also treat eye diseases with medication and/or surgery.

Eye care often involves different health professionals, seen at different times, in different locations. However, in remote areas and within some Aboriginal and Torres Strait Islander Community Controlled Health Services, PHC professionals and visiting optometry and/or ophthalmology teams work together to provide eye care in the health centre, or in a mobile vision van (a specialist treatment centre on wheels).

Artwork:
Life before the drought
by **Julie Weekes**

Meet the eye health professionals!

Eye health workers (EHWs): are health workers (including Aboriginal and Torres Strait Islander Health Workers and Practitioners) who have had some eye care training. They work with regional eye health coordinators, perform eye checks and some eye care, and make referrals if further eye assessment is needed. Not all regions of Australia have EHWs.

Regional eye health coordinators (REHCs): have different roles in different parts of Australia, but they focus on coordinating eye care services across their region to increase access to improved eye care. Some also have clinical roles associated with eye checks and care. Not all regions of Australia have REHCs.

Optometrists: can screen for eye disease and vision disorders, prescribe glasses or contact lenses to correct vision and refer to an ophthalmologist if needed. Please note that optometrists are not medical doctors.

Ophthalmologists (eye doctors): are medical doctors who specialise in eye care. They can screen and diagnose and treat eye problems, prescribe medications and perform surgery.

Making referrals for further eye assessment and care

PHC professionals make different referrals according to the type and urgency of the eye condition, but it is usually more efficient and appropriate for referrals to go through an optometrist. Referral to an ophthalmologist is usually only necessary when specialist treatment for an eye condition is needed.

Seeing an optometrist doesn't need an official referral, but PHC professionals can write a referral letter for their clients if optometric care is needed. Only optometrists and GPs can refer patients to an ophthalmologist.

After treatment by an ophthalmologist, PHC professionals should receive a report providing a complete history of the patient's eye care. This way a recall can be sent to the patient when follow-up eye screening and care is needed.

PHC professionals can play a key role in supporting their patients to complete treatment. It is important that PHC professionals follow-up with their patients along the eye care journey, and that eye health professionals report back to the health centre about the eye care provided.

What eye screening is done during an eye check?

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- screening for trichiasis (in adults) if they grew up in a trachoma area but now live elsewhere
- treatment for minor eye injuries
- appropriate referral if further eye assessment and/or care is needed.

Helping patients along the treatment pathway

Early detection, prompt referral, and appropriate treatment can prevent or reduce the impact of many eye problems, but the treatment pathway can be confusing, especially when it involves different health professionals, seen at different times, in different locations—and it is common for patients to drop out along the way.

Linked and coordinated eye care services are needed to help patients complete the eye care journey from:

the primary health care professional working in a community-based health centre

to the optometrist working in a private practice or providing visiting services

to the ophthalmologist providing visiting services, conducting surgical blitzes or working in a hospital.

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Sources

- Remote Area Health Corps, Brien Holden Vision Institute (n.d.) *Primary eye care checks* (eLearning module). Canberra: Remote Area Health Corps
- Brien Holden Vision Institute Academy (n.d.) *Eye and vision care toolkit*. Sydney: Brien Holden Vision Institute

More information

Online education

- Diabetic retinopathy grading course (Indigenous Eye Health and Centre for Eye Research Australia)
- eLearning modules (Remote Area Health Corps):
  - Primary eye care checks
  - Eye health and diabetes
  - Trachoma
- Eye and vision care toolkit (Brien Holden Vision)
- Retinal camera training for primary health care workers (Brien Holden Vision Institute)

Guidelines

- Guidelines for the management of diabetic retinopathy (National Health and Medical Research Council)
- Trachoma: CDNA national guidelines for the public health management of trachoma (Communicable Disease Network Australia)

Education and other resources

- Check Today, See Tomorrow: resource package (Indigenous Eye Health)
  - MBS item 715/12325 eye check card
- Diabetic eye screening: education resource for Aboriginal Health Workers (Lions Outback Vision)
- Outback Vision diabetic retinopathy: video (Lions Outback Vision)
- Provision of Eye Health Equipment and Training: project information (Brien Holden Vision Institute)

Manuals and guides

- CARPA standard treatment manual: a clinic manual for primary health care practitioners in remote and Indigenous health services in central and northern Australia: eye assessment (Central Australian Rural Practitioners Association)
- Chronic conditions manual: prevention and management of chronic conditions in Australia: Child and adult health checks (eyes and vision) (Rural and Remote Clinical Support Unit, Torres and Cape Hospital and Health Service)
- Clinical procedures manual for remote and rural practice: supporting clinical practice in the bush: checking near and distance vision (CRANAplus)
- National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people: eye health (National Aboriginal Community Controlled Health Organisation, Royal Australian College of General Practitioners)
  - Visual acuity
  - Trachoma and trichiasis

This factsheet has been developed by the Australian Indigenous Heath*InfoNet* and The Fred Hollows Foundation. This and other multimedia resources are available on the Health*InfoNet*'s Eye Health webpage: healthinfonet.ecu.edu.au/eye-health.

Special thanks to Dr Kristopher Rallah-Baker and Dr Madeleine Adams for their advice and input in the development of this factsheet.

Optometry AUSTRALIA

GP FACTSHEET

Do you know all the things that an optometrist can do?

As primary healthcare professionals, registered optometrists must have completed an approved university degree to be able to practice. All entry-level optometrists are now also able to prescribe topical medicines for the clinical management of acute and chronic eye conditions and ocular disease. Many optometrists have also undertaken postgraduate qualifications to obtain this endorsement, with approximately half of the optometry workforce now therapeutically endorsed. Optometrists are registered with the Australian Health Practitioner Regulation Agency.

SERVICES

Optometrists are qualified and equipped to provide a comprehensive range of primary eye care services.

- Refractive testing and comprehensive vision examinations
- Prescription of glasses or contact lenses
- Assessment, management and referrals of ocular emergencies
- Assessment and treatment of vision problems in children
- Co-management and primary care monitoring of patients with ongoing eye conditions
- Primary eye care for management of patients with diabetes, including dilated fundus examination
- Visual acuity testing, slit lamp examination, visual fields testing
- Removal of embedded corneal foreign bodies
- Assessment and reporting for fitness to drive; credentialed optometrists are also able to undertake examinations for aviation licensing on behalf of CASA.

WHO DO OPTOMETRISTS WORK WITH?

Optometrists work with a wide variety of health practitioners and medical specialists. Patients with a referral from an optometrist are able to obtain Medicare rebates for ophthalmology services. Optometrists also communicate with general medical practitioners, and a range of health care workers including diabetologists and endocrinologists, paediatricians, neurologists, Aboriginal and Torres Strait Islander health workers, education psychologists and diabetes educators.

SCHEDULED MEDICINES

Endorsed optometrists use topical preparations of:

- antibiotics;
- anti-inflammatories;
- antivirals;
- glaucoma treatments;
- anti-allergy medications, and
- cycloplegics.

Therapeutically-endorsed optometrists are qualified and equipped to:

- examine, treat or refer patients with ocular disease, superficial infection and anterior eye disease
- triage and treat or facilitate management of ‘red eye’
- triage and manage ocular emergencies and embedded corneal foreign bodies
- provide primary care and prescription treatment for conditions such as dry eye and allergy
- assess/monitor and treat glaucoma in conjunction with ophthalmologists
- provide after-care for cataract and refractive surgery
- assess and treat infections or complications arising from contact lens use.

SPECIFIC PRACTITIONER EXPERIENCE

There are optometrists available with particular practice experience in:

- children's vision
- contact lenses
- conditions such as ocular allergy and dry eye
- sports vision
- low vision
- eye health assessments and care in Indigenous community settings.

OPTOMETRY AND MEDICARE

A Medicare rebate is available for most optometry services. Bulk-billing is subject to individual practice policies. Patients are entitled to rebates for comprehensive eye examinations every three years (under 65) or annually (65 and over). There are also rebates for:

- dilated fundus examination in diabetic patients
- patients with new symptoms or signs of eye disease, or progressive changes in existing eye problems
- some contact lens prescribing
- visual fields in patients with suspicious symptoms
- corneal foreign body removal
- patient end support telehealth with ophthalmologists in rural/remote settings.

Services not covered by Medicare may attract a fee.

GLASSES AND CONTACT LENSES

Medicare does not pay for glasses or contact lenses. The Department of Veterans Affairs pays for glasses each two years for eligible patients. An optometrist can advise on state-based subsidy programs for low income earners and Indigenous people.

EQUIPMENT

Ask your community optometrist about the range of equipment and technologies they have available to get a comprehensive view of a patient's eye health.

Slit lamp	A biomicroscope for examining the anterior eye under high magnification
Phoropter/ refractor head	Used to measure refractive error and best corrected visual acuity
Direct ophthalmoscope	Used to view the internal components of the eye; an essential for checking for changes and monitoring for cataract, retinal changes, and eye diseases.
Binocular indirect ophthalmoscope	Provides a 3D view of the posterior eye
Retinoscope	Used to measure refractive error and accommodation
Tonometer	A tonometer measures intraocular pressures (IOPs)
Keratometer	For measuring the shape of the cornea; an important piece of equipment for contact lens practitioners.
Fundus (retinal) camera	The retinal camera is used to take photos of the internal posterior eye, showing the retina, optic disc, arteries and veins. Retinal photos provide an important baseline and ongoing patient record for many conditions.
Visual fields analyser	Computerised visual fields testing (perimetry) is used in the assessment and management of glaucoma, as well as stroke or other neurological conditions affecting vision.
Gonioscope	This lens with prisms enables the optometrist to get a more complex and complete view of the inside of the eye, and the angle of the anterior chamber. This is an important tool in comprehensive glaucoma management.
Optical Coherence Tomographer (OCT)	Many optometrists use OCT to digitally image the optic nerve and retina. Optometrists may also refer patients for this service.
Corneal topographer	This accurately maps the cornea, and is frequently used in contact lens management or patients with keratonconus.

FIND AN OPTOMETRIST

www.optometry.org.au/

- Find optometrists in your local area, use drop-down menu to identify therapeutically endorsed optometrists.
- Contact your Optometry Australia state body for information or referral for services including low vision services, subsidised spectacles schemes, or an optometrist with a particular area of clinical interest and experience.

PATIENT INFORMATION

www.goodvisionforlife.com.au