CARI GUIDELINES – WHAT ARE THEY, HOW ARE THEY DEVELOPED, AND WHAT DOES THIS MEAN FOR YOU??

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RSA CONFERENCE 2026
CHRISTCHURCH, NZ



Adelaide University

We respectfully acknowledge the Kaurna, Boandik, and Barngarla First Nations Peoples and their Elders past and present, who are the Traditional Owners of the lands that are home to our campuses across Adelaide and South Australia.

What are the CARI Guidelines?

CARI Guidelines is the Australian and New Zealand guidelines for caring with Australians with renal impairment



They have been operating since 1999

- Team at Centre for Kidney Research, Sydney School of Public Health, The University of Sydney



Guidelines for Australia and New Zealand

- Engagement with health professionals and partnered with organisations
- Increasing involvement with people with lived experience of disease



30 Guidelines (over 130 sub-topics)

- Chronic kidney disease
- Dialysis
- Transplantation
- Acute kidney injury

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Partners

Kidney Health Australia

Collaborators

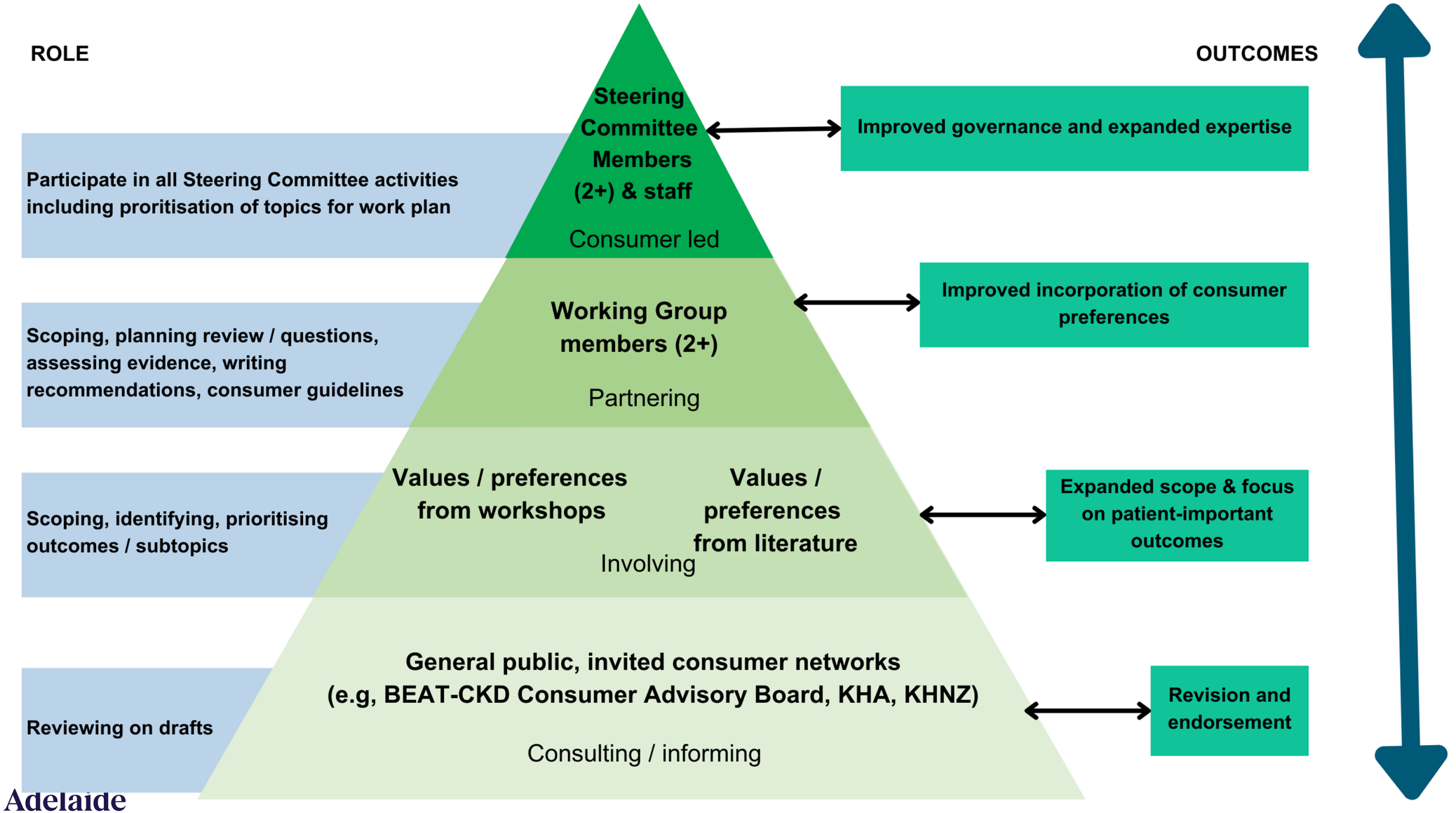
AKction
Aboriginal kidney care together improving outcomes now

Funding

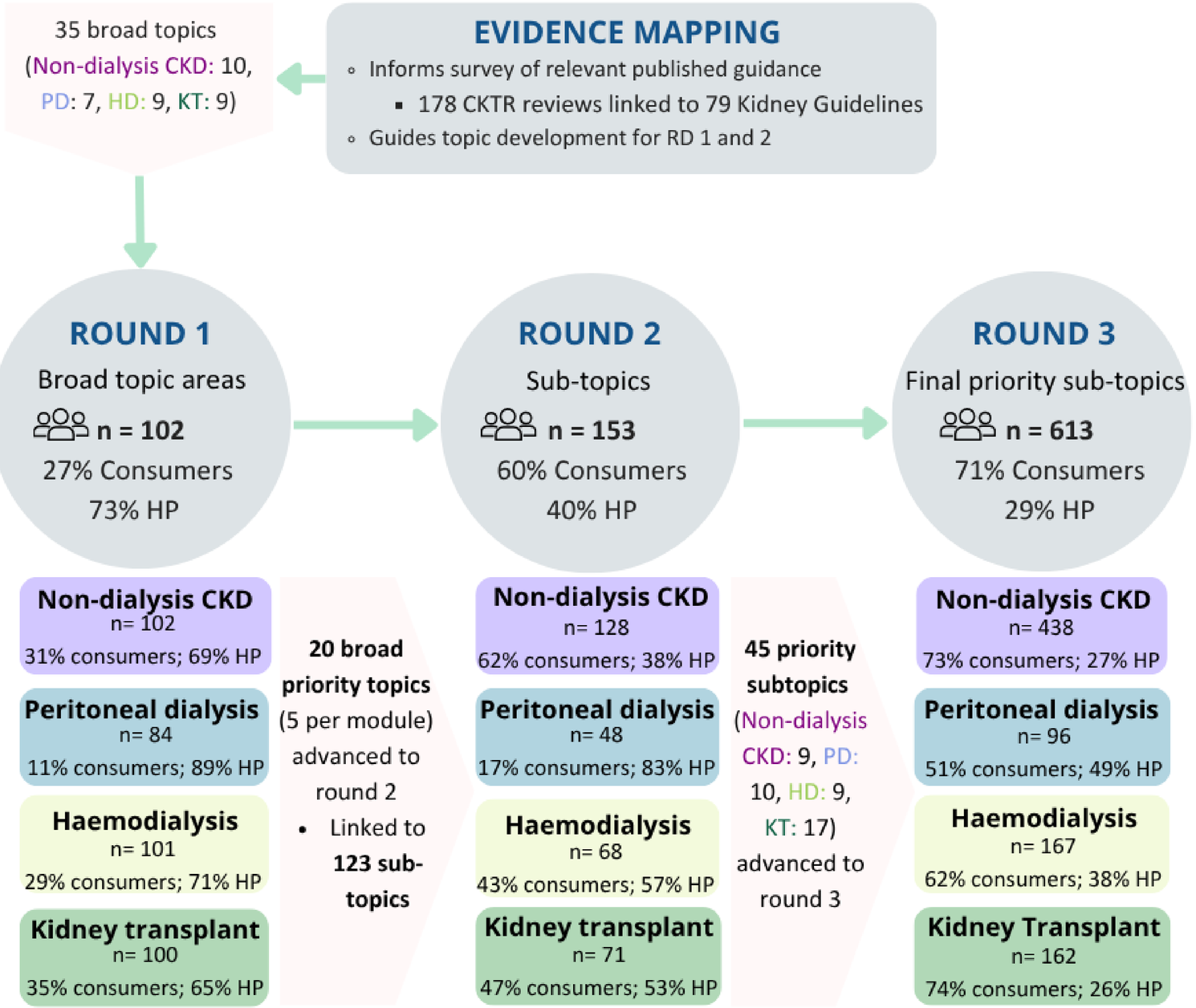
Australian Government
National Health and Medical Research Council
NHMRC

- Kidney Health Australia
- National Health Medical Research Council (NHMRC) Emerging Leadership 1 Investigator Grant (APP1197337)
- NHMRC Program Grant – BEAT-CKD Grant (APP1092957)

Ensuring guideline development is consumer led and informed



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35 broad topics
(Non-dialysis CKD: 10,
PD: 7, HD: 9, KT: 9)
EVIDENCE MAPPING
Informs survey of relevant published guidance
178 CKTR reviews linked to 79 Kidney Guidelines
Guides topic development for RD 1 and 2
ROUND 1
Broad topic areas
n = 102
27% Consumers
73% HP
ROUND 2
Sub-topics
n = 153
60% Consumers
40% HP
ROUND 3
Final priority sub-topics
n = 613
71% Consumers
29% HP
Non-dialysis CKD
n= 102
31% consumers; 69% HP
Peritoneal dialysis
n= 84
11% consumers; 89% HP
Haemodialysis
n= 101
29% consumers; 71% HP
Kidney transplant
n= 100
35% consumers; 65% HP
20 broad priority topics
(5 per module)
advanced to round 2
Linked to 123 sub-topics
Non-dialysis CKD
n= 128
62% consumers; 38% HP
Peritoneal dialysis
n= 48
17% consumers; 83% HP
Haemodialysis
n= 68
43% consumers; 57% HP
Kidney transplant
n= 71
47% consumers; 53% HP
45 priority subtopics
(Non-dialysis CKD: 9, PD: 10, HD: 9, KT: 17)
advanced to round 3
Non-dialysis CKD
n= 438
73% consumers; 27% HP
Peritoneal dialysis
n= 96
51% consumers; 49% HP
Haemodialysis
n= 167
62% consumers; 38% HP
Kidney Transplant
n= 162
74% consumers; 26% HP

WHY CARI AND NOT KDIGO?

Adopting and adapting recommendations

- Significant differences in our healthcare systems – equity, costs
  - Relevant to our region
  - Unlikely to be addressed by others
  - High priority and well described topics

Commentaries on international guidelines

Adaptations of international guidelines

GD guidelines	Diabetes in CKD guidelines	Anaemia in CKD	IgAN
ADPKD guidelines	CKD guidelines		

So how do CARI do what they do?



100 researchers and writers
Training given
Expertise developed on how to critically appraise scientific evidence



CARI staff assist with systematic literature reviews and identifying empirical evidence and relevant research



A good example of this is the DOPPS study one and two (dialysis outcomes and practice patterns study)

1. 308 dialysis units from 7 countries
2. 320 dialysis units and 12,400 patients

DIALYSIS GUIDELINES

Biochemical and Haematological Targets

Dialysis Adequacy

Infection Control for Haemodialysis Units

Peritonitis Treatment and Prophylaxis

Vascular Access

Status

VASCULAR ACCESS	Status
Insertion of catheters	June 2012
Nursing care of central venous catheters	June 2012
Nursing care of arteriovenous fistula/arteriovenous graft	June 2012
Pre-operative examination of the vessels – diagnostic evaluation prior to permanent access selection	June 2012
Preparation and placement of vascular access	June 2012
Prevention of dialysis catheter infection	June 2012
Selection of type of access	June 2012
Treatment of the thrombosed AVF/AVG: surgical vs radiological therapy	June 2012
Treatment of dialysis catheter infection	June 2012
Treatment of vascular steal syndrome	June 2012

BUT WHAT HAPPENS IF YOU COME ACROSS A *WICKED (OR DEADLY)* PROBLEM?

Culturally safe care for First Nations Australians

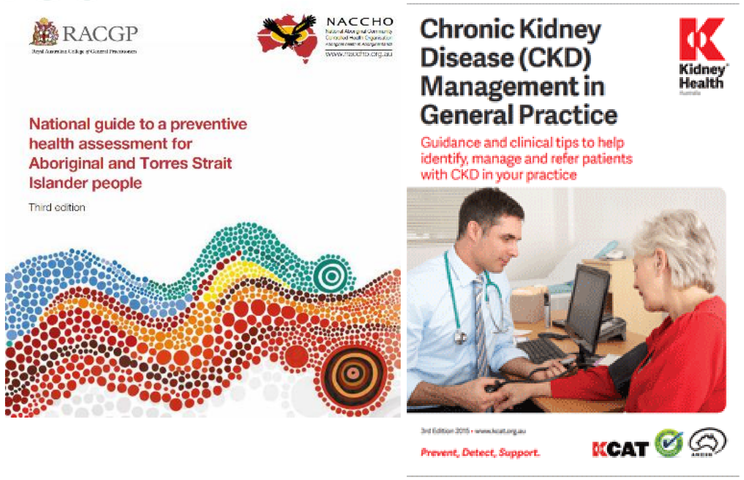


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Why did we need CKD First Nations Guidelines

- Limited change in outcomes overtime
- No dedicated CKD First Nations guidelines
- No CKD guidelines developed using:
  - Partnership with First Nations Peoples
  - Indigenous health research methods and knowledge







First Nations Peoples experiences higher burden of CKD

ANZDATA 2021

Overrepresented in all stages of CKD

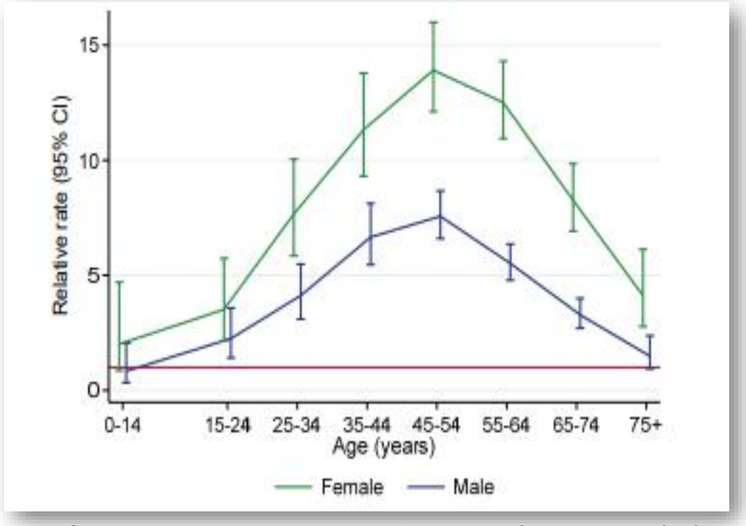
- Increased incidence & prevalence
- Increased progression of disease

Increased kidney failure – 6-8x higher

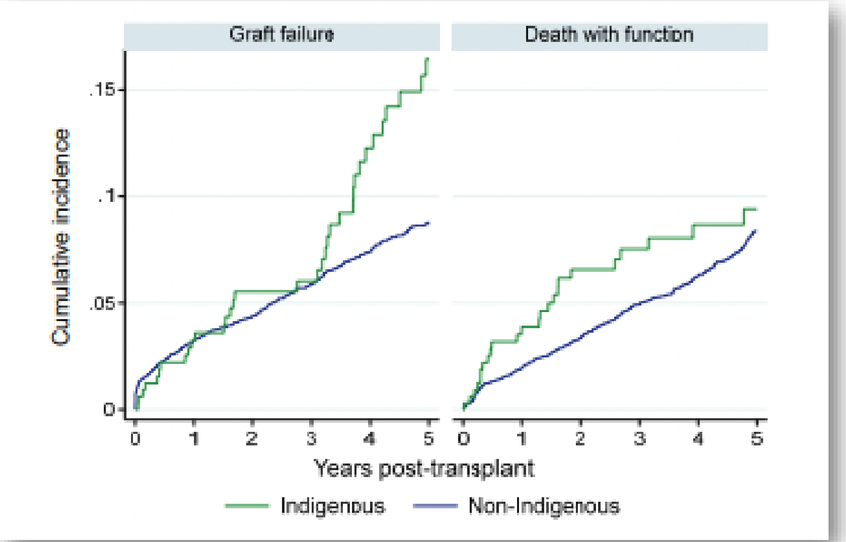
Poorer access to dialysis and transplantation

Poorer outcomes

Relative incidence rate of treated kidney failure by Indigenous patient. 2016 -2020



Transplant outcomes – primary deceased donor kidney-only transplants. 2011-2020

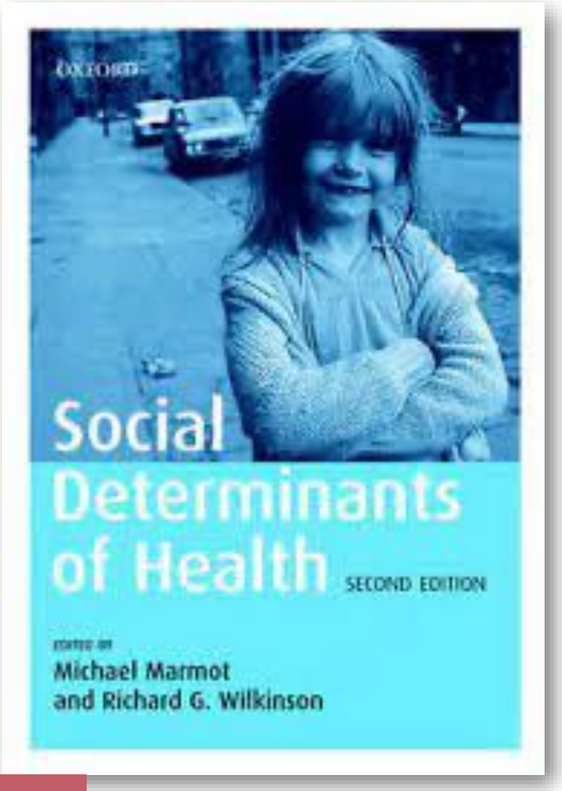


"Disparities between Indigenous and non-Indigenous patients with end-stage kidney disease in access to kidney transplantation are not explained by patient or disease related factors. Changes in policy and practice are needed to reduce these differences." Khanal et al. 2018

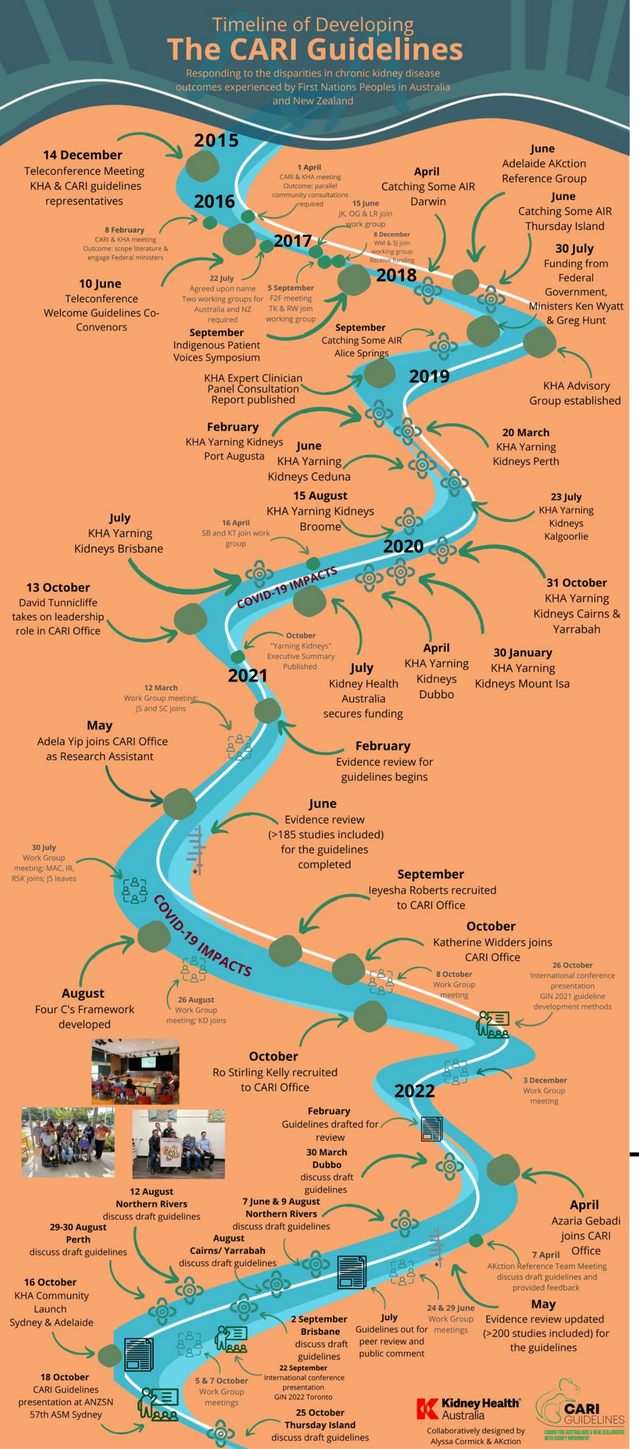
Social/ cultural/ political determinants of health

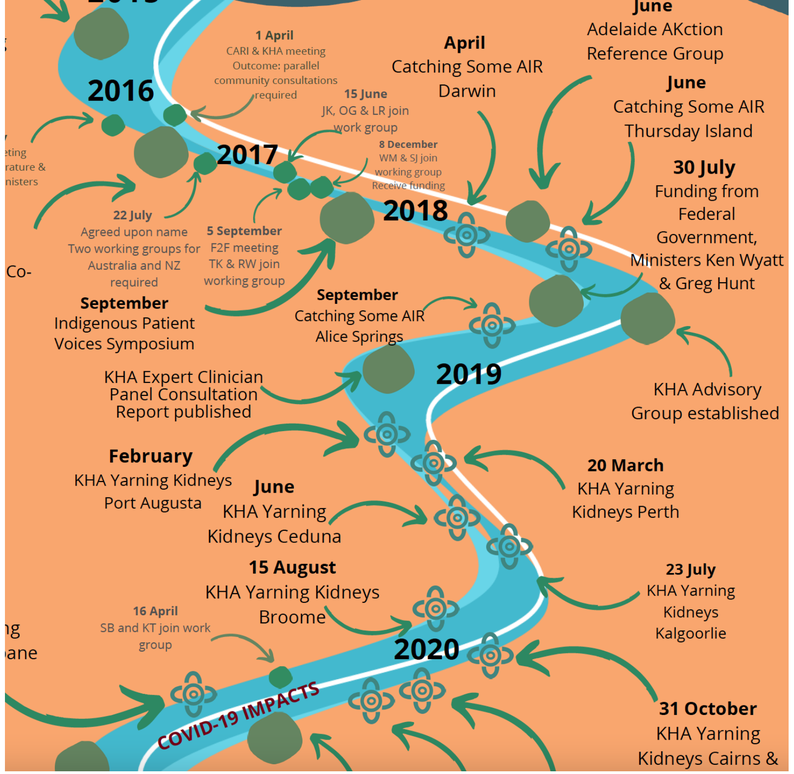
- Currently limited evidence for genetic associations with CKD in First Nations Australians

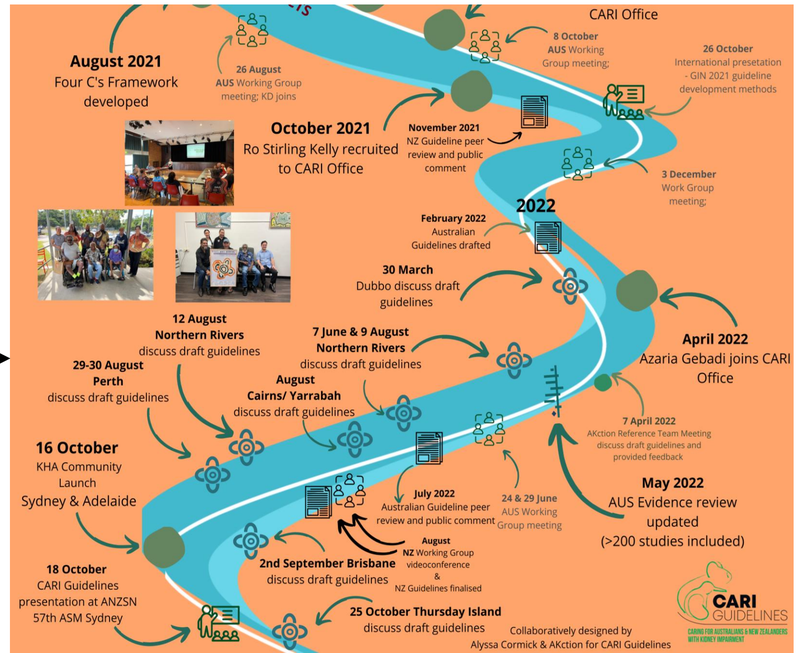
- Our circumstances impacts our health – many resulting from **ongoing colonisation**



It is the role of all individuals, health care providers, researchers, consumers, and the health system to recognise the impact of colonisation on health and re-evaluate their assumptions and beliefs to improve care for First Nations Peoples







- 4.5 years in development
- 16 targeted community consultation through partnerships

menzies school of health research
the Lowitja Institute
CATCHING SOME AIR
ASSERTING ABORIGINAL AND TORRES STRAIT ISLANDER INFORMATION RIGHTS IN RENAL DISEASE

Kidney Health Australia

Yarning Kidneys Consultations

AKction
Aboriginal kidney care together
improving outcomes now

Continuing community engagement and consumer involvement (COVID-19 impacts)

Issues related to determinants of health

"When we move from our land, we feel sad and depressed – Our spirit is taken away from our Country" (Perth, Western Australian)

"We don't know when it is best to get further information or a 'kidney health check', or even how to do this" (Port Augusta, South Australia)

"appropriate accommodation [is needed], the kitchen is downstairs and you buy food and label it but other people steal it". Catching taxis to town to buy food is expensive and very draining." (Cairns, Queensland)

"They don't understand how we think about health." (Dubbo, New South Wales)

Community consultation identified the issues

Issues in First Nations kidney health

Racism is evident and common

Increasing access to care on Country

Current transport and accommodation inadequate

Increasing family and community involvement

Increased First Nations Health Workforce required

Education, detection, and care needs to be led by community for community

Early detection and management of disease

- Issues beyond a clinical focus
- Guidelines **must address these issues**

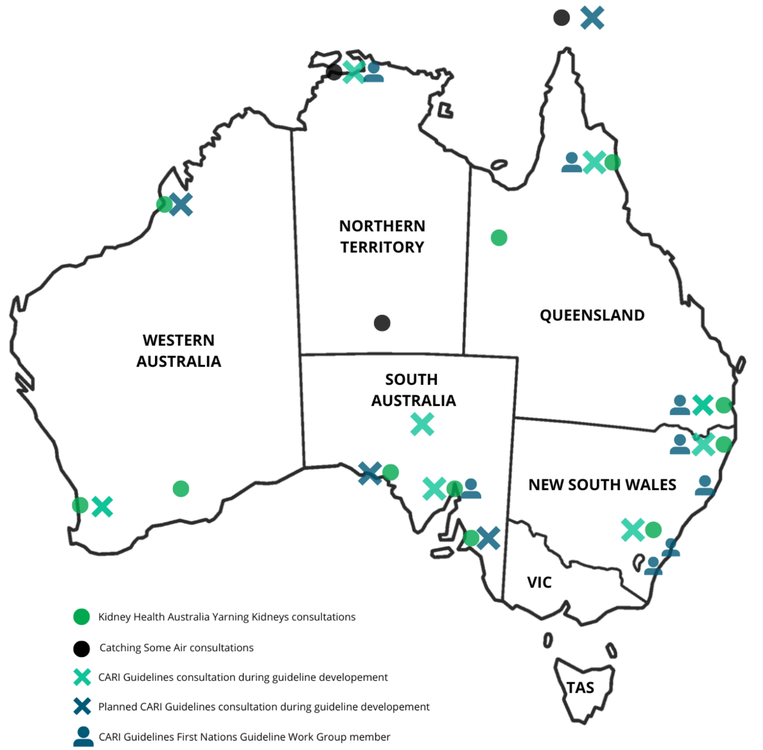
Continued engagement with communities

COVID-19 made continued engagement difficult

- Employed Aboriginal and Torres Strait Islander Peoples with lived experience of CKD
- Utilised existing Aboriginal Health research networks, professionals and business

- Adelaide, SA
- Brisbane, QLD
- Cairns and Yarrabah, QLD
- Coober Pedy, SA
- Darwin, NT
- Dubbo, NSW
- Perth, WA
- Port Augusta, SA
- Northern Rivers, NSW
- Thursday Island, QLD









From community consultation to evidence review

Scope & search

Evidence synthesis

- Identified 21 relevant PICO questions
- Searched MEDLINE, Embase & Aboriginal HealthInfoNet, Google Scholar
- All study types & supplementary reports
- **Search >8000 citations; Included – 200 studies**

- Data extraction & critical appraisal undertaken by two reviewers
- Mixed methods synthesis approach
- Risk of bias rated – according to study type &
- Reporting (CONSIDER) and conduct to First Nations Health Research Standards (CREATE)
- Australian guidelines - Certainty of the evidence - GRADE
- Summary of the findings tables developed


Huria et al. BMC Medical Research Methodology (2019) 19:173
https://doi.org/10.1186/s12874-019-0815-8

BMC Medical Research Methodology

RESEARCH ARTICLE Open Access

Consolidated criteria for strengthening reporting of health research involving indigenous peoples: the CONSIDER statement

Tania Huria[1*], Suetonia C. Palmer[2], Suzanne Pitama[1], Lutz Beckert[2], Cameron Lacey[1], Shaun Ewen[3] and Linda Tuhiwai Smith[4]


Harfield et al. BMC Medical Research Methodology (2020) 20:79
https://doi.org/10.1186/s12874-020-00959-3

BMC Medical Research Methodology

RESEARCH ARTICLE Open Access

Assessing the quality of health research from an Indigenous perspective: the Aboriginal and Torres Strait Islander quality appraisal tool

Stephen Harfield[1,2*], Odette Pearson[1], Kim Morey[1], Elaine Kite[1], Karla Canuto[1], Karen Glover[1,3,4], Judith Streak Gomersall[2,3], Drew Carter[2], Carol Davy[1], Edoardo Aromataris[5] and Annette Braunack-Mayer[1,2,6,7]

Adapted Evidence to Decision framework – Four C's

Domain	Description
 **Community voice**	• **Needs identified in community consultations** • **Any other feedback from community**
 Cultural safety considerations	• Other cultural safety issues not raised in the consultations • Cultural, historical and social context
 Clinical evidence	• Balance of benefits and harms • Certainty of the evidence
 Costs, capacity, equity and other resources	• Cost-effectiveness data if available • Costs implications to individual, health systems and organisations – including increasing capacity • Equity issues – rural and remote, socioeconomic status.

Guidelines advocate for improved health service delivery

1. Culturally safe and responsive care

- **Addressing institutional racism**
- **Removing race as a risk factor**
- Improved First Nations governance
- Improved cultural safety training
- Increased involvement of family and community
- **Increased recognition of social determinants of health**

2. Increased early detection of chronic kidney disease

- **Earlier screening**
- **Earlier referral to nephrologists**
- Increased community involvement in public awareness and education

3. Increased First Nations health work force

- Increased professional support for First Nations health workforce
- Increased training in CKD treatment and management
- Increased strategic commitment and retention of First Nations health workforce

4. Increasing care on Country

- Increased accommodation and transport services
- Increased community control of health services
- **Improved dialysis services in rural and remote locations**

Addressing institutional racism

a. We recommend that health services evaluate, monitor, and act upon the institutional racism within their system by addressing all domains identified in the "Matrix for Identifying, Measuring and Monitoring Institutional Racism within Public Hospitals and Health Services *(Strong recommendation).*

Evidence to decision domains	
Clinical evidence	• Application of institutional framework improved health service delivery (Cairns,
	• Forced dispossession and taking of children has resulted in mistrust of health systems
Cost, equity & resource implications	• Increased costs to services – likely at whole health systems level • Implemented by consultancy firms with experience

"Services have to understand cultural reasons for non-compliance are not because [a] patient doesn't want to go" (Perth, 2019)

"We need more Aboriginal health workers here at NWHHS that understand us and can help explain things in a different way and don't make us feel shame" (Mt Isa, 2020)

Removing race as a risk factor for CKD

c. We recommend removing Indigenous status as a risk factor for chronic kidney disease because the increased risk is explained by adverse social determinants of health, leading to a greater burden and progression of chronic kidney disease (Strong recommendation).

Evidence to decision domain	
Clinical evidence	• Currently, little to no evidence of genetic association with CKD • Social/cultural determinants of health are associated with CKD incidence and progression
Cultural safety considerations	• Race and ethnicity leading to misunderstanding of cultural identity and CKD
Cost, equity & resource implications	• Little to no costs associated with implementation • Implementation for this recommendation needs to be careful considered

"Kidney sickness is not our health story – never was part of our culture." (Alice Springs, 2018)

Identifying CKD and referral earlier in First Nations Australians

All individuals identifying as First Nations Australians

Kidney health check should be included in Aboriginal and Torres Strait Islander Peoples Health Assessments

Under 18 Years of Age

Screen for red flags of CKD

- Family history of CKD
- Clinical history of diabetes, hypertension, obesity, cigarette smoking, established CKD & acute kidney injury
- Clinical history of low birthweight
- Clinical history recurrent childhood infections

Considerations of:

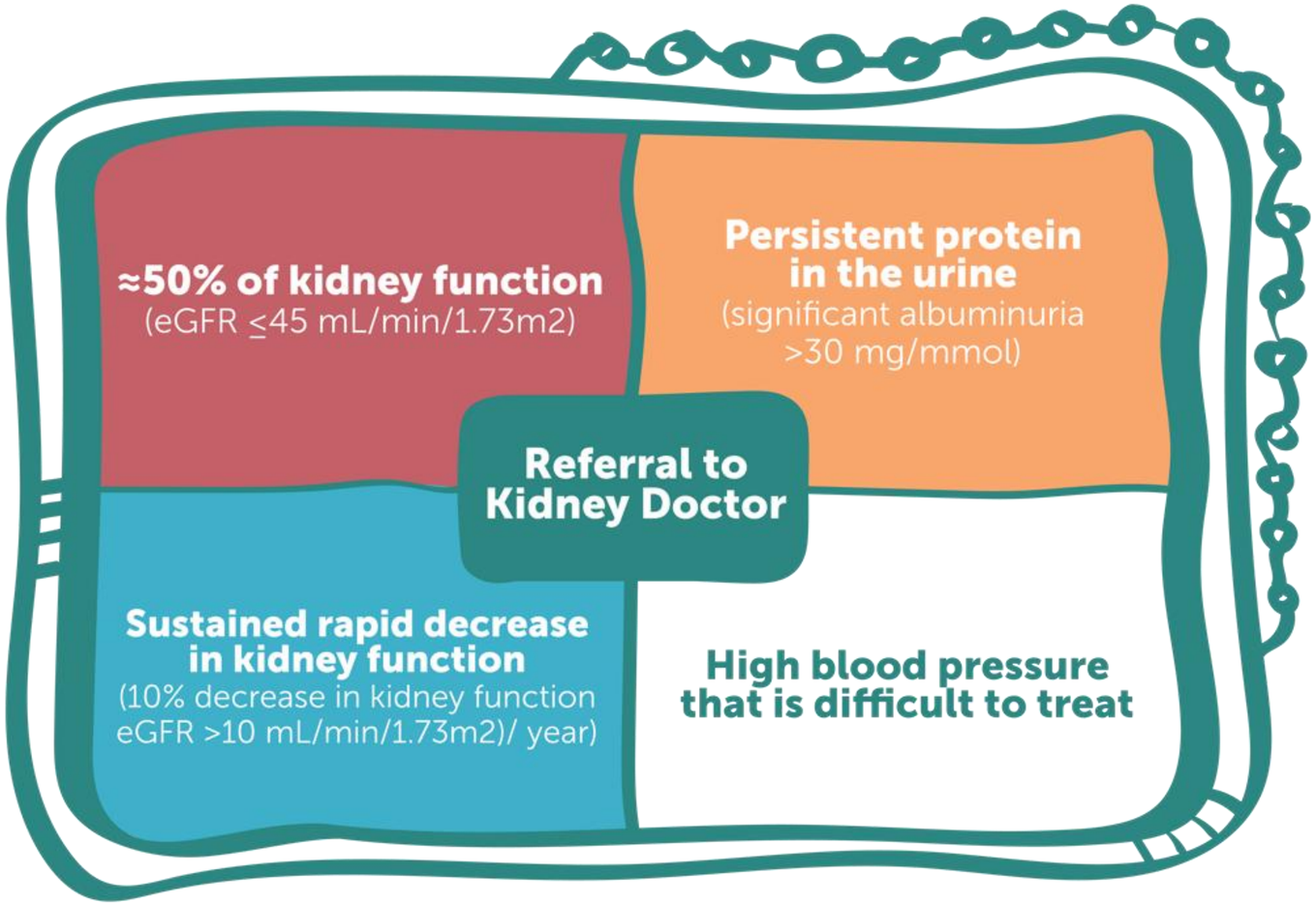
- Socioeconomic status, regional/rural and remote location, housing status, education level

Undertake a kidney health check if concerned

18 Years or over

Undertake a kidney health check, including the following tests;

- Blood tests
- eGFR
- Urine albumin: Creatinine ratio (ACR)



Models of care (kidney failure)

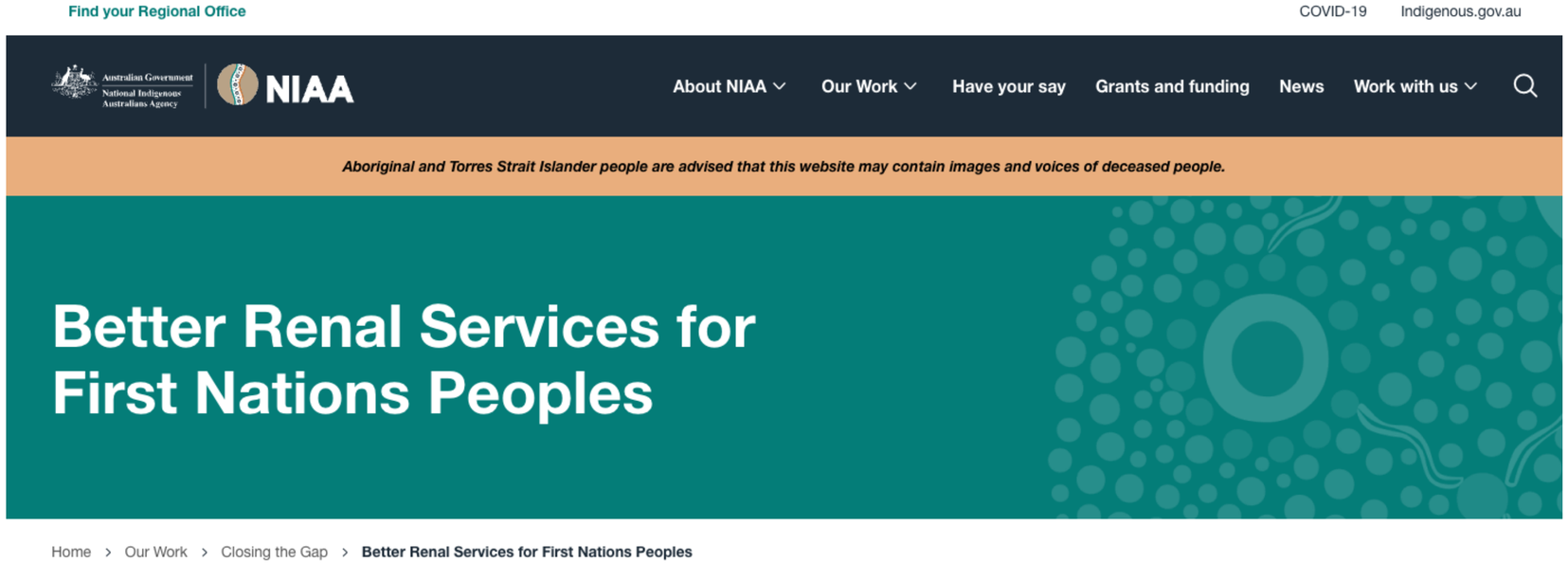
u. We recommend health services work in partnership with Aboriginal community-controlled health organisations (ACCHOs) to establish community-controlled models of care that address local needs and conditions, allowing First Nations Australians to have nurse-supported and Aboriginal Health Practitioners-supported dialysis on Country, particularly in remote areas *(Strong recommendation).*

Evidence to decision domains	
Clinical evidence	• No difference in outcomes (AMR 0.80, 95%CI 0.51 – 1.23) • Psychosocial benefits associated with model of care

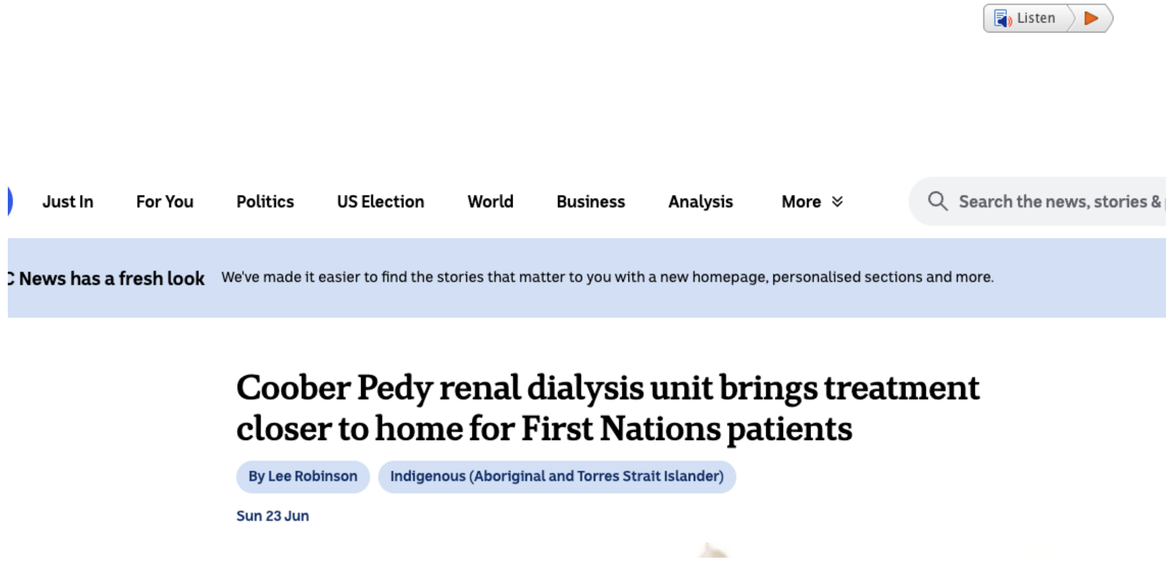
"As if the pain from the kidney machines isn't bad enough, we already broken hearted from being away from home"" (Port Augusta 2019).

"homesick, Cairns not home, miss family members, miss traditional lands, way of life in community, miss activities like fishing, hunting, family gathering" (Cairns & Yarrabah, 2019)

Impact so far



$73.2 million – to establish 30 dialysis units in regional and remote locations to support Aboriginal and Torres Strait Islander Peoples living with kidney disease



CARI GUIDELINES

CARING FOR AUSTRALIANS & NEW ZEALANDERS WITH KIDNEY IMPAIRMENT

Recommendations for culturally safe kidney care for First Nations Australians

cariguidelines.org
@cariguidelines

Priority guidelines topics for CARI in 2026-2027

PD – Maintenance of residual kidney function

HD – Volume control and management of fluid overload

Next steps

- Identifying specific clinical questions to address
- Engaging a Working Group
  - Nursing expertise vital
  - Lived experience
  - Nephrology
- Using modern methods
  - Adaptation of existing guidance to our region
  - Living guidelines for important questions

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CARING FOR AUSTRALIANS & NEW ZEALANDERS WITH KIDNEY IMPAIRMENT
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So, what can you as a nurse do.....

How can you get involved in the next development?



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Suggestions for good scientific evidence for the new CARI guidelines

VOLUME CONTROL AND MANAGEMENT OF FLUID OVERLOAD

BVM

Reddan, Donal N et al, 'Intradialytic Blood Volume Monitoring in Ambulatory Hemodialysis Patients: A Randomized Trial' (2005) 16(7) *Journal of the American Society of Nephrology* 2162

UF profiling

Flythe, Jennifer E et al, 'Effect of Ultrafiltration Profiling on Outcomes among Maintenance Hemodialysis Patients: A Pilot Randomized Crossover Trial' (2021) 34(1) *Journal of nephrology* 113

UF pausing

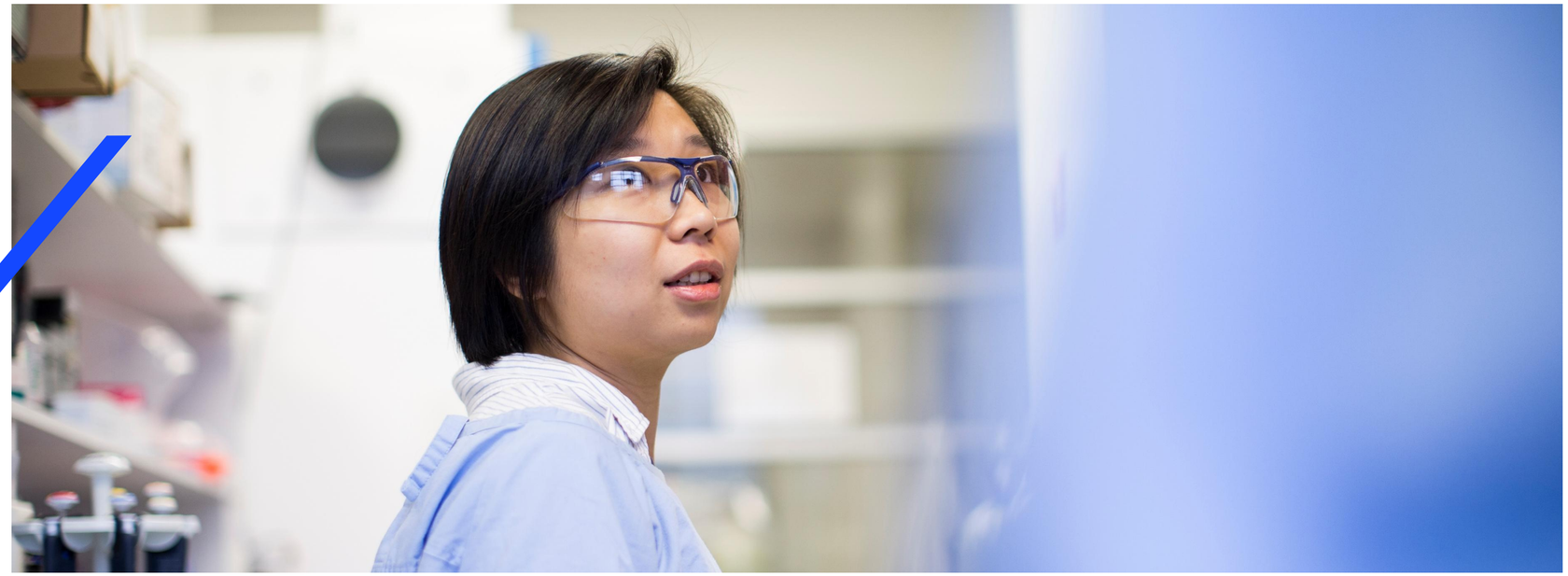
Bradshaw, Wendi, Cherene Ockerby and Paul Bennett, 'Pre-Emptively Pausing Ultrafiltration to Minimise Dialysis Hypotension' (2011) 7(3) *Renal Society of Australasia journal* 130

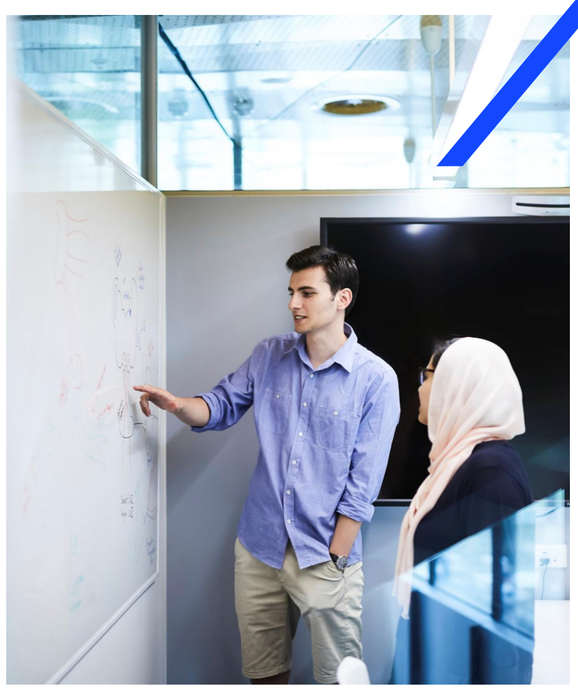
MAITENANCE OF RESIDUAL URINE VOLUME IN PD

Yohanna, Seychelle et al, 'Effect of Neutral-pH, Low–Glucose Degradation Product Peritoneal Dialysis Solutions on Residual Renal Function, Urine Volume, and Ultrafiltration: A Systematic Review and Meta-Analysis' (2015) 10(8) *Clinical journal of the American Society of Nephrology* 1380

Pinto, Joyce et al, 'Urine Volume as an Estimator of Residual Renal Clearance and Urinary Removal of Solutes in Patients Undergoing Peritoneal Dialysis' (2022) 12(1) *Scientific reports*

Song, Yanan et al, 'Short-Term Effects of Different Peritoneal Dialysis Solution Combination Schemes on Residual Renal Function and Microinflammation: A Pilot Randomized Controlled Trial' (2026) 2026(1) *Journal of clinical pharmacy and therapeutics*





Any Questions?

Acknowledgements

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