Vision 2020 Australia

2nd National Eye Health Survey

Progress report

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Principal Changes to the 2nd NEHS last 6 mos

- Starting date now delayed
  - Survey contract issued in July 2020
  - Original planned commencement date was Feb, 2021
  - Due to ongoing issues with COVID-19, start will now be delayed until adequate levels of vaccination across Australia
  - Indigenous population is behind non-Indigenous population for various reasons including access to vaccine and hesitancy
  - We will monitor Australia vaccination rates to determine optimum time, to achieve as high a response as possible
  - Likely start Feb, 2022
  - Commonwealth Dept Health has accepted this

Principal Changes to the 2nd NEHS last 6 mos

- Addition of a Hearing Study
  - The other major sensory loss is hearing
  - Very few data exist on hearing function in older Indigenous populations, while many surveys exist of young persons
  - Recent data on hearing in older non-Indigenous populations is also scant – last was Blue Mountains Hearing Study
  - Major missing area – opportunity to “kill 2 birds with 1 stone”
  - We proposed adding a hearing component to Commonwealth Dept Health; this has been accepted; also by V2020 as long as it follows eye study and does not use its resources
  - Likely to be on 2nd day for many persons, eye first, then hearing
  - Funded by Maquarie University and Cochlear

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The new study will be called:

Australian Eye and Ear Health Survey

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Investigators in Australian Eye and Ear Health Survey

- Lead investigator: Professor Paul Mitchell (WIMR, USYD)
- Co-investigators:
  - A/Prof Gerald Liew (WIMR, USYD)
  - Prof Bamini Gopinath (MQU)
  - Prof Lisa Keay (UNSW)
  - A/Prof Gian Luca Di Tanna (TGI)
  - Ms Colina Waddell (BHF)
  - Mr Tim Fricke (BHF)
- Study Co-Ordinator: Ms Shanelle Sorbello (WIMR)

Aims of the AEEHS

- To obtain comparable prevalence data to that collected in NEHS1
- To build on the seminal NEHS1 to determine the current burden of eye disease (and hearing loss) in Australia and establish a time series for the purposes of trend analysis
- To address key issues raised in NEHS1

1. Representative of the population via (hopefully) higher examination rates, particularly in major metropolitan areas, where most Australians live;
2. Improved eye disease detection, using pupil dilation plus new non-invasive, objective imaging technologies (OCT anterior segment, macula, optic disc, ultra-wide field retinal photography plus OCT-angiography), in order to fully image the posterior and near peripheral retina; and measure hearing
3. Additional data collection, informing links between vision loss/ hearing loss with critical health/ social outcomes; optional data linkage consent

Equipment & Protocol

- Zeiss OCT Cirrus 6000 with angiography module

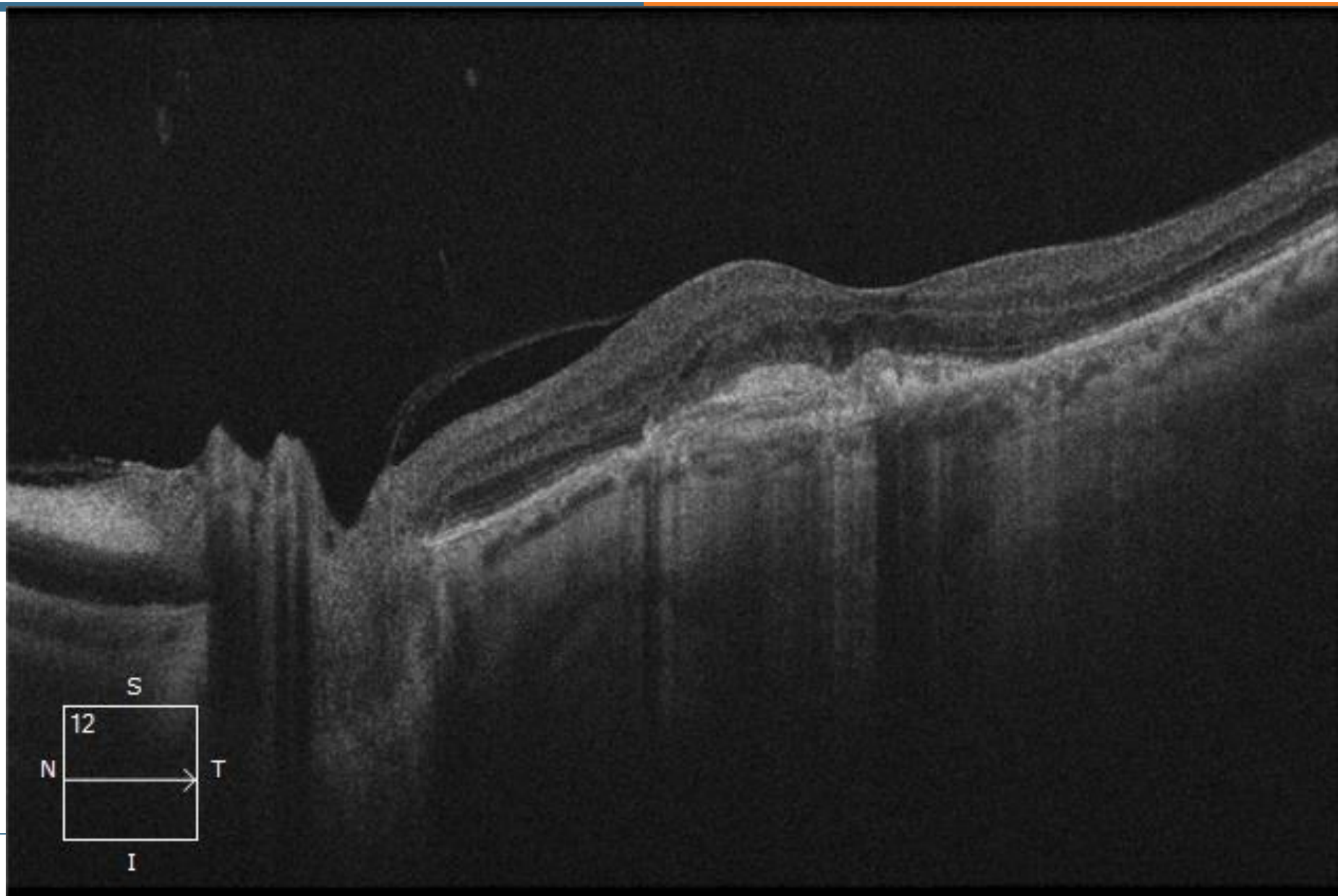


- Zeiss Clarus 700 Ultrawide field camera



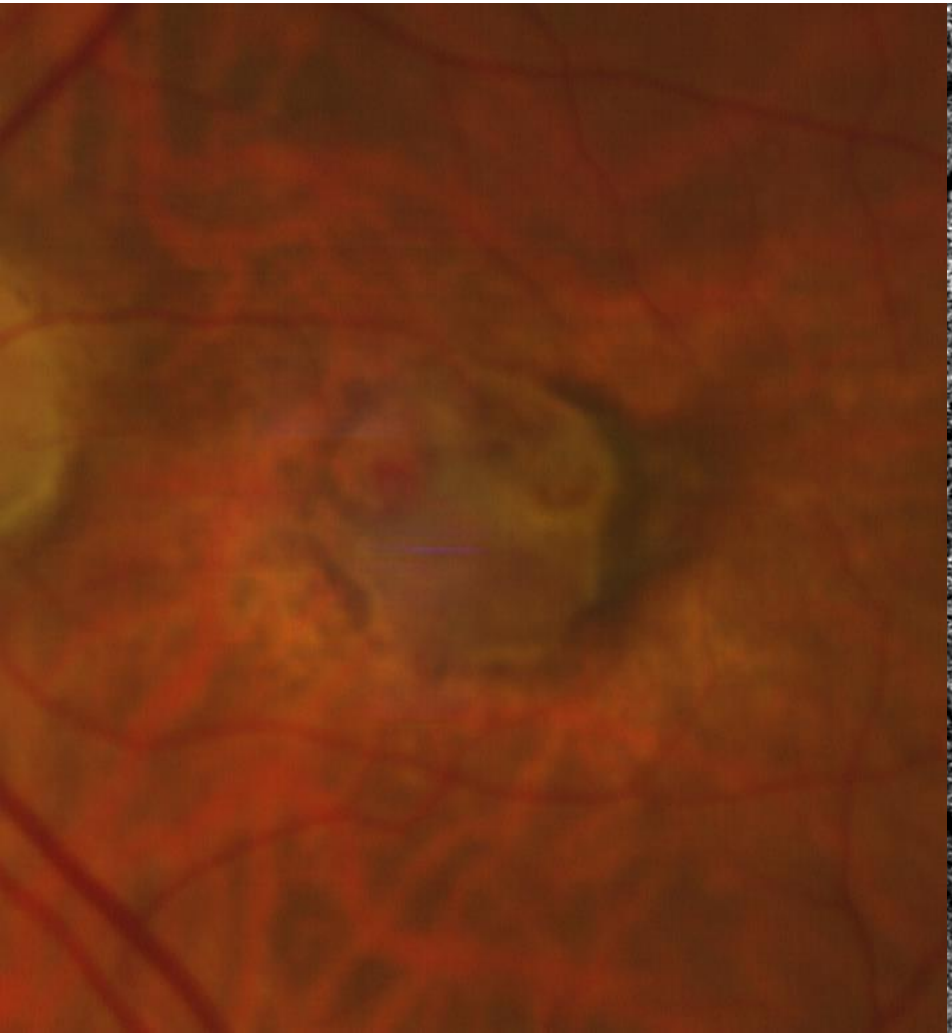
CIRRUS OCT 6000

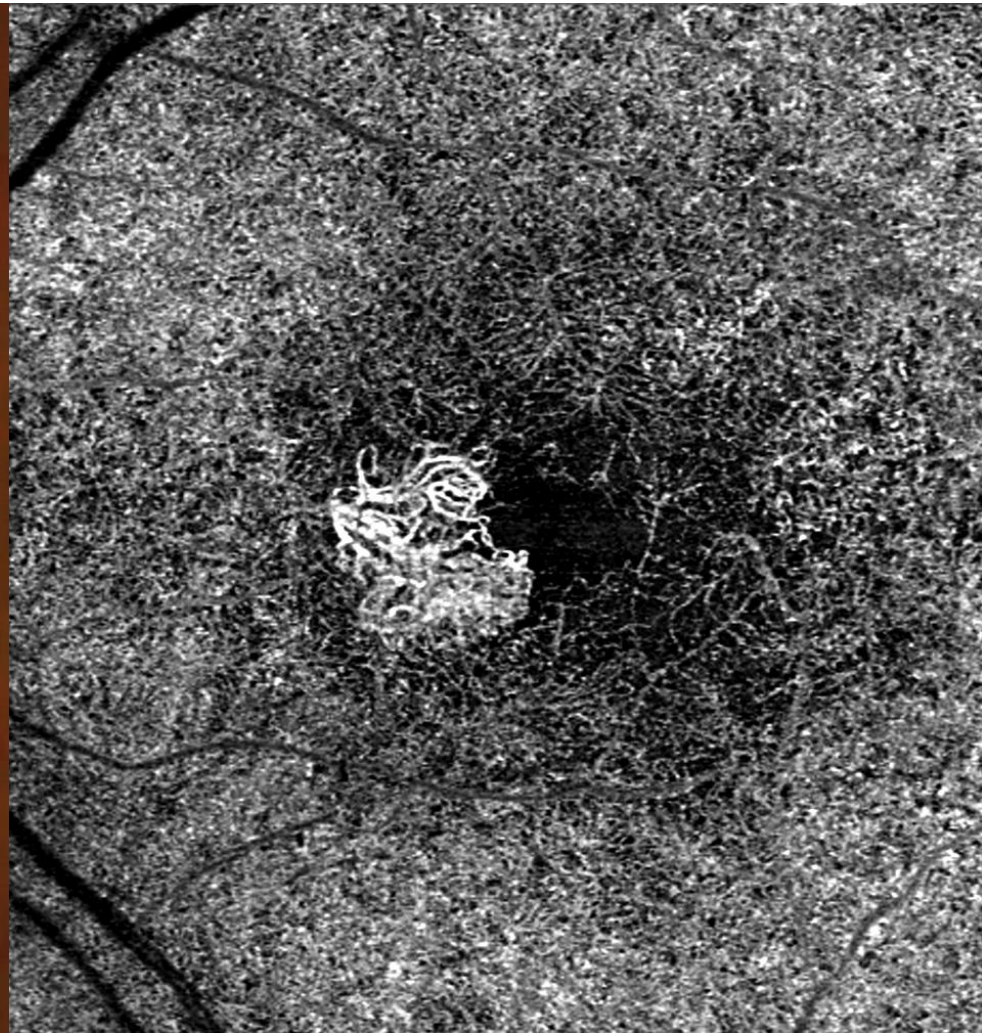
Macular cube, OCT HD 21 line
Optic disc



CIRRUS 6000 OCT angiography

3 mm, 6 mm, 12 mm, montage





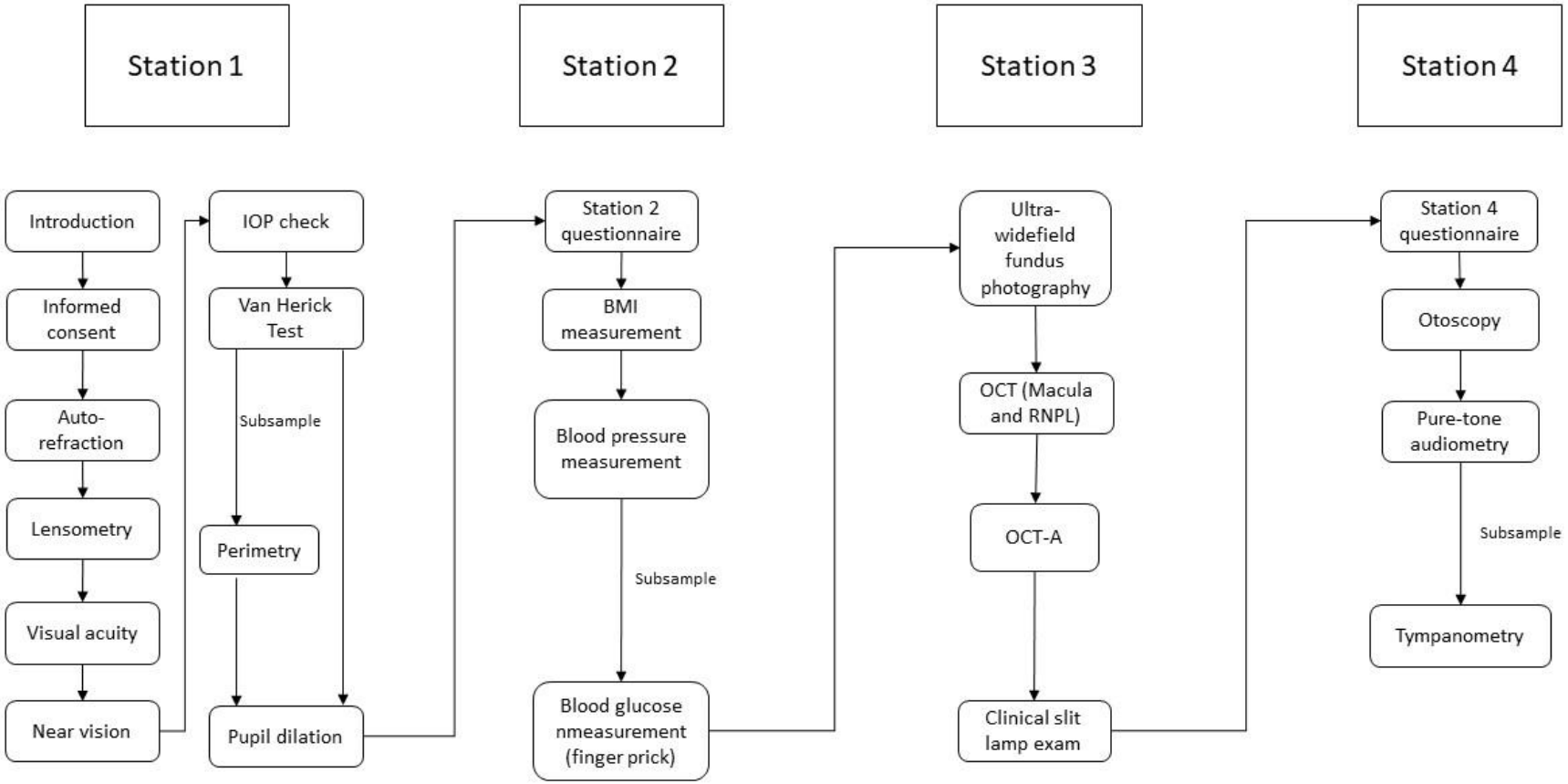
CLARUS 700



CLARUS 700



Examination Stations



Methodology of the AEEHS

- Selection of SA2's to represent State/ Australian population to enable recruitment of 3,250 N-I and 1,750 I
- Selection of number of SA1's within each SA2, in order to provide these targets – some SA2's will include more SA1's
- Community publicity to selected SA2's including to all eye care and general practitioners
- Door-to-door census of selected SA1's: Census 2016 maps
- Identification of target population samples at each site
- Invitation to attend examination at local centre
- Persistent efforts to maximise exams of target individuals
- Detailed eye and ear/hearing exam with reports/ images/ recommendations sent to participants/ eye care/ hearing health care/ general practitioners
- Stepwise consent for exam, dilation, data linkage

Site Selection

- Sampling strategy uses Census 2016 and geographic data to select sites
- General Australian population distribution according to Census 2016:
  - 66% SA2 major cities
  - 21% inner regional
  - 10% outer regional
  - 2% remote
  - 1% very remote
- Australia's Indigenous population:
  - 35% major cities
  - 22% inner regional
  - 22% outer regional
  - 7.7% remote
  - 14% very remote

Proportional allocation of sites if survey matched Australian population:

19 Major City
7 Inner Regional
3 Outer Regional
1 Remote/VR

State	Remoteness	Propn. of Aust. Pop'n	Proport. allocation to 30 sites	Nominated number sites
NSW/ACT	Major City	23.77%	7.1	7
NSW/ACT	Inner Regional	6.81%	2.0	2
NSW/ACT	Outer Regional	2.61%	0.8	1
NSW/ACT	Remote	0.27%	0.1	-
NSW/ACT	Very Remote	0.06%	0.0	-
VIC	Major City	18.60%	5.6	5
VIC	Inner Regional	5.80%	1.7	2
VIC	Outer Regional	1.28%	0.4	-
VIC	Remote	0.08%	0.0	-
VIC	Very Remote	-	-	-
QLD	Major City	11.97%	3.6	4
QLD	Inner Regional	4.48%	1.3	1
QLD	Outer Regional	2.94%	0.9	1
QLD	Remote	0.77%	0.2	-
QLD	Very Remote	0.55%	0.2	-
SA	Major City	4.64%	1.4	1
SA	Inner Regional	1.03%	0.3	1
SA	Outer Regional	0.82%	0.2	
SA	Remote	0.23%	0.1	
SA	Very Remote	0.06%	0.0	
WA	Major City	7.35%	2.2	2
WA	Inner Regional	1.23%	0.4	
WA	Outer Regional	0.80%	0.2	1
WA	Remote	0.45%	0.1	
WA	Very Remote	0.31%	0.1	
NT	Major City	-	-	
NT	Inner Regional	-	-	
NT	Outer Regional	0.52%	0.2	
NT	Remote	0.20%	0.1	1
NT	Very Remote	0.20%	0.1	
TAS	Major City			
TAS	Inner Regional	1.37%	0.4	1
TAS	Outer Regional	0.71%	0.2	
TAS	Remote	0.08%	0.0	
TAS	Very Remote	0.01%	0.0	
		100%	**30**	**30**

16 Major City; 8 Inner Regional; 2 Outer Regional; 4 Remote/ Very Remote

State	Remoteness	SA2 name	Prop. >50 years	Prop. >80 years	Prop. Indigenous
NSW/ACT	Major City	Toongabbie/ Constitution Hill	33.4%	5.4%	1.3%
NSW/ACT	Major City	Bradbury-Wedderburn	28.6%	2.3%	6.0%
NSW/ACT	Major City	Malabar - La Perouse - Chifley	36.0%	4.8%	4.4%
NSW/ACT	Major City	Raymond Terrace	36.1%	4.1%	8.1%
NSW/ACT	Major City	Castle Hill (East)	48.2%	16.9%	0.2%
NSW/ACT	Major City	Erina-Green Point	45.5%	9.1%	1.9%
NSW/ACT	Major City	Corrimal	37.9%	6.0%	3.8%
NSW/ACT	Inner Regional	Blue mountains/ Wentworth Falls	48.2%	6.1%	1.9%
NSW/ACT	Inner Regional	Forster-Tuncurry	53.6%	5.1%	4.6%
NSW/ACT	Outer Regional	Forbes	40.9%	6.2%	10.4%
VIC	Major City	Doncaster	37.4%	7.%	0.2%
VIC	Major City	Keilor (East)	39.5%	7.2%	0.2%
VIC	Major City	Geelong	37.9%	4.5%	0.8%
VIC	Major City	Mornington	46.1%	8.2%	0.6%
VIC	Inner Regional	Ballarat	40.4%	5.3%	0.6%
VIC	Inner Regional	Wangaratta	41.2%	7.5%	1.5%
VIC	Inner Regional	Stawell	47.1%	6.0%	1.8%
QLD	Major City	Nambour	36.6%	5.3%	3.3%
QLD	Major City	Riverview	33.8%	5.7%	9.2%
QLD	Major City	Ipswich	33.9%	4.0%	5.4%
QLD	Inner Regional	Kingaroy Region – North	43.5%	4.8%	20.5%
QLD	Remote	Palm Island	19.6%	0.5%	86.0%
QLD	Very Remote	Mount Isa Region	31.3%	1.3%	24.1%
SA	Major City	North Haven	42.7%	5.1%	2.8%
SA	Inner Regional	Murray Bridge	37.8%	5.5%	4.6%
WA	Major City	Mandurah	50.7%	8.4%	2.8%
WA	Outer Regional	Geraldton	43.9%	7.2%	10.8%
WA	Remote	Broome	26.2%	0.9%	20.9%
NT	Very Remote	Petermann-Simpson	20.9%	0.8%	39.1%
TAS	Inner Regional	Devonport	41.9%	7.0%	5.9%

AEHS: Alternative Sites

- NSW
  - Major city: Woy Woy
- VIC
  - Major city: Rosebud-McCrae
- QLD
  - Outer Regional: Magnetic Island
- SA
  - Major City: Christie’s Beach
- WA
  - Inner Regional: Chidlow
  - Major City: Pinjarra


Timor Sea
NORTHERN TERRITORY
Coral Sea
QUEENSLAND
Australia
WESTERN AUSTRALIA
SOUTH AUSTRALIA
NEW SO WALES
ACT
Great Australian Bight
Melbourne
TASMANIA

Aboriginal and Torres Strait Islander Engagement and Representation

- Working closely with Jess Styles (NACCHO)
- Co-developed position descriptions for two Aboriginal and Torres Strait Islander Project Officer positions, for employment through BHF (Colina Wadell)
- Indigenous Project Officer responsibilities include
  - formation of an Expert Advisory Committee (EAC)
  - working with NACCHO and EAC to ensure survey documents are culturally safe and appropriate
  - preparation of AIATSIS and other ethics applications

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AEEHS On-site Questionnaires

- Inclusion of Station 4 questionnaire for the ear health component
  - Hearing Handicap Inventory for Elderly-Shortened (HHIE-S)
  - International Outcome Inventory-Hearing Devices (IOI-HD)
- Station questionnaires revised to incorporate feedback from V2020A members and the Department of Health
- Further revisions pending formation and review by EAC
- Also, further changes prompted by new questions in Census 2021; need to align key questions in our survey with the exact Cansus q's
- Particularly need specific questions reviewed by our indigenous partners for cultural sensitivity and appropriateness

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Take-home Questionnaire

…in booklet, or online

- National Eye Institute Vision Function Questionnaire (NEI-VFQ)
- Ocular Surface Disease Index (OSDI)
- Health Outcomes: EQ-5D-5L, EQ-5D Visual Analogue Scale
- Fatigue Severity Scale
- Incidental and Planned Exercise Questionnaire (IPEQ)
- (Food Frequency Questionnaire)
- Hearing and ear health questions – history of ear infections, exposure to noise, ototoxic chemicals

…again, a need to align some questions with those in census 21

possible

- (Activities of Daily Living)
- (Depression scale (e.g. CESD-10))

Australian Eye and Ear Health Survey
Preferences and Constraints

- COVID-19 – because of the current delta COVID-19 infections across multiple states, we have decided to delay the Survey further, until a relatively high proportion of both the Indigenous and non-Indigenous target populations (40+ and 50+) are fully vaccinated. Currently, Ind. persons have lower vaccination rates than N-Ind.
- in order to maximise response, survey is therefore unlikely to commence until Feb, 2022
  - Consultation with Chief Medical Officer in each State
  - Preparation by consultation with each state, particularly Indigenous groups
- Preference to sample reasonable number of city-based Indigenous persons
- Greater (over-) sampling of older age groups to match Australia and key pathology
- Detailed report to participants, indicating any treatment needed: “cannot do a survey without service”.
- We will attempt to arrange FU for eye diseases/ hearing loss found

Australian Eye and Ear Health Survey
Progress to Date and Plans

- Steering Committee Members - applicants
- Draft examination protocol, questionnaires, consent form, participant information statement, flyer developed
- Ethical Approval obtained from University of Sydney Human Ethics Committee; April, 2021, subject to Indigenous approvals
- Current draft of all documents (questionnaires, consent forms, protocl) sent today to V2020 members
- Advisory Committee membership being finalised
- Need to finalise site selection (then select SA1s within SA2s); communicate to practitioners at each site
- BHF will employ Indigenous Project Co-Ordinator who will consult with primary Indigenous organisations for endorsement and ethics approval
- Recruit staff, students
- Purchase equipment – currently negotiated with Zeiss, others

Australian Eye and Ear Health Survey
Conclusions

- Examinations will be longer (around 2 hours vs 0.5 to 1)
- Stay longer at each site (2-3 weeks vs 3-8 days)
- Survey will take 18-22 mos (12), likely delayed by 12 months
- More detailed LogMAR vision assessment
- More comprehensive questionnaire including risk factors and impacts, health outcomes; data linkage if consented
- Dilated exam, if consented
- Focus on more detailed ocular imaging, including OCT (macula/ optic nerve), OCTa, wide-field photography
- Threshold visual field testing (SITA 24-2 Faster)
- Added Ear Health component with audiometry
- Anthropometry, blood pressure, finger-prick blood glucose
- We welcome feedback from all V2020 partners