Harnessing ANZDATA: Lessons Learned And Future Directions For Nephrologists

Dr Georgina L Irish

Overview

- Background to ANZDATA
- Lesson Learned
  - Bench marking and Quality Indicators
  - Examples from practice
- Future Directions
  - For ANZDATA
  - How to get involved

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Background

ANZ DATA
AUSTRALIA & NEW ZEALAND
DIALYSIS & TRANSPLANT REGISTRY

ANZ DATA
AUSTRALIA & NEW ZEALAND
LIVING KIDNEY DONATION REGISTRY

ANZ DATA
AUSTRALIA & NEW ZEALAND
EYE & TISSUE DONATION REGISTRY

1963 Dialysis & TX in Australia

1969 National TX Survey in NSW

1971 Australian Dialysis Survey in SA

1975 New Zealand Dialysis Survey

1977 ANZDATA Registry

1989 ANZOD Registry

2003 Australian Peritonitis Registry

2004 ANZLKD Registry

2012 ANZETD Registry

2016 Web Services & Electronic Data Transfer

2018 Registry based trials

2019 PROMs pilot collection

2021 Primary Renal Disease

ANZ DATA
AUSTRALIA & NEW ZEALAND
ORGAN DONATION REGISTRY

ANZDATA
AUSTRALIA &
NEW ZEALAND
DIALYSIS & TRANSPLANT
REGISTRY
ANZOD
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ANZLKD
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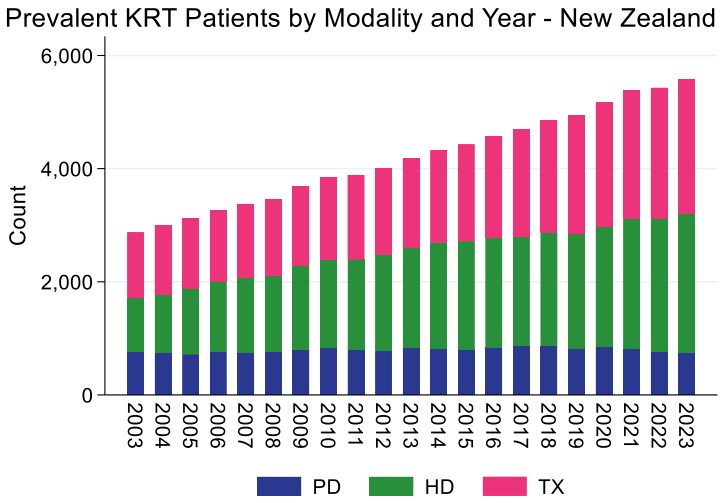
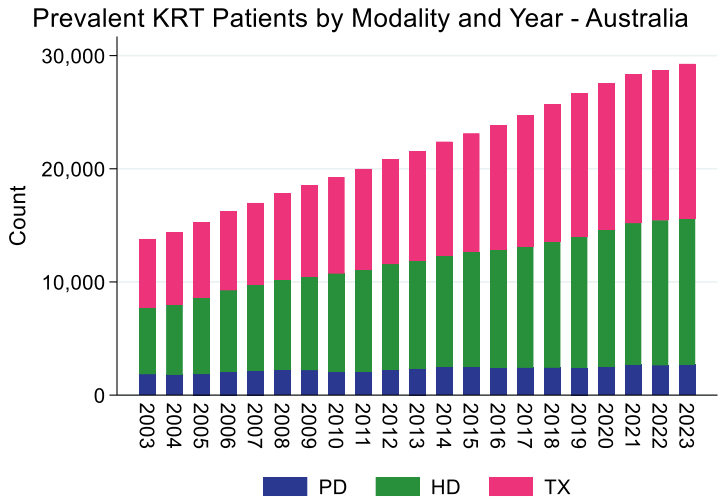
NEW ZEALAND
LIVING KIDNEY DONATION
REGISTRY
ANZETD
AUSTRALIA &
NEW ZEALAND
EYE & TISSUE DONATION
REGISTRY

Why have a Registry?

- Safety & Quality
- Health Service Planning
- Clinical Research





Governance

- Executive Steering committee
- Advisory committee
- Working groups
  - Haemodialysis
  - Peritoneal dialysis
  - Transplant
  - Living Kidney donor
  - Aboriginal and Torres Strait Islander
  - New Zealand
  - Paediatric
  - Patient-reported outcomes
  - COVID
- Special interest groups:
  - Genetics
  - Parenthood
- Consumer Advisory Pannel

Who are the users?

- Kidney units
- Jurisdictions (state and federal)
- Researchers
- Industry
- Patients

Data collection

Real time

- New patients
- Key events
  - Transplants
  - Return to dialysis
  - Deaths
  - Peritonitis
- Drives Quality Indicator reporting

End of year survey

- Underpins major database updates
- Cross sectional survey of prevalent dialysis and transplant patients
- Usually available by following September

How are data collected

- Who's included
  - Every patient receiving KRT for kidney failure in Australia/NZ
  - Opt-out consent (units differ in their approach)
- Who's excluded
  - Patients with AKI
  - Patients with kidney failure who don't receive dialysis or transplantation
- Who reports data
  - Individual renal units
  - Some transplant data comes from NOMS

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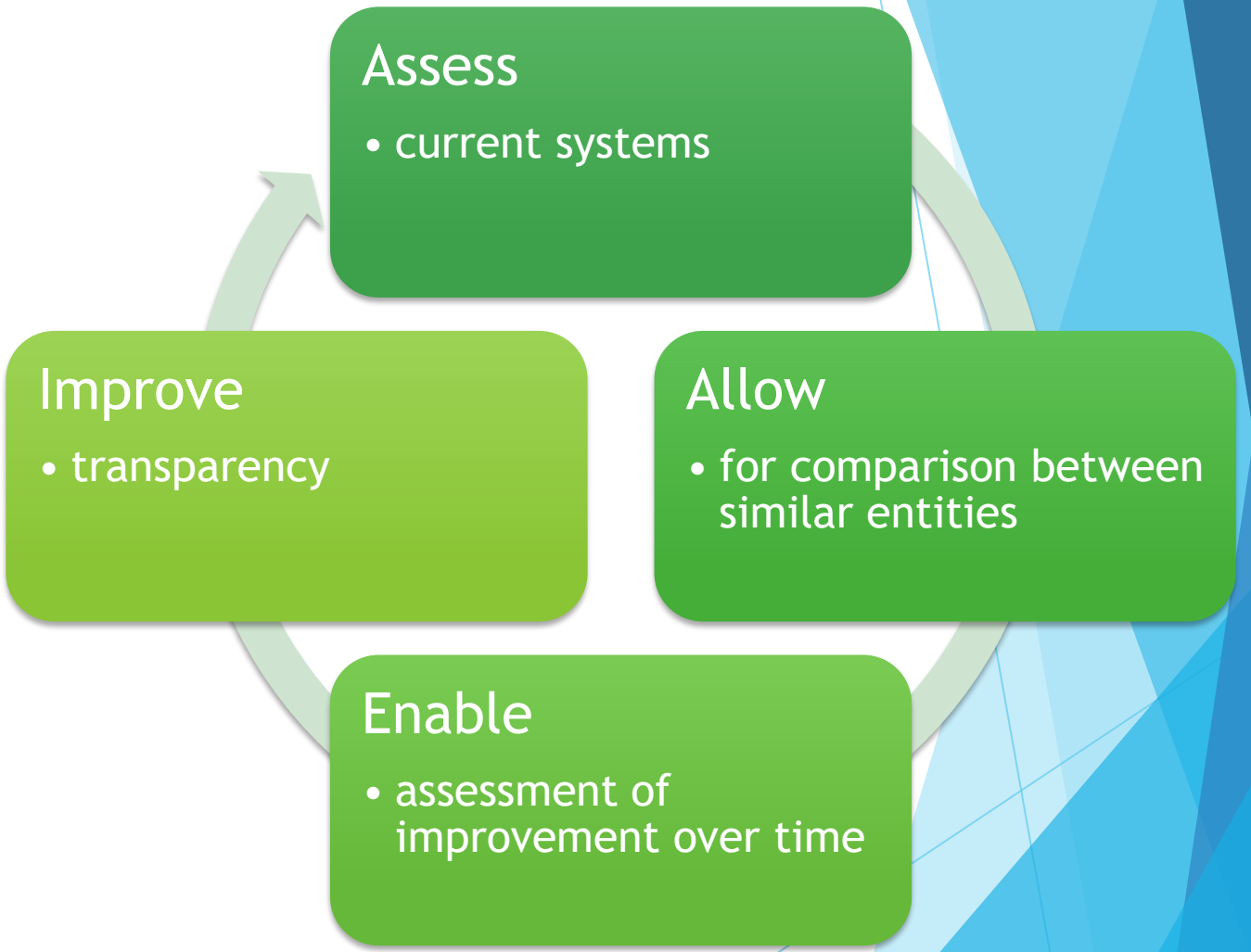
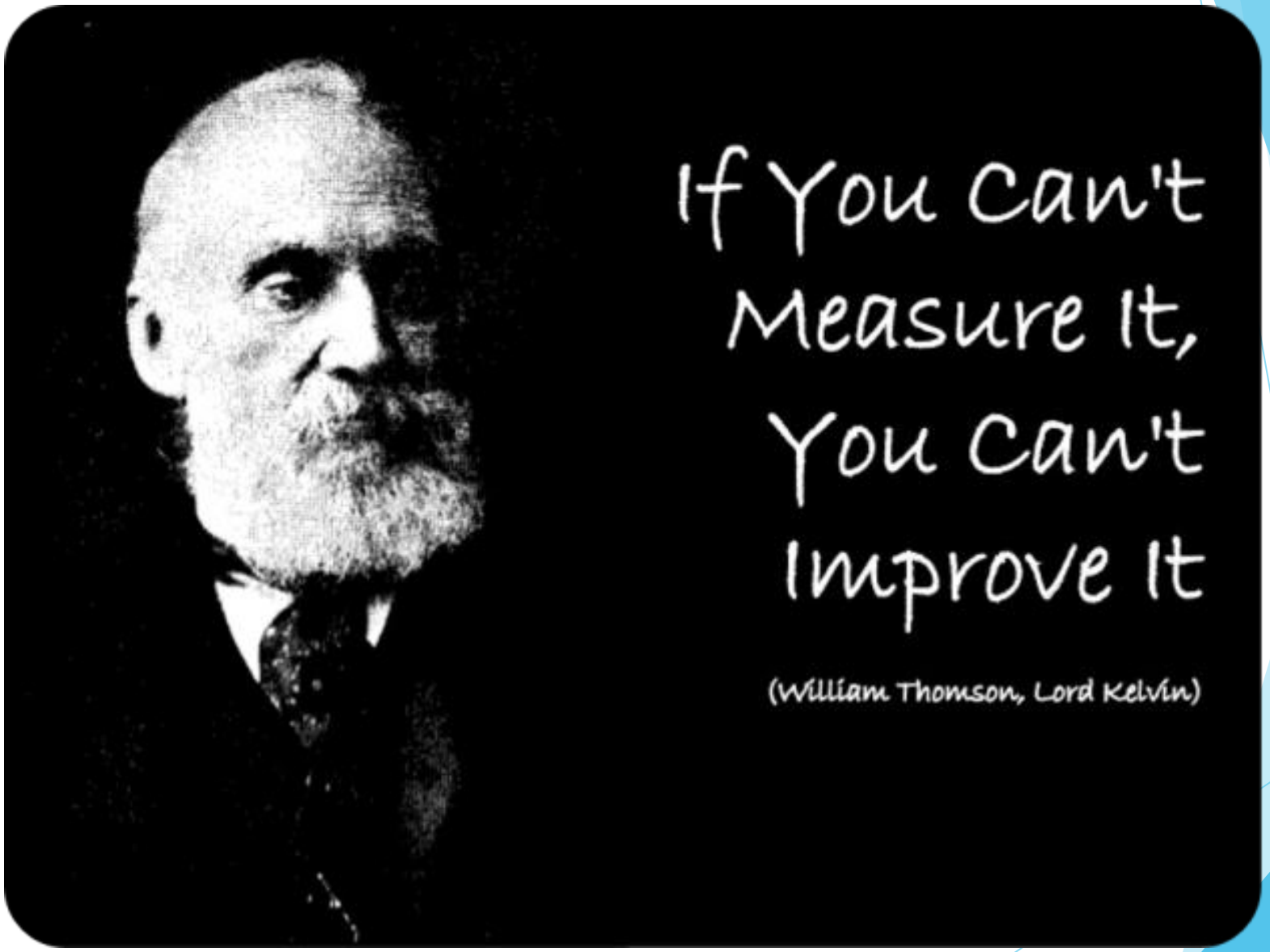
ANZSN Quality Indicators

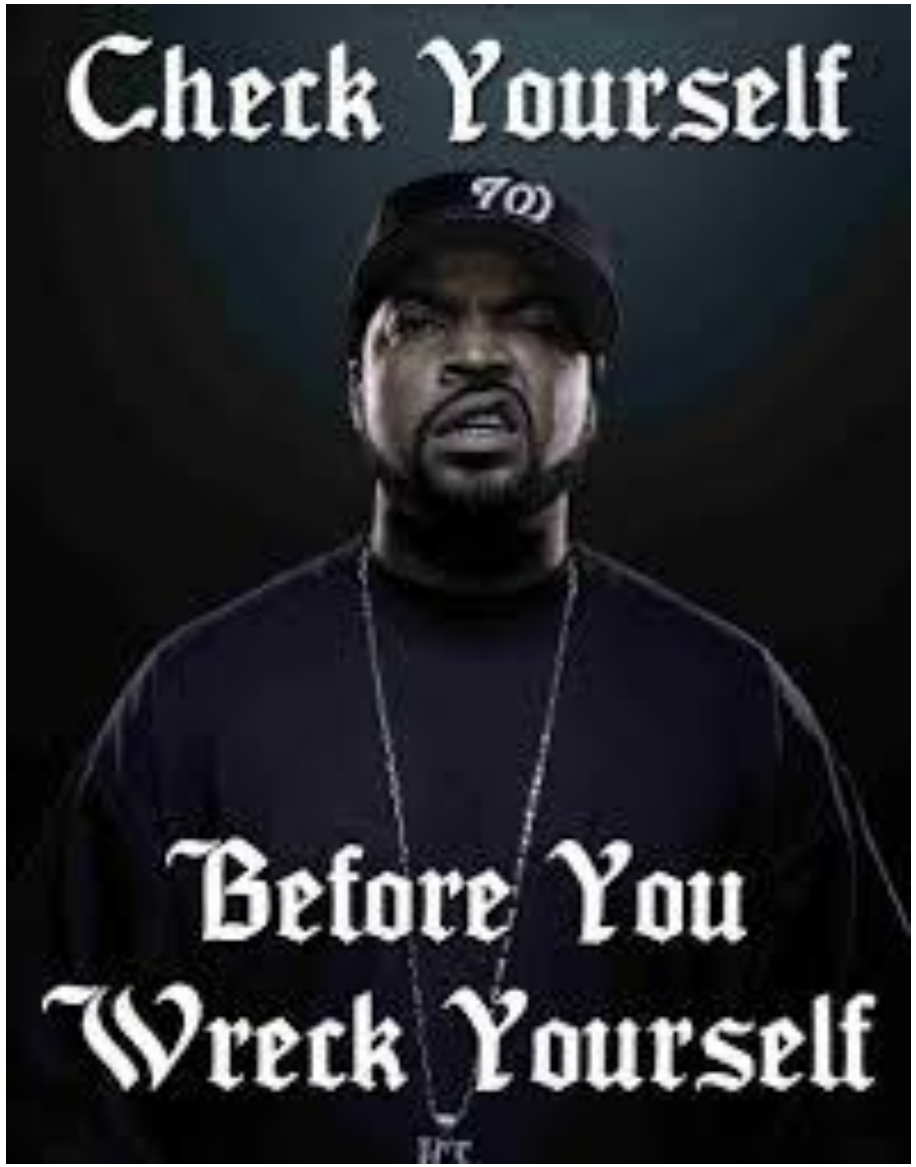
1. **KRT modality**
2. **Dialysis access planning at commencement of dialysis**
    - 2A: All access
    - 2B. Vascular access at first HD
    - 2C. HD vascular access planning
    - 2D. PD catheter planning
3. **Transplantation wait-listing**
4. **Incidence of peritonitis in patients treated with peritoneal dialysis**
5. **ANZDATA annual data survey timeliness**

Why are we comparing?

The importance of quality indicators




If You Can't
Measure It,
You Can't
Improve It
(William Thomson, Lord Kelvin)


Check Yourself
Before You
Wreck Yourself

ANZDATA quality indicator reports

- Yearly Individual hospital reports
- Quarterly real time quality indicator reports

QI Example: Dialysis access planning at commencement of dialysis

Successful planning for commencement of dialysis includes access for both PD and HD.

Commencement of dialysis with an AVF or AVG or PD catheter reduced risk of sepsis and mortality compared with a vascular access catheter.

- 2A. All Access planning
  - Numerator: Number of new patients with kidney failure starting haemodialysis (HD) with an arteriovenous fistula (AVF) or arteriovenous graft (AVG), or starting PD
  - Denominator: Total number of patients starting kidney replacement therapy (KRT) with dialysis
- 2B. Vascular access at first HD
  - Numerator: Number of new patients with kidney failure starting HD with an AVF or AVG
  - Denominator: Total number of patients starting KRT with HD
- 2C. HD vascular access planning
  - Numerator: Number of new patients with kidney failure starting HD with an AVF or AVG
  - Denominator: Number of patients on HD at 3 months
- 2D. PD catheter planning
  - Numerator: Number of new patients with kidney failure starting PD at first dialysis
  - Denominator: Number of patients on PD at 3 months

Dialysis access planning at commencement of dialysis

Successful planning for commencement of dialysis includes access for both PD and HD.

Commencement of dialysis with an AVF or AVG or PD catheter is associated with reduced risk of sepsis and mortality compared with a vascular access catheter.

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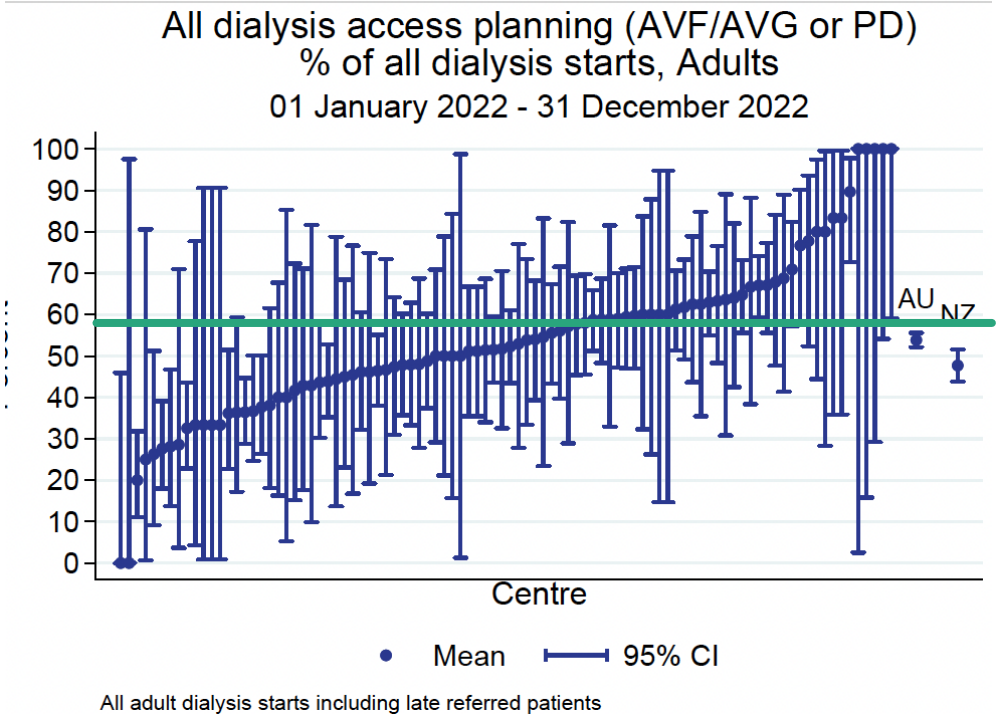
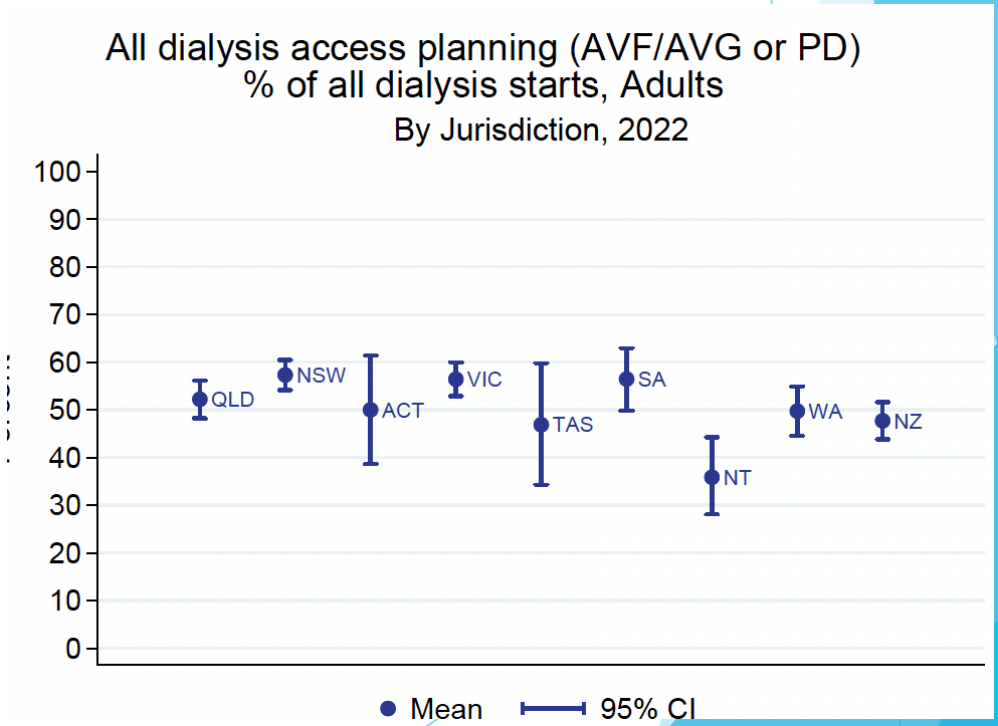
- 2C. HD vascular access planning
  - Numerator: Number of new patients with kidney failure starting HD with an AVF or AVG
  - Denominator: Number of patients on HD at 3 months
- 2D. PD catheter planning
  - Numerator: Number of new patients with kidney failure starting PD at first dialysis
  - Denominator: Number of patients on PD at 3 months

2A. All Access planning

Centre	Dialysis Patients	AVF or AVG or PD	Vascular Catheter	Missing Access Data	% of AVF or AVG or PD (95 % CI)	Early Referral	% of Early Referrals with AVF or AVG or PD
South Australia	**232**	**131**	**101**	**0**	**56 (50-63)**	**200**	**64 (56-70)**
Central Northern Adelaide Renal Service	184	108	76	0	59 (51-66)	160	65 (57-72)
Australia	**3274**	**1761**	**1509**	**4**	**54 (52-56)**	**2734**	**60 (58-62)**



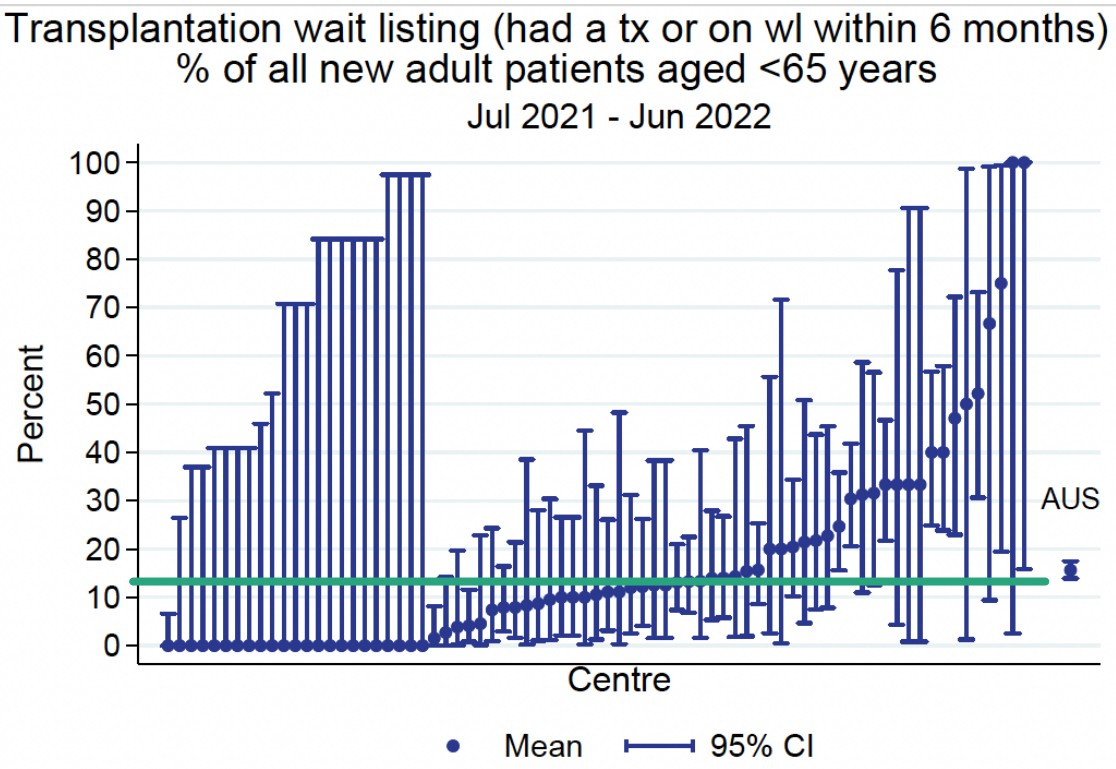
All adult dialysis starts including late referred patients

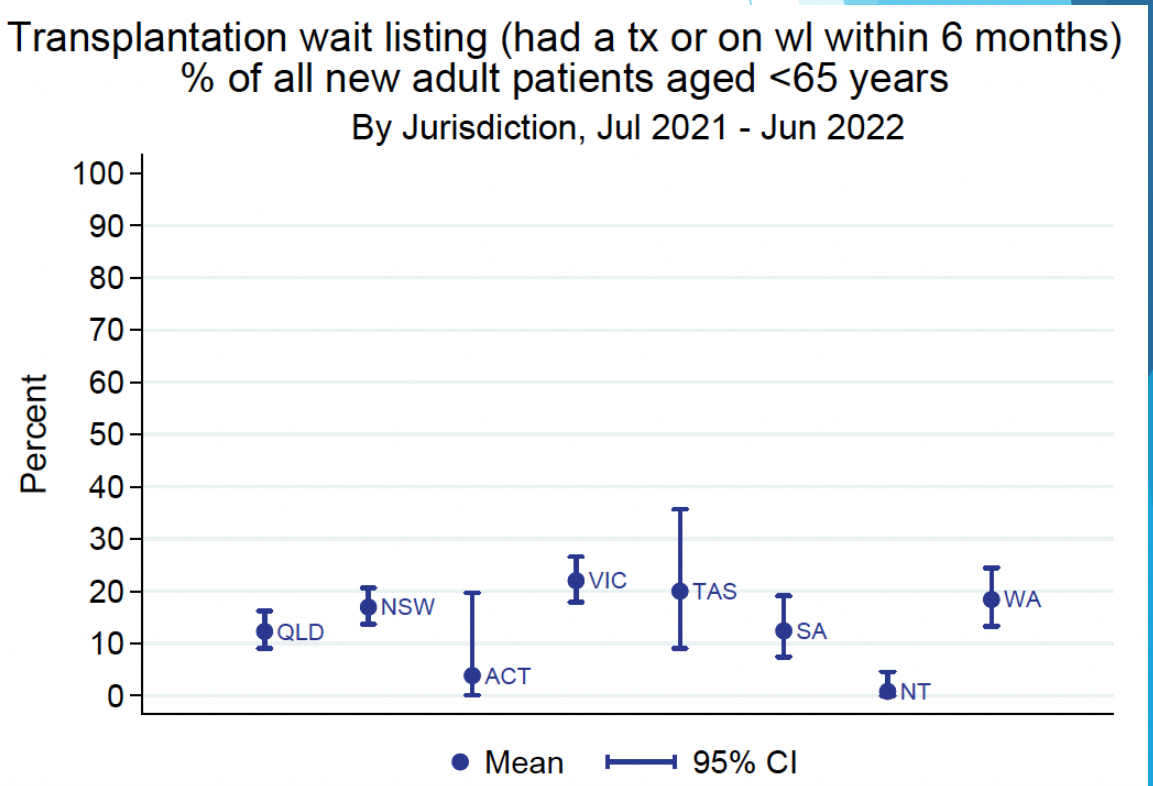


Transplantation wait-listing

- Numerator: Number of patients aged ≥2 years and <65 years who are transplanted or “active” on the wait list within 6 months of KRT start
- Denominator: Number of patients having KRT for <6 months plus aged ≥2 years and <65 years.

3. Transplantation wait-listing Centre	Patients	Transplanted or on wait list within 6 months	Neither transplanted nor on wait list	% transplanted or on wait list within 6 months (95 % CI)
Australia	**1720**	**269**	**1451**	**16 (14-17)**
South Australia	**137**	**17**	**120**	**12 (7-19)**
Central Northern Adelaide Renal Service	107	14	93	13 (7-21)





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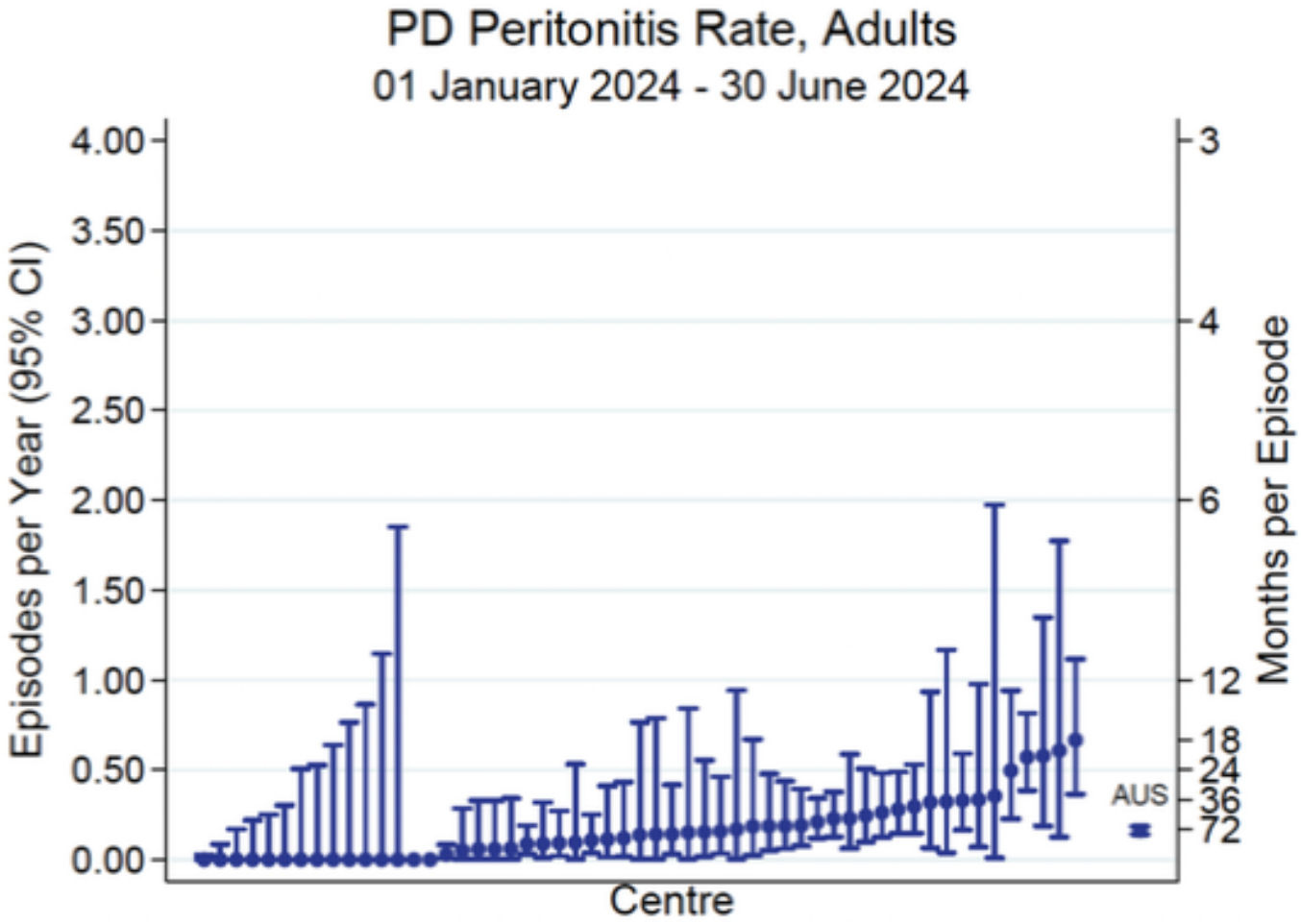
Peritonitis Example

- You have had a run of peritonitis in your PD unit
- You audit your data and find that your hospital's PD peritonitis rate is 0.5 infections per patient-year

- Questions
  - How does this peritonitis rate compare with other units?



ANZDATA/ANZSN Quality Indicators. First Half of Year Report 01 January 2024 - 30 June 2024

NEPHROLOGY

Nephrology **16** (2011) 19–29

Review Article

Peritoneal dialysis practice in Australia and New Zealand: A call to action

MATTHEW D JOSE,[1] DAVID W JOHNSON,[2] DAVID W MUDGE,[2] ANDERS TRANÆUS,[3] DAVID VOSS,[4] ROWAN WALKER[5] and KYM M BANNISTER[6]

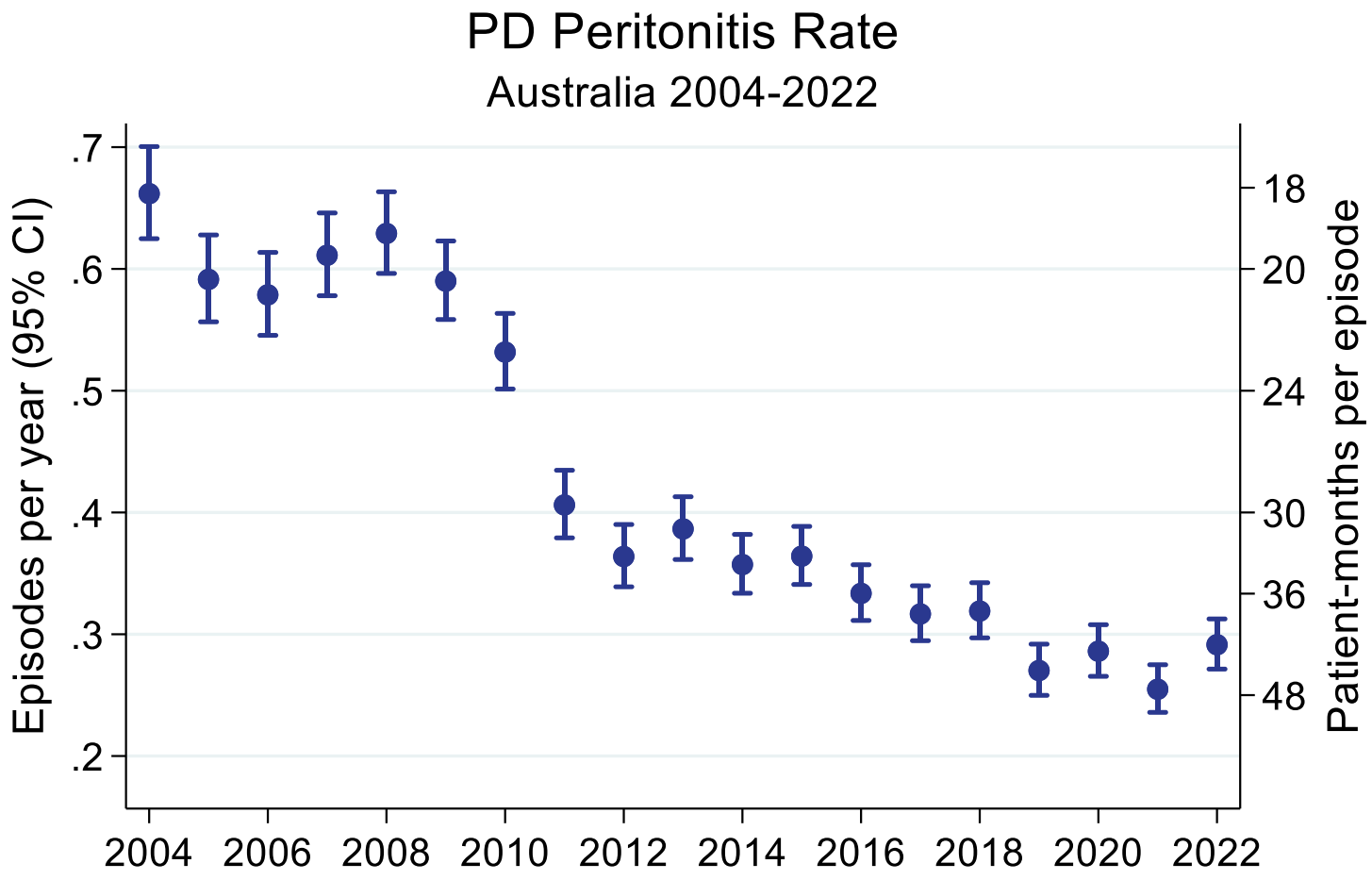
[1]Department of Nephrology, Royal Hobart Hospital & Menzies Research Institute, Hobart, Tasmania, [2]Department of Nephrology, University of Queensland at Princess Alexandra Hospital, Brisbane, Queensland, [5]Department of Nephrology Royal Melbourne Hospital, Melbourne, Victoria, and [6]Central Northern Adelaide Renal and Transplantation Service, Royal Adelaide Hospital, Adelaide, South Australia, Australia; and [3]Baxter Healthcare Asia Pacific, Shanghai, China; and [4]Renal Department, Middlemore Hospital, Otahuhu, Auckland, New Zealand

Table 1 Examples of initiatives in peritoneal dialysis concurrent with or emerging since the first Call to Action paper

Initiative	Aim(s)
ANZDATA KPI Project[2,3]	Provide valid, correctable markers that are easy to understand and implement focussed on HD and PD access
Baxter Healthcare PD Academy	Improve the quality of life and maximize the quality of care of PD patients, promote a philosophy of integrated care among renal clinicians, give confidence to those managing or starting a PD programme and develop future leaders in PD
Cochrane Systematic Review on Peritonitis[4]	Provides updated evidence-based evaluation of benefits and harms of treatments for PD-associated peritonitis
KHA-CARI Guideline Implementation Project[5,6]	Two-phase project focussed on ensuring implementation of KHA-CARI and ISPD guidelines regarding the prophylactic use of antibiotics and antifungals in PD patients using baseline data collection and tools to overcome barriers
Peritoneal Dialysis Outcomes and Practice Patterns Study[7,8]	Increase the appropriate use of PD, extend technique survival and improve quality of life for PD patients through greater understanding of modifiable management practices on the risk of all-cause peritoneal dialysis technique failure
Queensland Health Clinical Pathways Project[9]	Provide pathways for paediatric and adult patients presenting with clinical peritonitis, covering assessment, empiric treatment and post-culture treatment and referral
Renal Health Clinical Network KPI Project[10]	Provide KPIs that cover definitions, inclusions/exclusions, data submission and reporting, and targets (includes CKD education and peritonitis rates)
Royal Hobart Hospital Exit Site Care Quality Improvement Activity[11]	Develop a continuous quality improvement programme to establish a more structured approach to the existing exit site care plan (led to dramatic actual reductions in exit site infection rates)
Victorian Continuous Quality Improvement Program[12]	Support service providers to monitor and continuously improve their service coordination implementation and practice based on a continuous quality improvement framework

ANZDATA, Australia and New Zealand Dialysis and Transplant Registry; CARI, Caring for Australasians with Renal Impairment; CKD, chronic kidney disease; HD, haemodialysis; ISPD, International Society for Peritoneal Dialysis; KHA, Kidney Health Australia; KPI, key performance indicators; PD, peritoneal dialysis.

Mudge DW, Boudville N, Brown F, Clayton P, Duddington M, Holt S, Johnson DW, Jose M, Saweirs W, Sud K, Voss D, Walker R. Peritoneal dialysis practice in Australia and New Zealand: A call to sustain the action. Nephrology (Carlton). 2016 Jul



2023 ANZDATA Annual Report, Figure 5.24

J Chen, C Davies, E Au, S Bateman, K Hurst, G Irish, D Lee, H McCarthy, S McDonald, W Mulley, M Roberts, T Sun, P Clayton. 46th Report, Chapter 5: Peritoneal dialysis. Australia and New Zealand Dialysis and Transplant Registry, Adelaide, Australia. 2023. Available at: http://www.anzdata.org.au

Transplant Example

- When a deceased donor donates a kidney, that kidney must be allocated to somebody on the waiting list
- What data can be used to help inform the allocation decision?

ALLOCATION OF CADAVER DONOR KIDNEYS IN AUSTRALIA

BRIAN D. TAIT[1,3] AND GRAEME R. RUSS[2]

The national allocation of kidneys in Australia is based on a combination of human leukocyte antigen (HLA) matching and equity factors designed to make transplantation accessible to as many patients as possible. A points system has been designed that deducts points for HLA mismatches but adds points for factors such as levels of HLA sensitization, waiting time on dialysis, and a loading for pediatric patients. Kidneys that do not reach the level of matching required for national allocation are transplanted in the donor state using both matching and waiting time criteria, which caters to minority groups with rare HLA types.

The demand for cadaveric kidneys for transplantation far outweighs the supply. Therefore it is important to have a system of allocation that maximizes transplant success rates, is fair and equitable, and does not unduly disadvantage groups of patients.

Australia has a system of allocation that has a basic equity philosophy similar to that in the United States, as described by Ting and Edwards in this issue of *Transplantation* (*1*). Australia does, however, have both common and different equity issues and factors that need to be considered when arriving at the fairest system of allocation. Whereas the national exchange of kidneys has been practiced since the mid-1980s, the current scheme in Australia has been in place since 1992 with only small variations in the algorithm being made since that time. The detailed renal allocation schemes can be viewed at http://www.racp.edu.au/tsanz/oap7c.htm.

then subtracts 1,000,000 points for each HLA-A and B mismatch, which in this case are considered equal. Mismatching at HLA-DR is an automatic exclusion from national allocation.

Within each matching category, points are added for age, HLA sensitization (defined as any panel reactive antibody [PRA] >50%), and waiting time on dialysis to bias the allocation toward patients whose probability of receiving a graft are compromised because of these confounding variables. These are the same justice factors identified by Ting and Edwards (*1*) that were incorporated into the scheme in the United States. The large starting score (60,000,000) permits other factors to be ranked on the basis of relative importance but not sufficient to override a matching grade. It also allows further deductions to be made using the regional allocation protocols (see list) for recipients who do not reach the threshold for allocation by the national protocol (58,000,000).

1. Pediatric patients: An additional 30,000 points are added for patients aged less than 18 years.

2. HLA sensitization: A total of 1,000 points are added for each percent PRA value in patients with any PRA greater than 50%.

3. Waiting time: A total of 100 points are added to the score for each month a patient has been on the transplant waiting list.

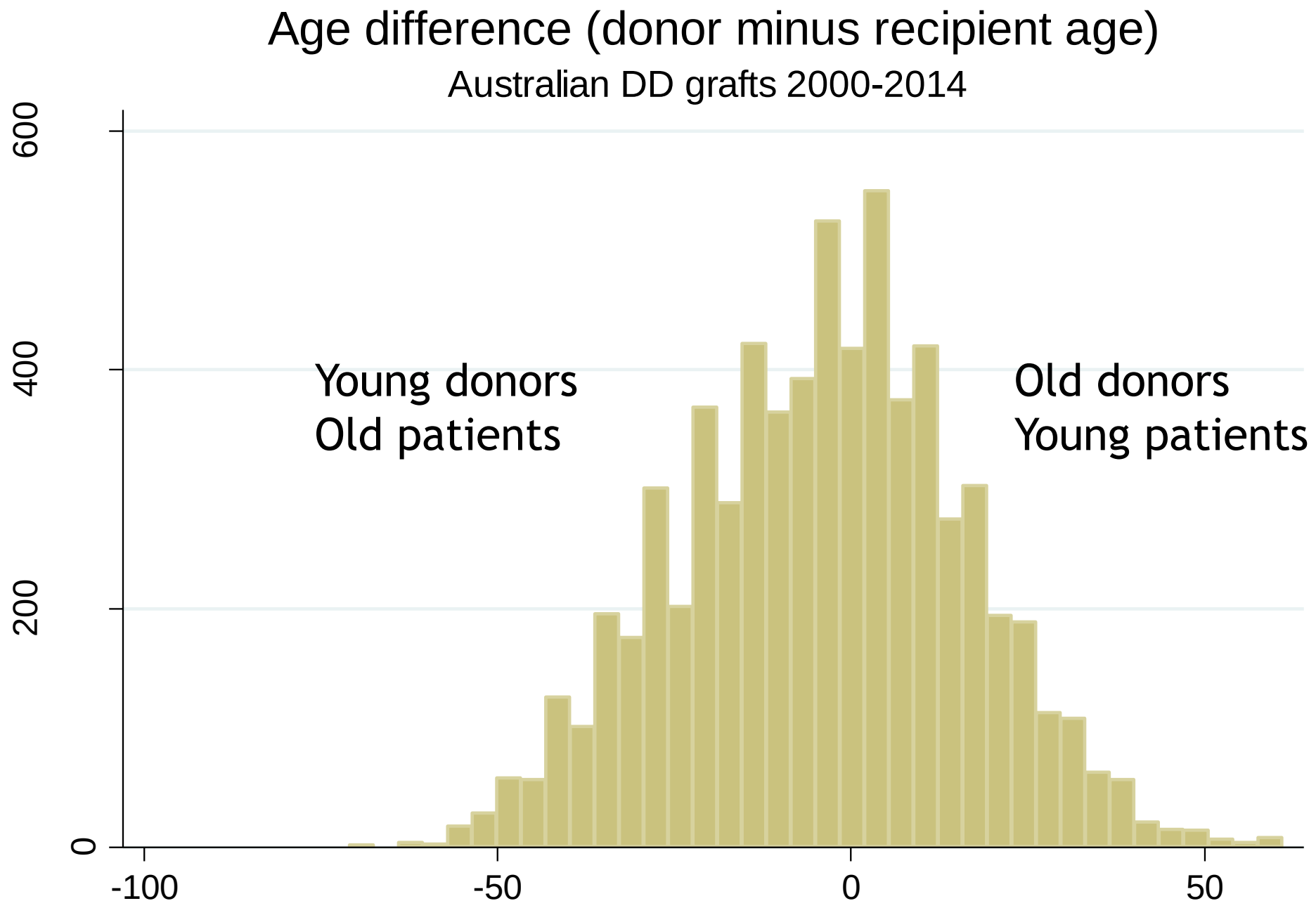
The cutoff point score for allocation on the national criteria is 58,000,000. Therefore, regardless of weighting received for the other factors, patients with any HLA-DR mismatch or more than two HLA-A and B mismatches are not eligible for national allocation.

Transplantation 2004 Feb 27;77(4):627-9

Equity
Utility
Fair system that doesn’t maximise outcomes
Unfair system that maximises outcomes

Old Australian model

- Major listing criteria:
  - Kidney Failure on dialysis
  - High likelihood of significant benefit from kidney transplantation
- Major allocation criteria:
  - Blood group — Equity
  - Waiting time — Equity
  - HLA match — Utility
  - Sensitisation — Equity
  - Childhood — Utility

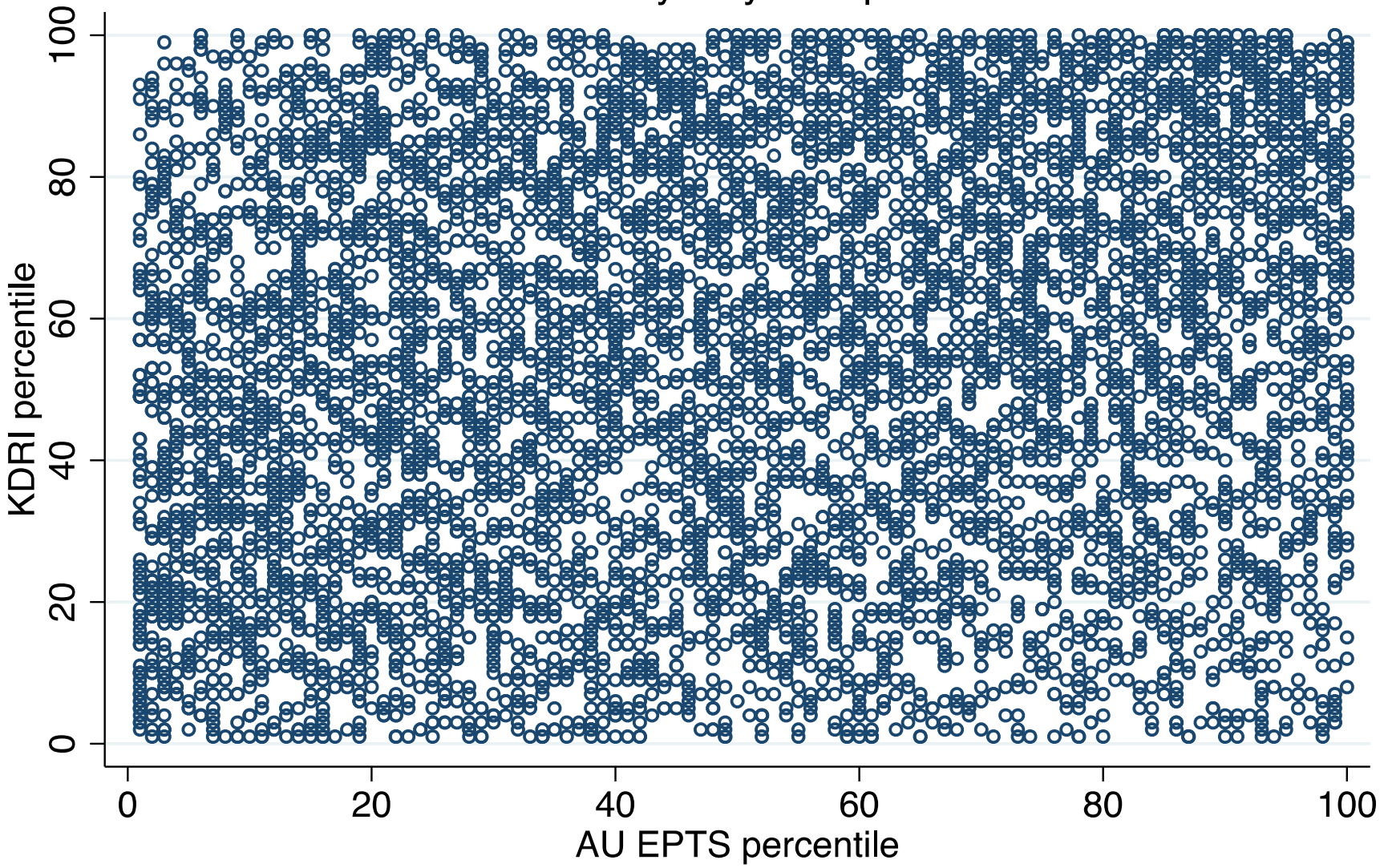

Age difference (donor minus recipient age)
Australian DD grafts 2000-2014
600
400
200
0
Young donors
Old patients
Old donors
Young patients
-100
-50
0
50

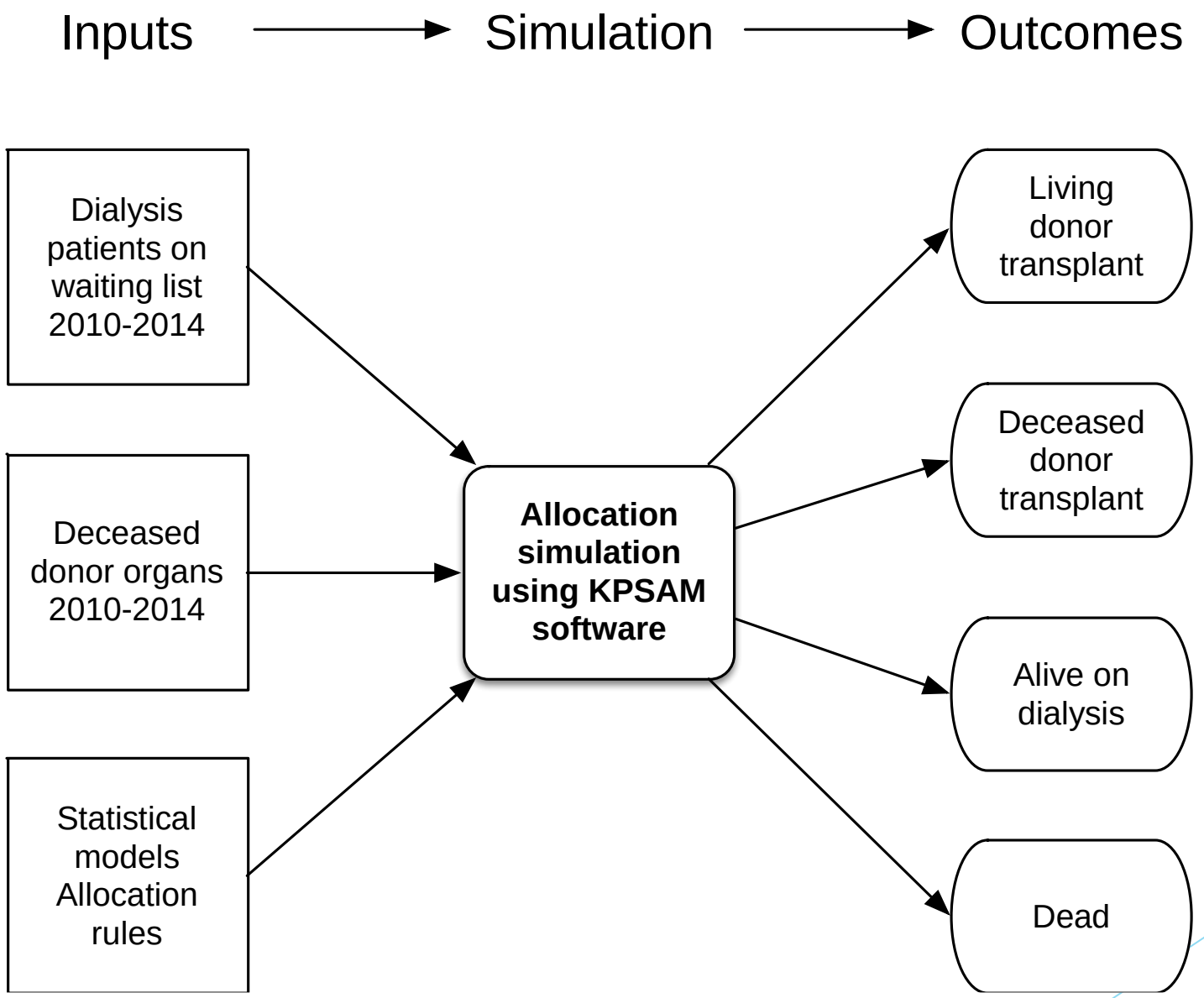
Risk scores

- Kidney donor risk index (KDRI)
  - Prognosis of kidney
- Estimated post-transplant patient survival (EPTS)
  - Prognosis of recipient

Kidney prognosis vs recipient prognosis

Australian DD kidney-only transplants 2002-2016





Phil Clayton, Matt Sypek,RTAC

The Transplantation Society of Australia and New Zealand

Clinical Guidelines for Organ Transplantation from Deceased Donors

Version 1.6 – May 2021

Version control

Version #	Changes made	Approved by	Date
1.6	The deceased donor kidney allocation algorithm underwent a review that has resulted in broad changes to Chapter 5 (Kidney) and Appendix C. Further enhancements are planned to continue to improve the deceased donor kidney allocation process.	Australasian Transplant Coordinators Association (ATCA), Transplant Society of Australia and New Zealand (TSANZ), Organ and Tissue Authority (OTA) and the OrganMatch Strategic Governance Committee (OMSGC).	4 May 2021

Lessons learned

- Quality indicators and Benchmarking are important
- Data can answer questions
- Data can lead to change

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Strategic direction

Enduring aim is to be a clinical quality registry which provides data and analyses to support the work of funders and contributors

Future Directions

New variables

Primary renal disease

Genetics

Hybrid dialysis

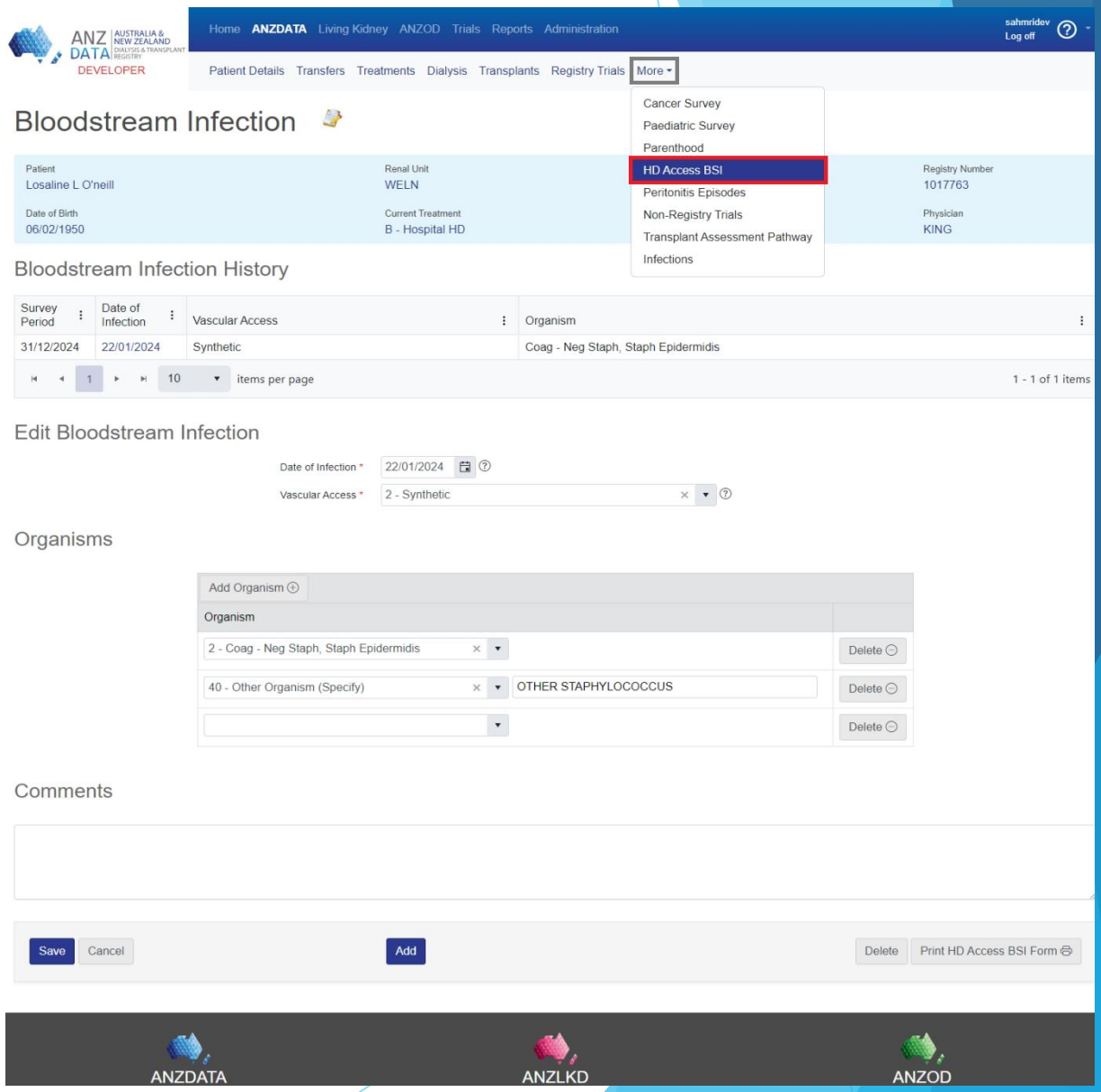
Blood Stream Infections

Capacity Report

Haemodialysis access related blood stream infections

The three data variables to be collected in real time:

- Date of Infection
- Causative Organism/s
- Access related to the blood stream infection (catheter, AV fistula or AV graft)



ANZDATA and Education

TRAINEE RESEARCH PROJECTS

TRAINEE WEEKEND

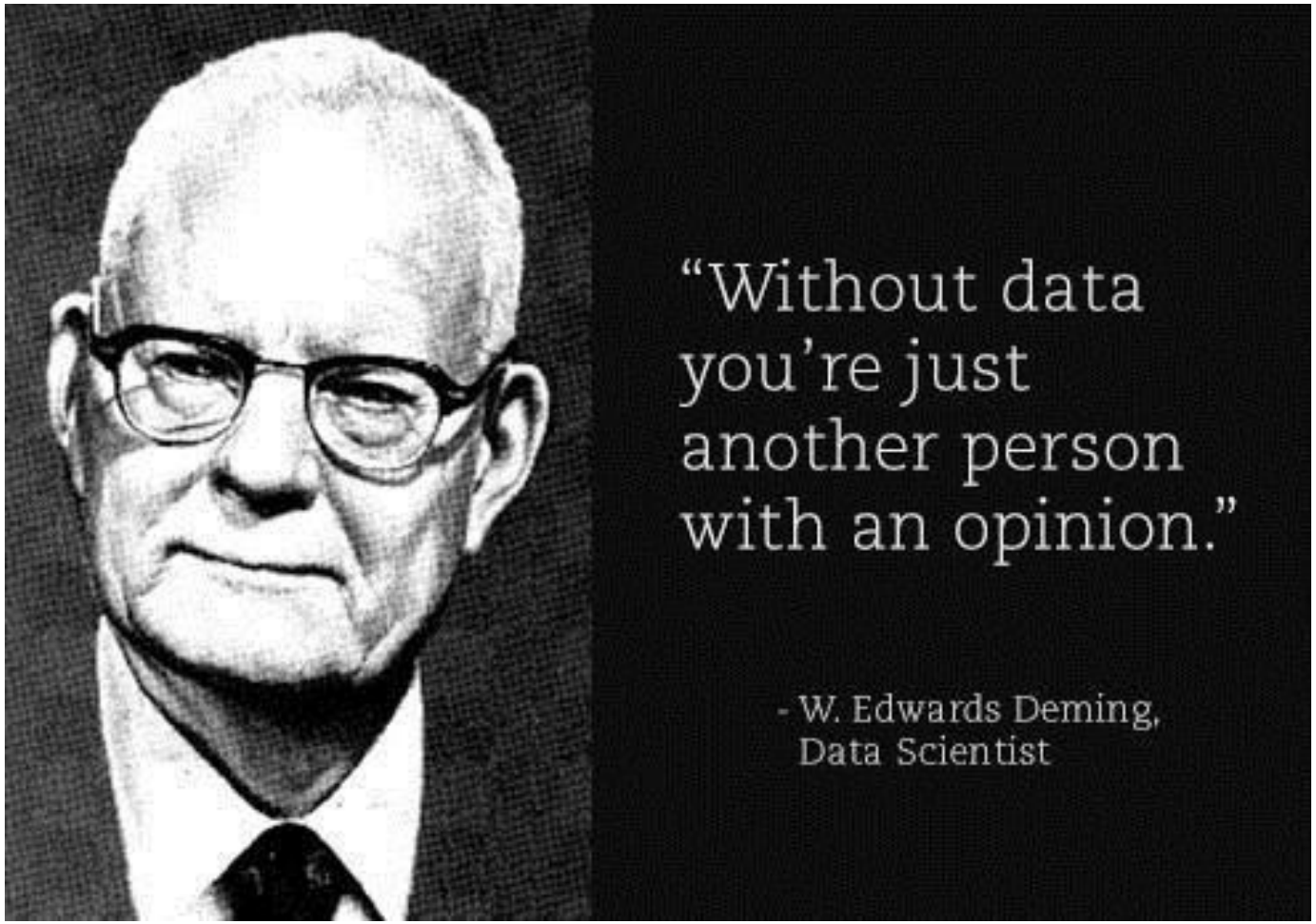
ONLINE SUPPORT

Get Involved

- Research
- Working Groups
- ANZDATA Advisory Committee
- Consumer Advisory Pannel
- Be a local champion

Working Groups - availabilities

- Living Kidney Donation WG - Convenor
- Aotearoa New Zealand WG - Convenor
- Aboriginal and Torres Strait Islander Health WG - General Members and Aboriginal and/or Torres Strait Islander Members
- Paediatric WG - General Members, Allied Health and Aotearoa New Zealand Members


“Without data you’re just another person with an opinion.”
- W. Edwards Deming, Data Scientist

Summary

- ANZDATA
  - Individual
  - Unit level
  - Regionally
- Lesson Learned
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  - Systemically
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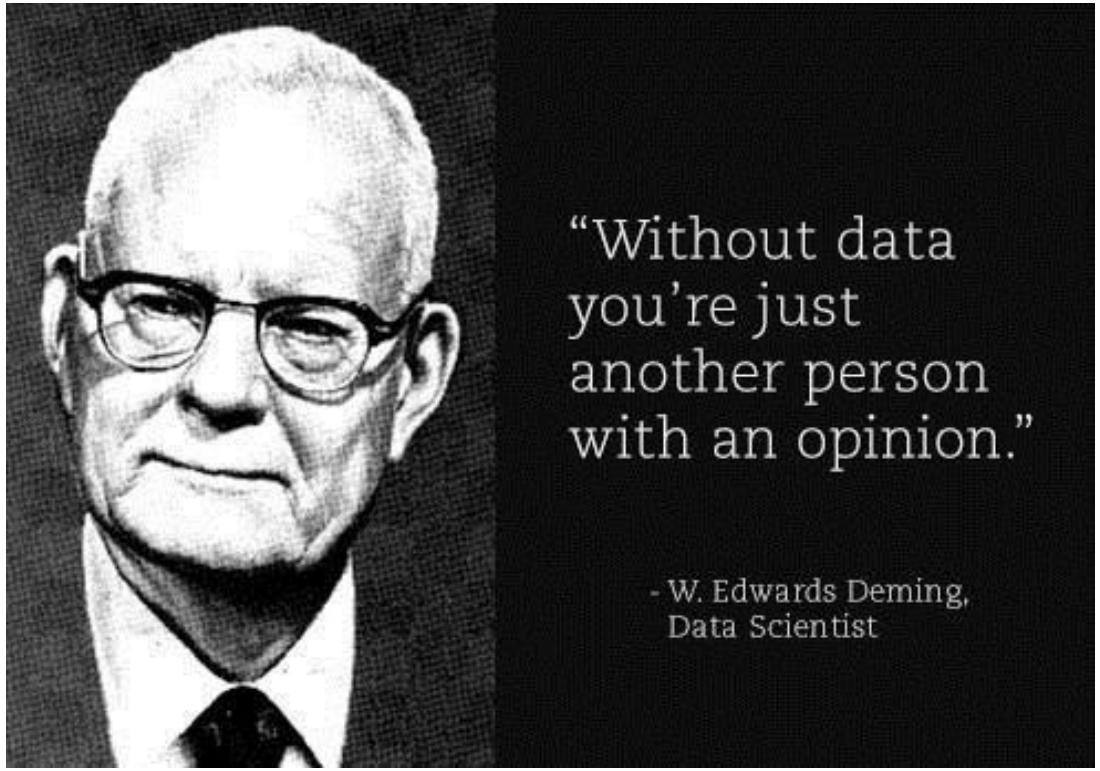
Acknowledgements

- Units – Patients, nurses, doctors, allied health staff
  - Data collection
  - Enquiries
  - Feedback
- Funders
  - OTA, NZ MoH, KHA
- ANZSN
- Staff, volunteers, & working group members



Thank you and questions