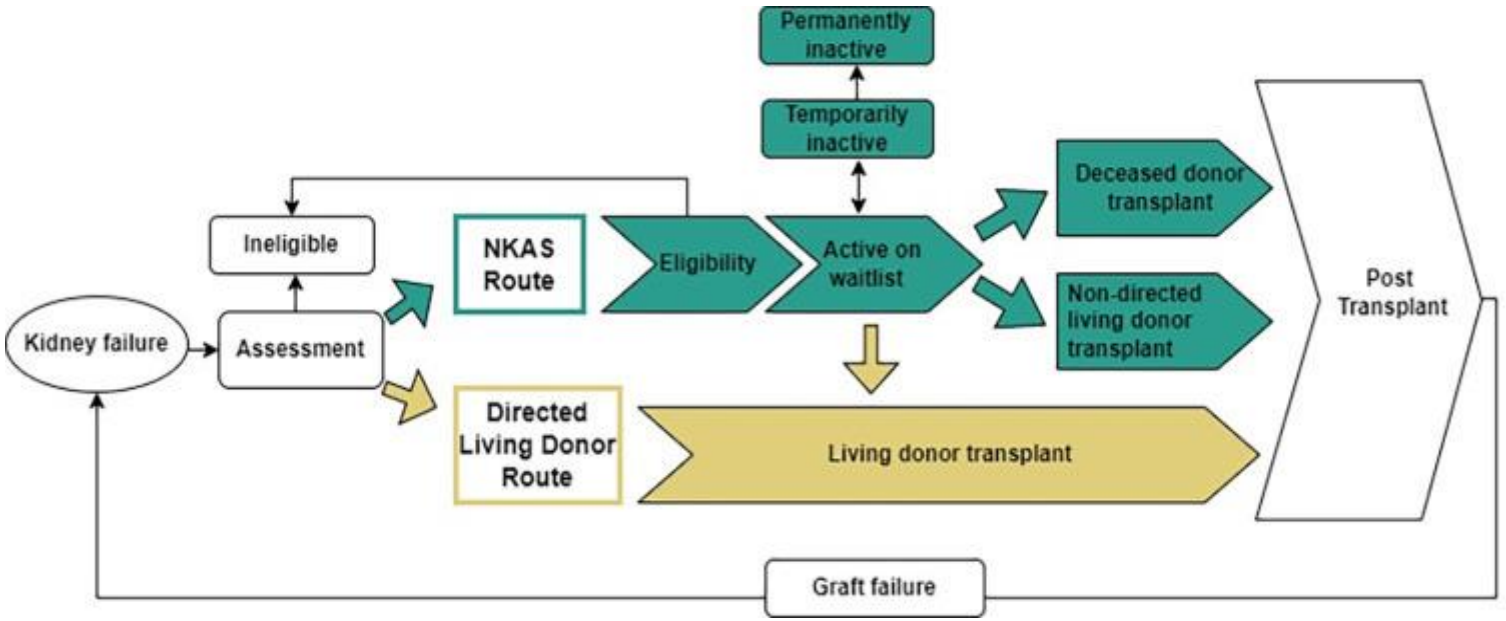
Kidney Transplant Eligibility

- Dr Sine Donnellan
- Nephrologist, Southern Te Whatu Ora

- No conflict of interest

ASSET
KIDNEY RESEARCH
HE RAWA RARAUNGA HAUORA MŌ NGĀ TĀNGATA O AOTEAROA

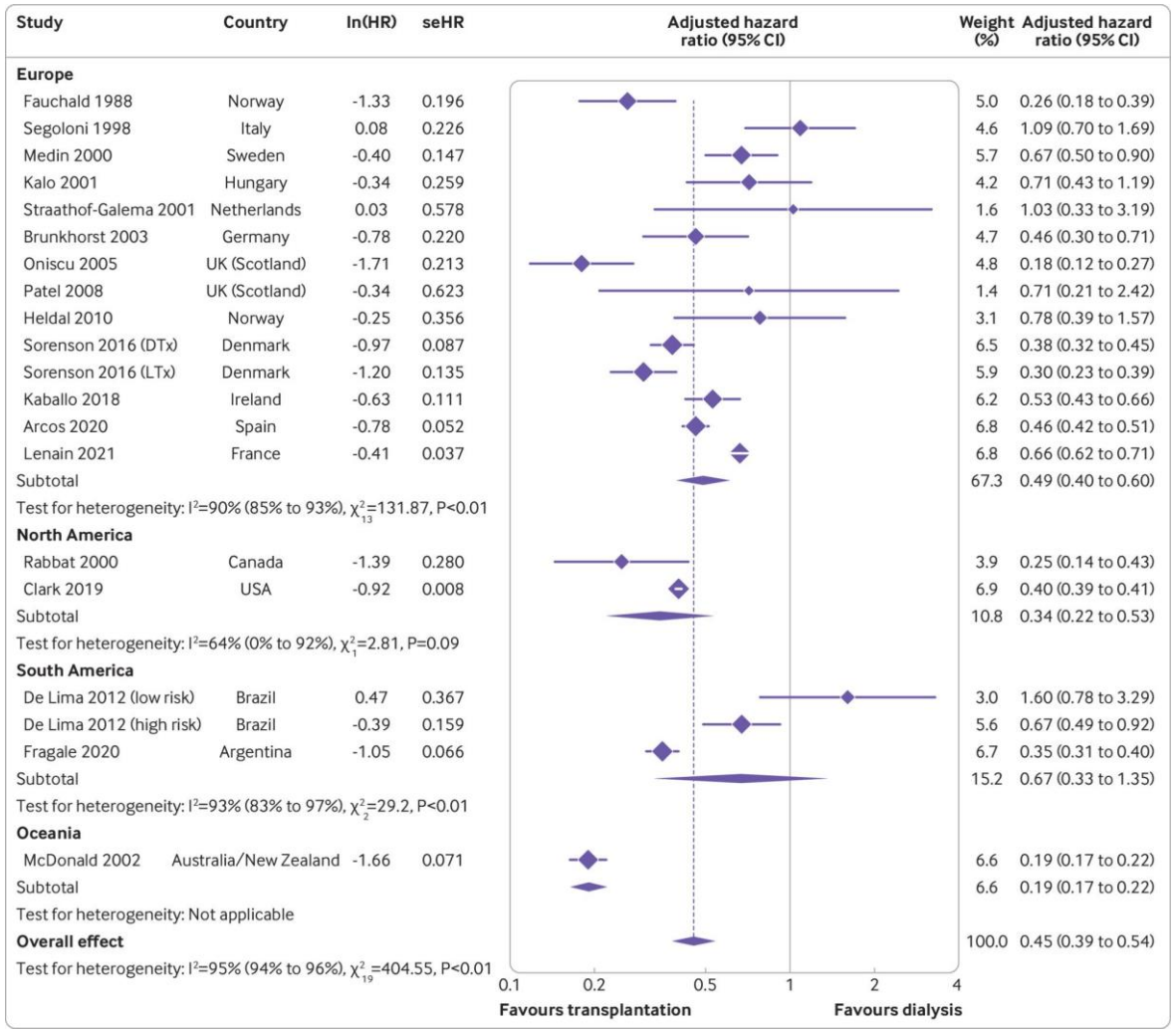


AcceSS and Equity in Transplantation (ASSET) New Zealand: PloS One. 2022 Aug 25; 17(8)

Determine eligibility

- Risk
  - Transplant related risk
  - Risk remaining on dialysis
- Benefit
  - Survival
  - QoL
  - Economic

KT offers superior survival for most



Daoud Chaudhry et al. BMJ 2022;376:bmj-2021-068769

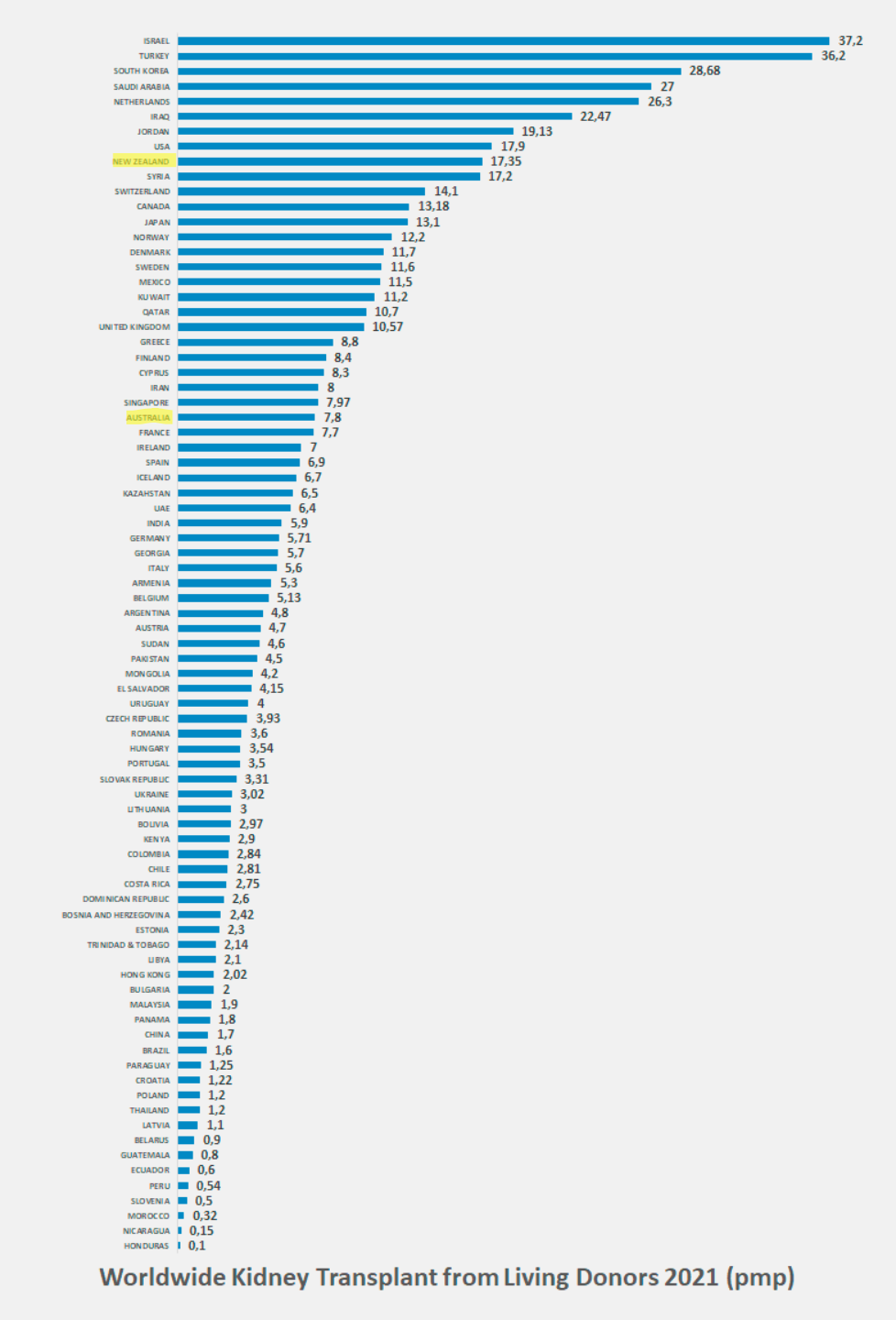
©2022 by British Medical Journal Publishing Group

- Survival
  - Perioperative mortality risk (HR 1.5-4.8) first 3 months (1)
  - Survival benefit after 1 year

- QoL Benefits (2)

- Economic Benefits

1. Chaudhry et al. BMJ 2022;376:
2. Wong et al, PloS one 2012

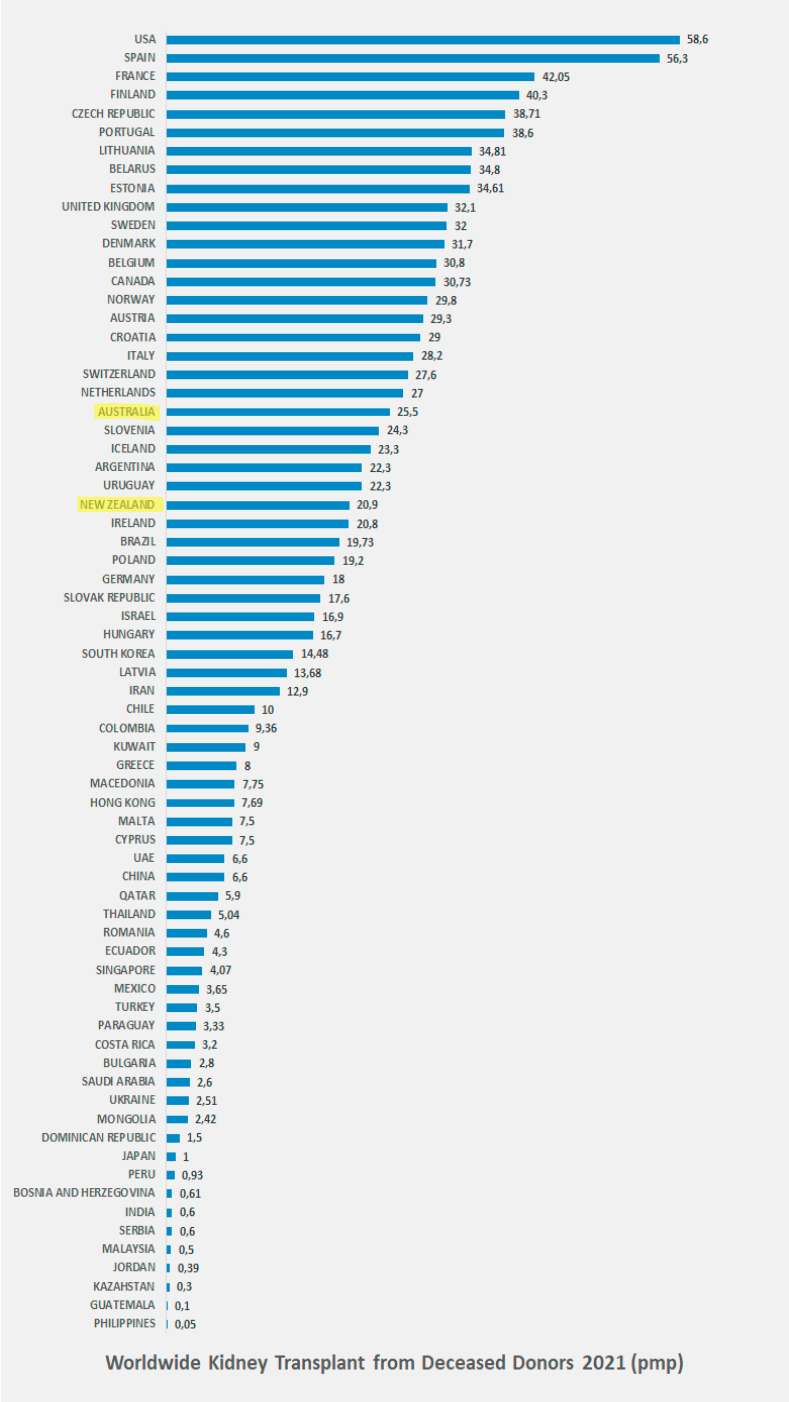


Living Donor KT

NZ: 17.2 PMP

Aus: 7.8 PMP

IRODaT Registry data, www.irodat.org



Deceased donor KT

NZ: 20.9 pmp

Aus: 25.5 pmp

IRODaT Registry data, www.irodat.org

AOTEAROA NEW ZEALAND - ANZDATA SUMMARY 2021 DATA

TRANSPLANT

187
36 pmp

LIVE DONOR
85
2.3%
vs. 87 in 2020

NEW TRANSPLANTS
0% vs. 187 in 2020

DECEASED DONOR
102
2%
vs. 100 in 2020

ABOi Kidney	9
Non-Directed	7
Multi-organ Pancreas - Kidney - 5 Liver - Kidney - 3	8
Paired Kidney Exchange	12

96	Deceased after Brain Death
6	Deceased after Cardiac Death

(No. per Kidney Recipient)

448
ACTIVE PATIENTS ON DECEASED WAITING LIST

22.7 PER 100
NEW DECEASED TRANSPLANTS PER 100 PATIENTS ACTIVE ON LIST

OVER THE PAST YEAR

5452
vs. 5201 in 2020
1054 ppm (2021) vs. 1022 ppm (2020)
People being treated for Kidney Failure

3155
vs. 3004 in 2020
610 ppm (2021) vs. 590 ppm (2020)
Number of People living on Dialysis

2297
vs. 2199 in 2020
444 ppm (2021) vs. 432 ppm (2020)
Number of People living with a Transplant

708
vs. 710 in 2020
137 ppm (2021) vs. 139 ppm (2020)
People who Started Kidney Replacement therapy

DIALYSIS

669
vs. 523 in 2020

PERITONEAL DIALYSIS **PD**
241
vs. 268 in 2020
47 pmp (2021)

NEW DIALYSIS PATIENTS

HAEMO-DIALYSIS **HD**
428
vs. 403 in 2020
83 pmp (2021)

PREVALENCE
Total Patients on HD vs. PD

HD
1953 FACILITY HAEMODIALYSIS
392 HOME HAEMODIALYSIS

PD
473 AUTOMATIC PD (APD)
337 CONTINUOUS AMBULATORY PD (CAPD)

WHERE DO WE DO DIALYSIS ?

1202 232 pmp — HOME vs. FACILITY — **1953** 378 pmp

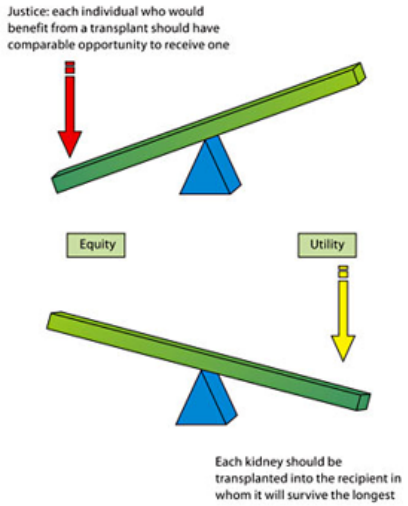
ANZ DATA AUSTRALIA & NEW ZEALAND DIALYSIS & TRANSPLANT REGISTRY

- Organs scarce resource
- Eligibility criteria
- Development and evolution of national kidney allocation systems

Karger

From: **The Challenge of Doing What Is Right in Renal Transplantation: Balancing Equity and Utility**

Nephron Clinical Practice. 2008;111(1):c62-c68. doi:10.1159/000180121



Date of Download: 8/22/2023

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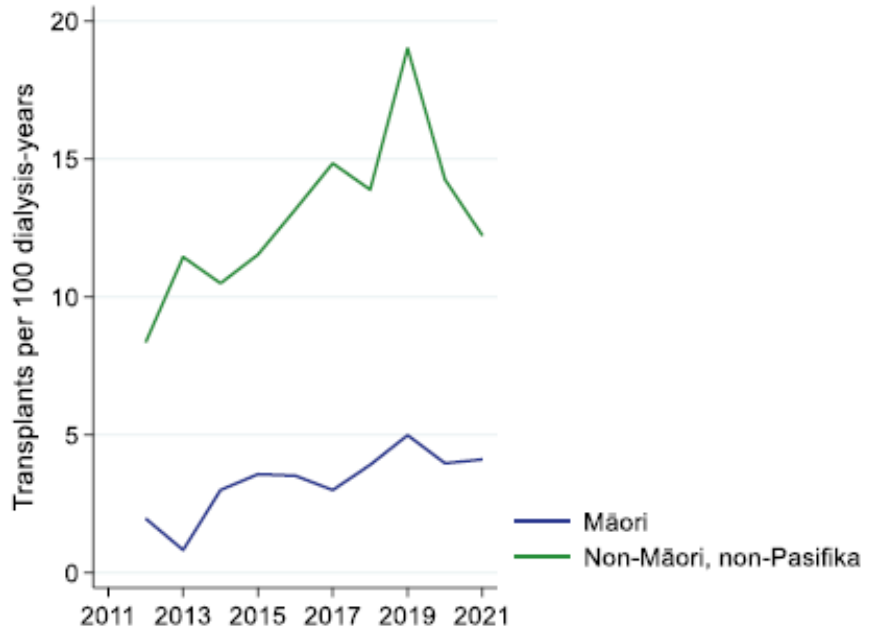
- Transplant inequity
- Ethnicity
- Rurality
- Socioeconomic

- Te Tiriti O Waitangi

Figure 11.13 - Transplant Rate of Dialysed Patients by Ethnicity 2012-2021 - Aotearoa New Zealand, Patients Aged 15-64



ANZDATA Registry. 45th Report, Chapter 11:Kidney failure in Māori patients in Aotearoa New Zealand. Adelaide 2022.

Values, Perspectives, and Experiences of Indigenous Māori Regarding Kidney Transplantation

Methods

Aotearoa/
New Zealand

Qualitative
interview study

Sep-Dec 2020

In-depth interviews
30-60 minutes

Data analysed by
thematic analysis

Participants

N = 40

- 4 donors
- 8 recipients
- 10 waitlisted
- 9 interested but not waitlisted
- 1 not interested in transplant
- 8 family members
- Aged between 26 and 82 years

Emerging Themes

Actively seeking kidney transplants
Strongly motivated by benefits, issues pursuing donor, uncertainties of deceased donor list, gratitude and agency in receiving/donating

Evolving attitudes toward traditional values and practices
Pragmatism around traditional values and practices, rationalizing transplant and traditional values and practices

Being confronted by interpersonal and systemic racism
Experiencing interpersonal racism, weight criteria as discriminatory, identifying health system gaps, disease discrimination

Poor information and communication
Inadequate information provision, lack of transparency for patients around renal service provision, importance of trusting relationships

Challenged by social determinants of health
Financial and time constraints limiting preparation for transplant, impact of rural living

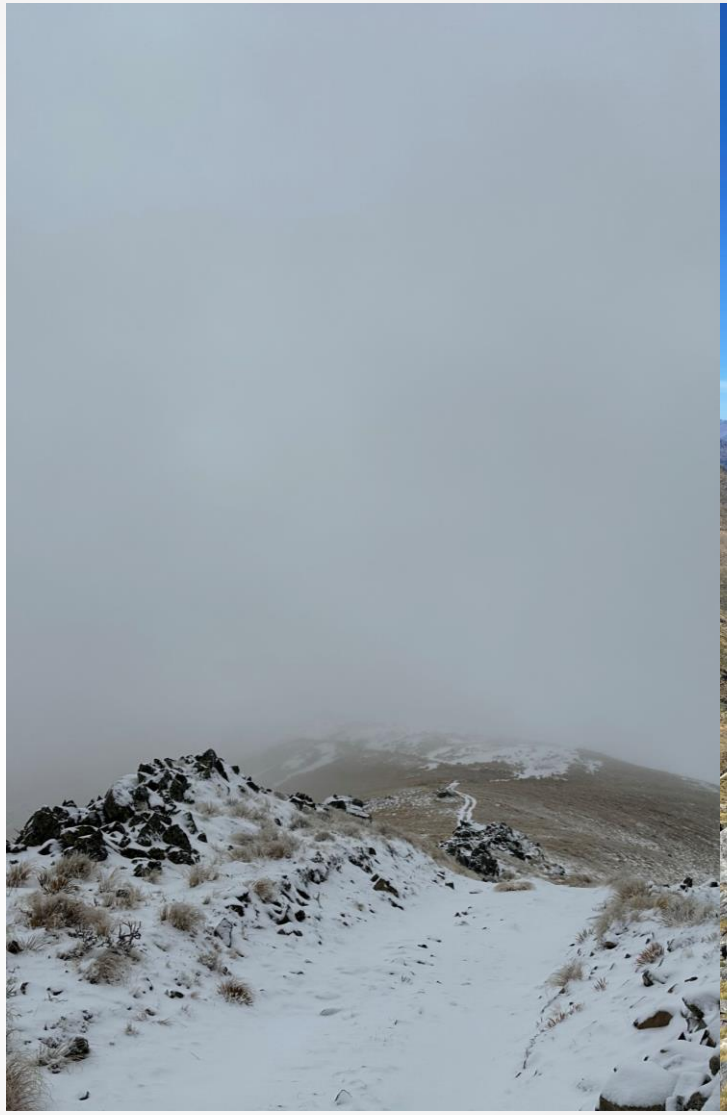
CONCLUSION: Māori participants were highly motivated to seek kidney transplantation. Determinants of health, racism, and lack of information and transparency decreased access to transplantation.

Rachael C. Walker, Sally Abel, Suetonia C. Palmer, et al

@AJKDonline | DOI: 10.1053/j.ajkd.2021.12.010

AJKD
AMERICAN JOURNAL OF KIDNEY DISEASES

- Differing journeys
- Unclear end destination
- Lots of obstacles



ASSET
KIDNEY RESEARCH
HE RAWA RARAUNGA HAUORA MŌ NGĀ TĀNGATA O AOTEAROA

NIKTT
NATIONAL INDIGENOUS
KIDNEY TRANSPLANTATION
TASKFORCE

Te Whatu Ora
Health New Zealand

improving access ››› reducing inequity

One Day Renal Transplant Workup

'What do you need as a patient to thrive? … to simply have a chance at transplantation'.

He aha te mea nui o tea o?

He tāngata, he tāngata, he tāngata.

What is the most important thing in the world?

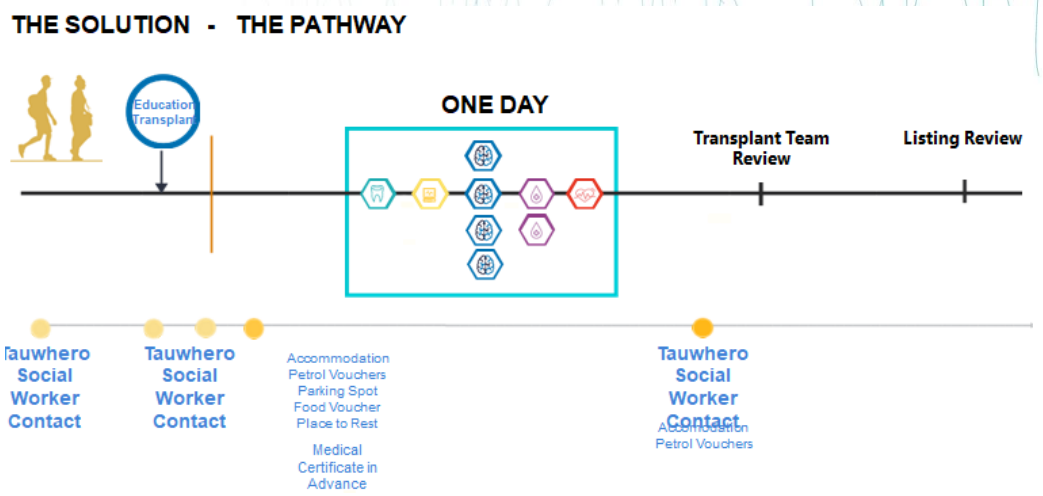
It is the people, it is the people, it is the people

The problem – inequity:

- **Significant waiting time** - months/years, 'unaccounted' waiting time
- Increased time **collecting co-morbidities**
- **Access** - multiple visits in multiple sites
- Coordination of **multiple specialty referrals**
- **Financial cost** to patient and whānau – loss of work, transport costs, parking, accommodation
- **Prioritisation** in a busy hospital with competing demands.

The solution:

- A **pathway** where **majority of investigations completed in a single day**
- A **single point of contact** – scheduling, coordination, communication
- **Manaaki patients** – Tauwhero/social work support
- **Reducing time** to transplant listing
- **Reducing hidden 'costs' + burdens**.



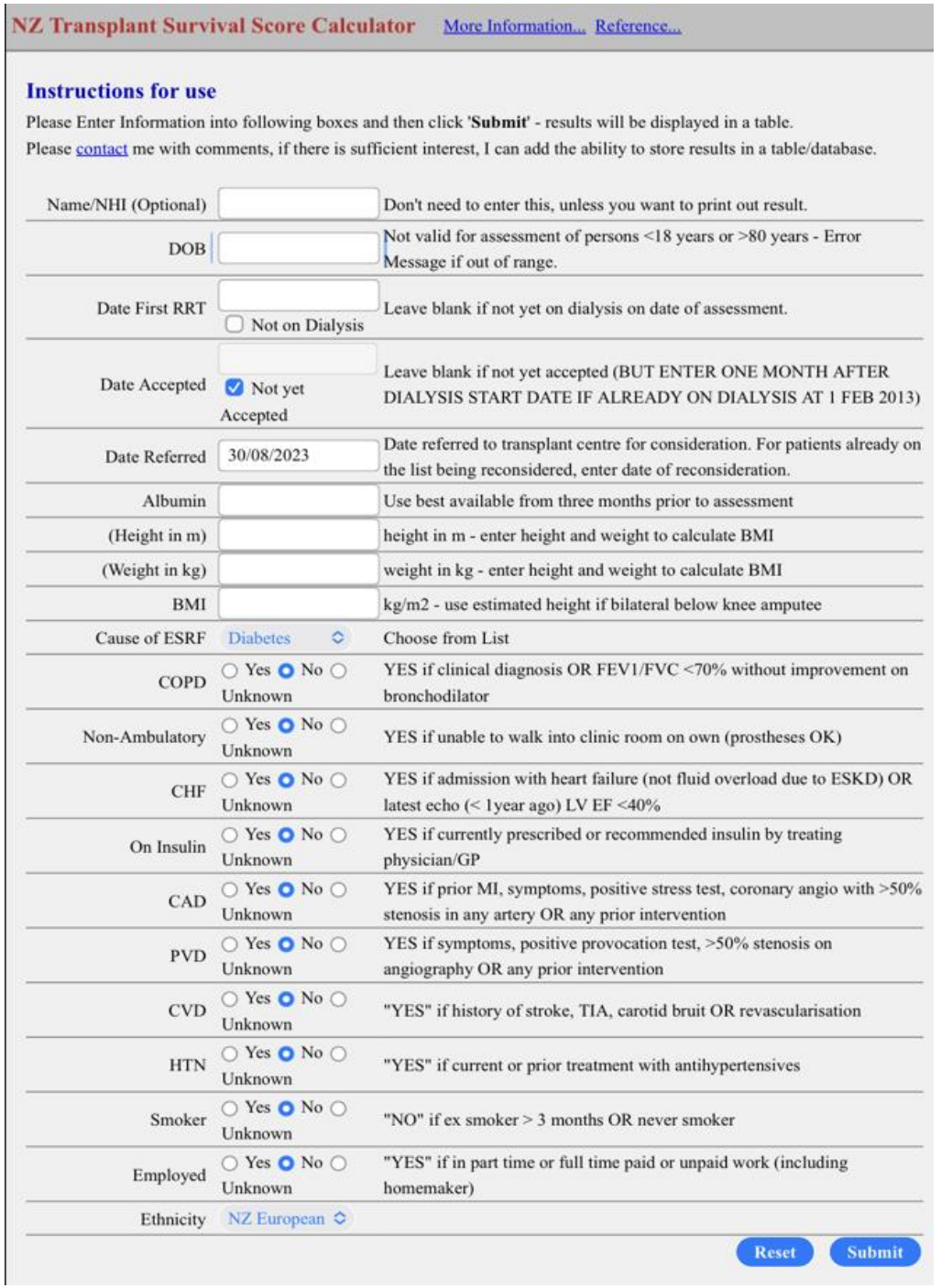
Timing

- Early- estimated GFR and trend
- Ideally at least 12 months before need for KRT
- If ESKD and on dialysis

- All patients with progressive CKD that are likely to reach ESKD should have an active decision on suitability for transplant

Differences

- Eligibility determination quite similar
- 5-year survival score estimator
- Variation in screening requirements
- Pre-emptive listing
- Allocation systems



NZ Transplant Survival Score Calculator More Information... Reference...

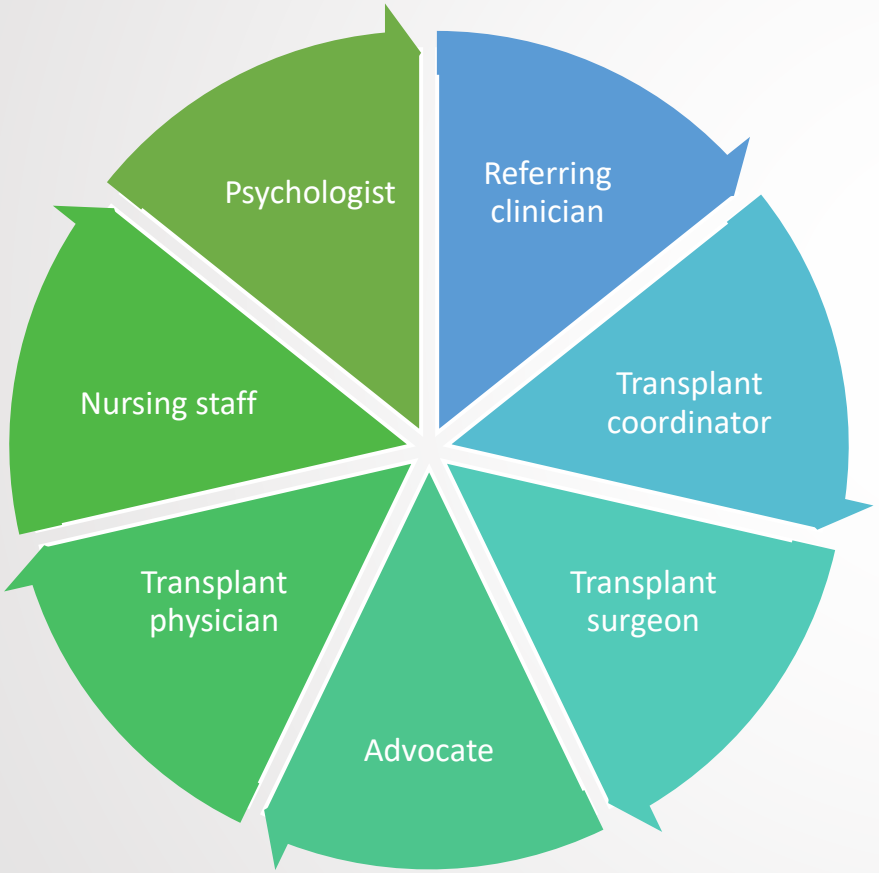
Instructions for use

Please Enter Information into following boxes and then click '**Submit**' - results will be displayed in a table.
Please contact me with comments, if there is sufficient interest, I can add the ability to store results in a table/database.

Name/NHI (Optional)		Don't need to enter this, unless you want to print out result.
DOB		Not valid for assessment of persons <18 years or >80 years - Error Message if out of range.
Date First RRT	Not on Dialysis	Leave blank if not yet on dialysis on date of assessment.
Date Accepted	Not yet Accepted	Leave blank if not yet accepted (BUT ENTER ONE MONTH AFTER DIALYSIS START DATE IF ALREADY ON DIALYSIS AT 1 FEB 2013)
Date Referred	30/08/2023	Date referred to transplant centre for consideration. For patients already on the list being reconsidered, enter date of reconsideration.
Albumin		Use best available from three months prior to assessment
(Height in m)		height in m - enter height and weight to calculate BMI
(Weight in kg)		weight in kg - enter height and weight to calculate BMI
BMI		kg/m2 - use estimated height if bilateral below knee amputee
Cause of ESRF	Diabetes	Choose from List
COPD	Yes No Unknown	YES if clinical diagnosis OR FEV1/FVC <70% without improvement on bronchodilator
Non-Ambulatory	Yes No Unknown	YES if unable to walk into clinic room on own (prostheses OK)
CHF	Yes No Unknown	YES if admission with heart failure (not fluid overload due to ESKD) OR latest echo (< 1year ago) LV EF <40%
On Insulin	Yes No Unknown	YES if currently prescribed or recommended insulin by treating physician/GP
CAD	Yes No Unknown	YES if prior MI, symptoms, positive stress test, coronary angio with >50% stenosis in any artery OR any prior intervention
PVD	Yes No Unknown	YES if symptoms, positive provocation test, >50% stenosis on angiography OR any prior intervention
CVD	Yes No Unknown	"YES" if history of stroke, TIA, carotid bruit OR revascularisation
HTN	Yes No Unknown	"YES" if current or prior treatment with antihypertensives
Smoker	Yes No Unknown	"NO" if ex smoker > 3 months OR never smoker
Employed	Yes No Unknown	"YES" if in part time or full time paid or unpaid work (including homemaker)
Ethnicity	NZ European	

Reset Submit

Individual risk benefit determination



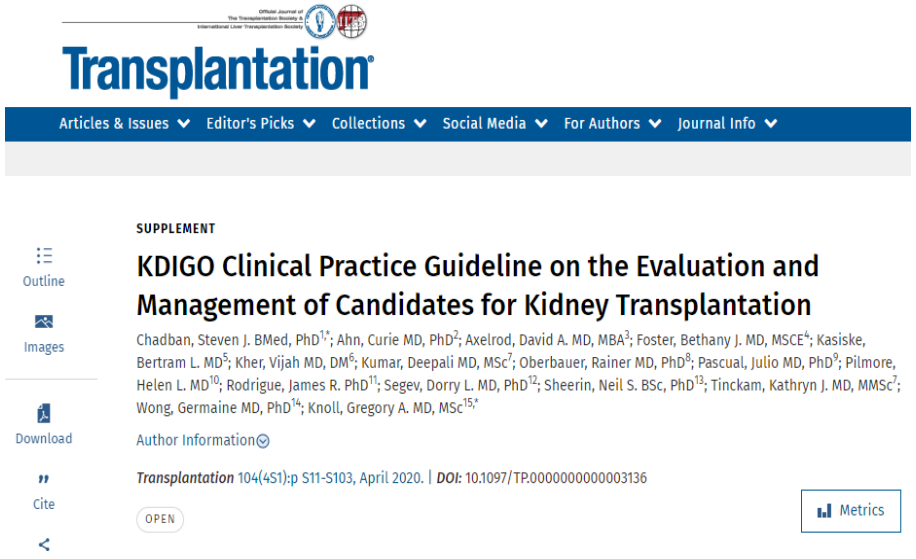
- Perioperative mortality
- Patient survival
- Graft survival

Guidelines on evaluation KT recipients

TSANZ
The Transplantation Society of Australia and New Zealand

Clinical Guidelines for Organ Transplantation from Deceased Donors

Version 1.11 – May 2023



Transplantation

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SUPPLEMENT

KDIGO Clinical Practice Guideline on the Evaluation and Management of Candidates for Kidney Transplantation

Chadban, Steven J. BMed, PhD[1,*]; Ahn, Curie MD, PhD[2]; Axelrod, David A. MD, MBA[3]; Foster, Bethany J. MD, MSCE[4]; Kasiske, Bertram L. MD[5]; Kher, Vijah MD, DM[6]; Kumar, Deepali MD, MSc[7]; Oberbauer, Rainer MD, PhD[8]; Pascual, Julio MD, PhD[9]; Pilmore, Helen L. MD[10]; Rodrigue, James R. PhD[11]; Segev, Dorry L. MD, PhD[12]; Sheerin, Neil S. BSc, PhD[13]; Tinckam, Kathryn J. MD, MMSc[7]; Wong, Germaine MD, PhD[14]; Knoll, Gregory A. MD, MSc[15,*]

Author Information

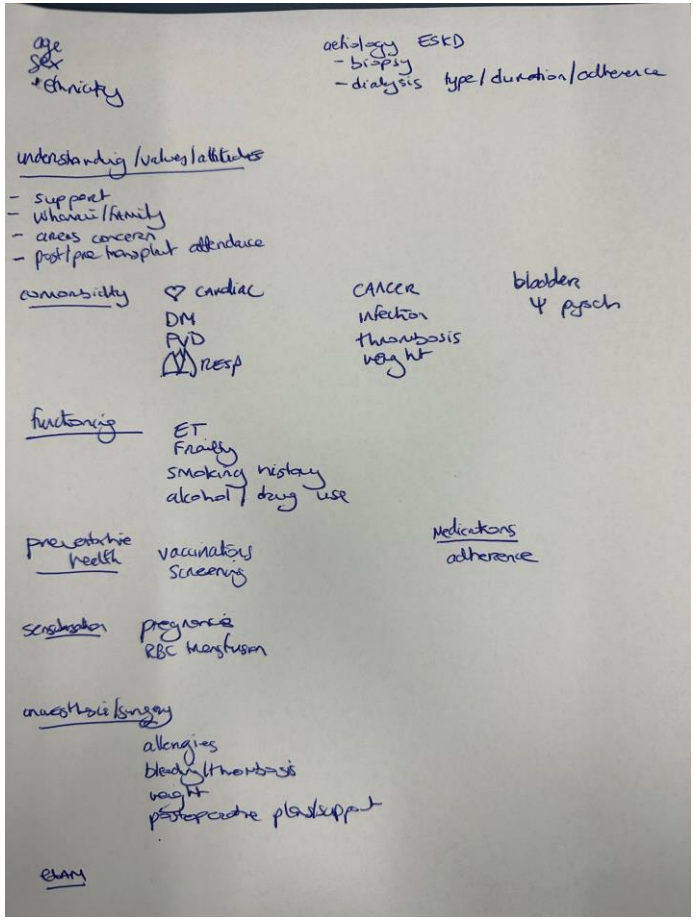
Transplantation 104(4S1):p S11-S103, April 2020. | **DOI:** 10.1097/TP.0000000000003136

OPEN

Metrics

Main factors to consider

- Patient survival
  - Age/Frailty
  - Comorbidity
- Graft survival
  - Recurrence
  - Adherence
- Technical surgical aspects
- Values/Attitudes
- Screening tests

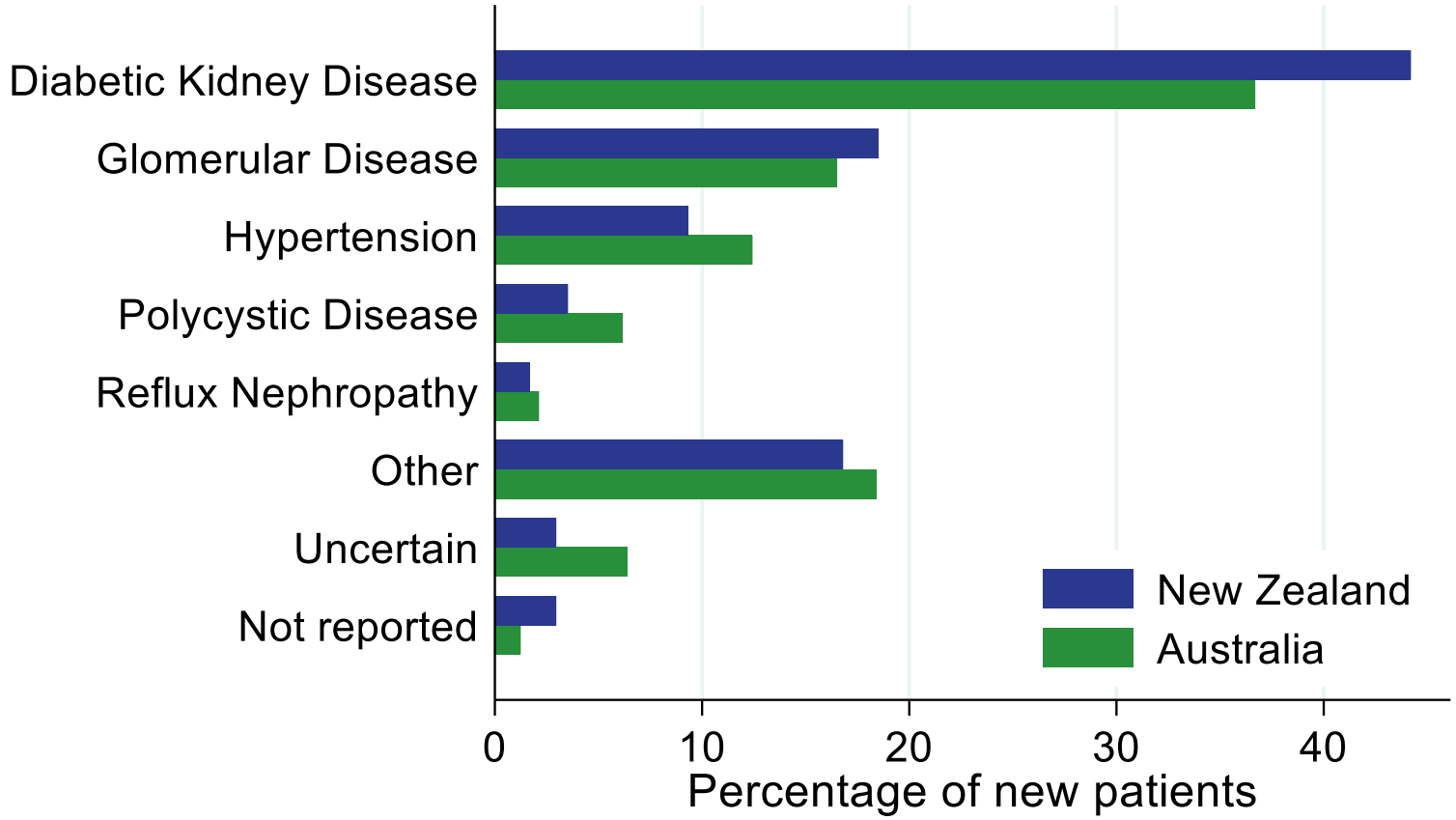


Clinical Scenario

- 54 year old Māori
- ESKD due to Type 2 Diabetes, Non smoker
- Dialysis dependent 6 months
- Large abdominal circumference and WHR, recent further weight gain
- No angina, previous NSTEMI 5 years prior
- Very physical job, lives rurally > 2 hours from hospital
- No PAD symptoms, normal peripheral pulses
- No live donors

- What can we do to make successful transplant more likely?

Primary Cause of Kidney Disease of New Patients Commencing Kidney Replacement Therapy, 2021

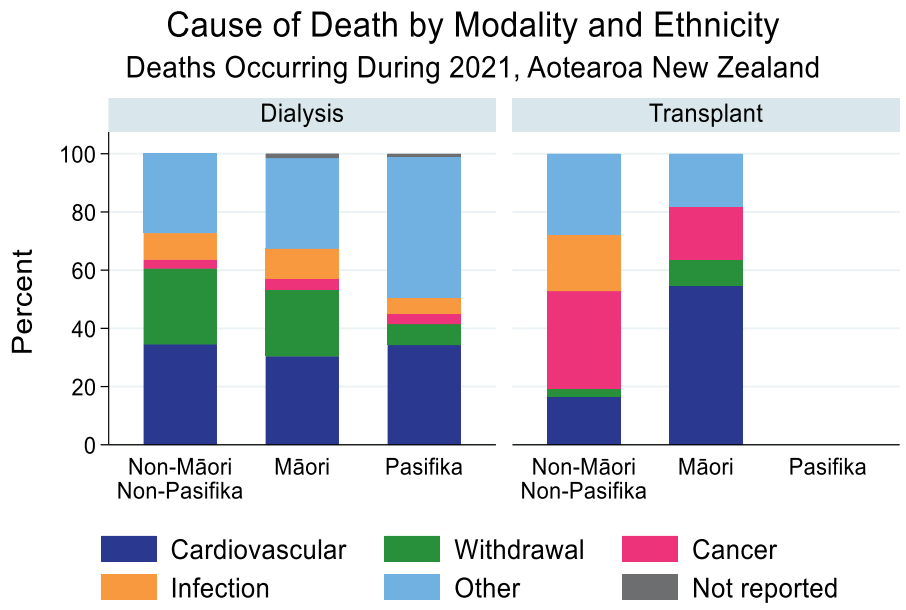


2022 ANZDATA Annual Report, Figure 9.3

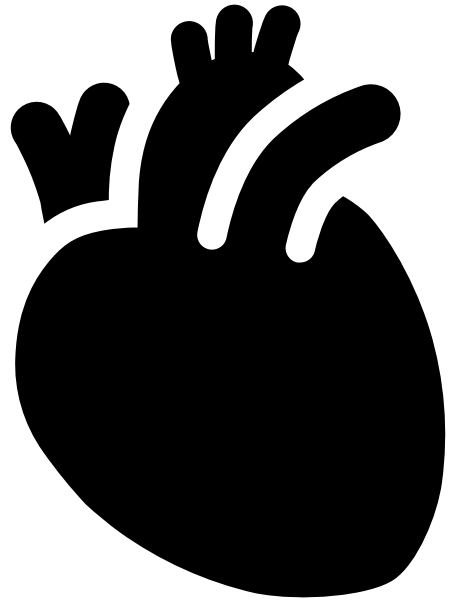
Clinical Scenario

- 54 year old Māori
- ESKD due to Type 2 Diabetes, Non smoker
- Dialysis dependent 6 months
- Large abdominal circumference and WHR, recent further weight gain
- **No angina, previous NSTEMI 5 years prior**
- Very physical job, lives rurally > 2 hours from hospital
- No PAD symptoms, normal peripheral pulses
- No live donors

Heart Disease and KT

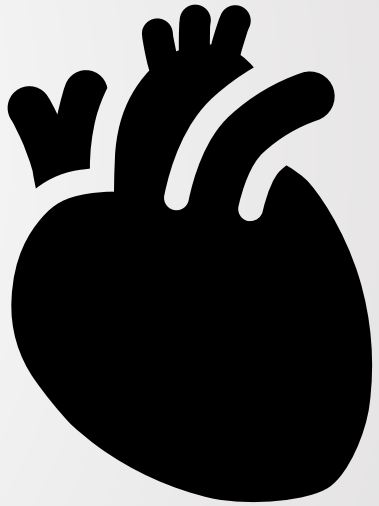


2022 ANZDATA Annual Report, Figure 9.38

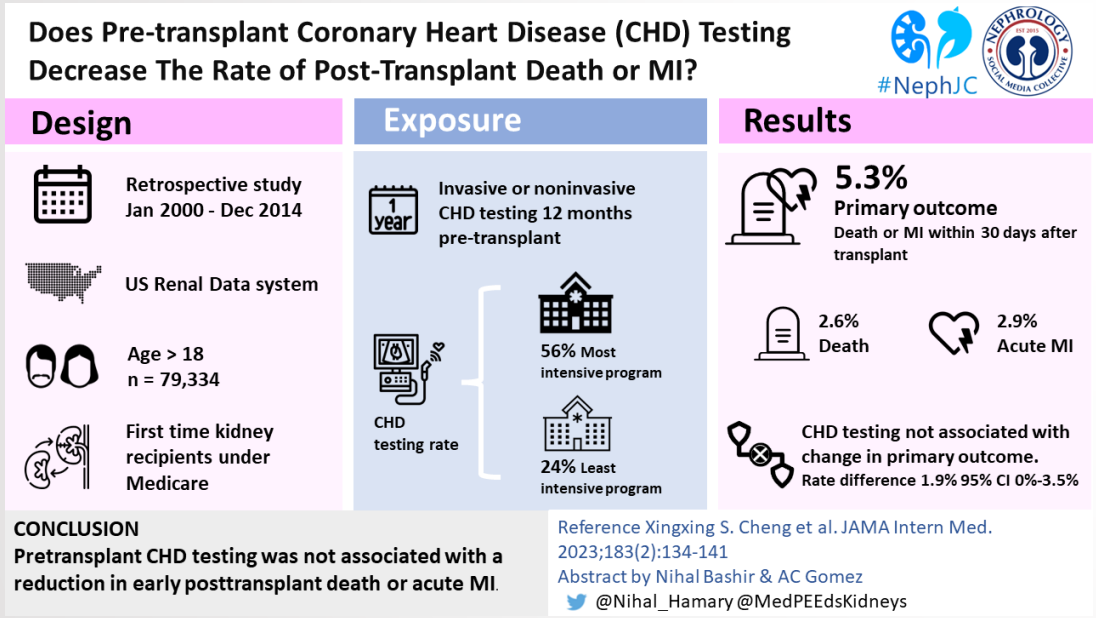


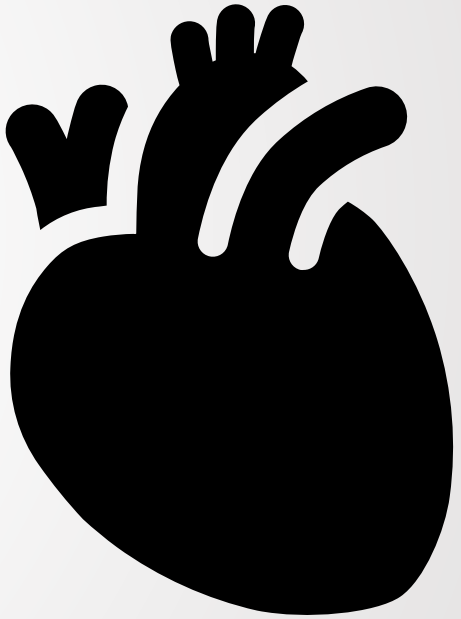
Cardiac Screening

- History, physical examination and ECG absolute requirements
- +/- ECHO, Stress ECHO, Coronary angiogram
- Symptoms
- Understand local transplant unit requirements



Heart Disease and KT





Clinical Scenario

- 54 year old Māori
- ESKD due to Type 2 Diabetes, Non smoker
- Dialysis dependent 6 months
- **Large abdominal circumference and WHR, recent further weight gain**
- No angina, previous NSTEMI 5 years prior
- Very physical job, lives rurally > 2 hours from hospital
- No PAD symptoms, normal peripheral pulses
- No live donors

Obese KTR outcomes

- Major issues with BMI
- 1 and 5 year survival benefit in KTR with BMI up to 40 was similar to those with “normal “ weight (Gill JS, Am J Transplant)
- UK study showed survival benefit with KT in all BMI bands up to BMI of 40 but less benefit at higher bands (Krishnan, Am J Transplant)
- Individualised assessment by team

https://doi.org/10.1093/ndt/gfab310
Advance Access publication date 12 November 2021

Management of obesity in kidney transplant candidates and recipients: A clinical practice guideline by the DESCARTES Working Group of ERA

Gabriel C. Oniscu[1], Daniel Abramowicz[2], Davide Bolignano[3], Ilaria Gandolfini[4], Rachel Hellemans[5], Umberto Maggiore[6], Ionut Nistor[7], Stephen O'Neill[8], Mehmet Sukru Sever[9], Muguet Koobasi[10] and Evi V. Nagler[11]

Clinical Scenario

- 54 year old Māori
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- Dialysis dependent 6 months
- Large abdominal circumference and WHR, recent further weight gain
- No angina, previous NSTEMI 5 years prior
- Very physical job, lives rurally > 2 hours from hospital
- No PAD symptoms, normal peripheral pulses
- **No live donors**

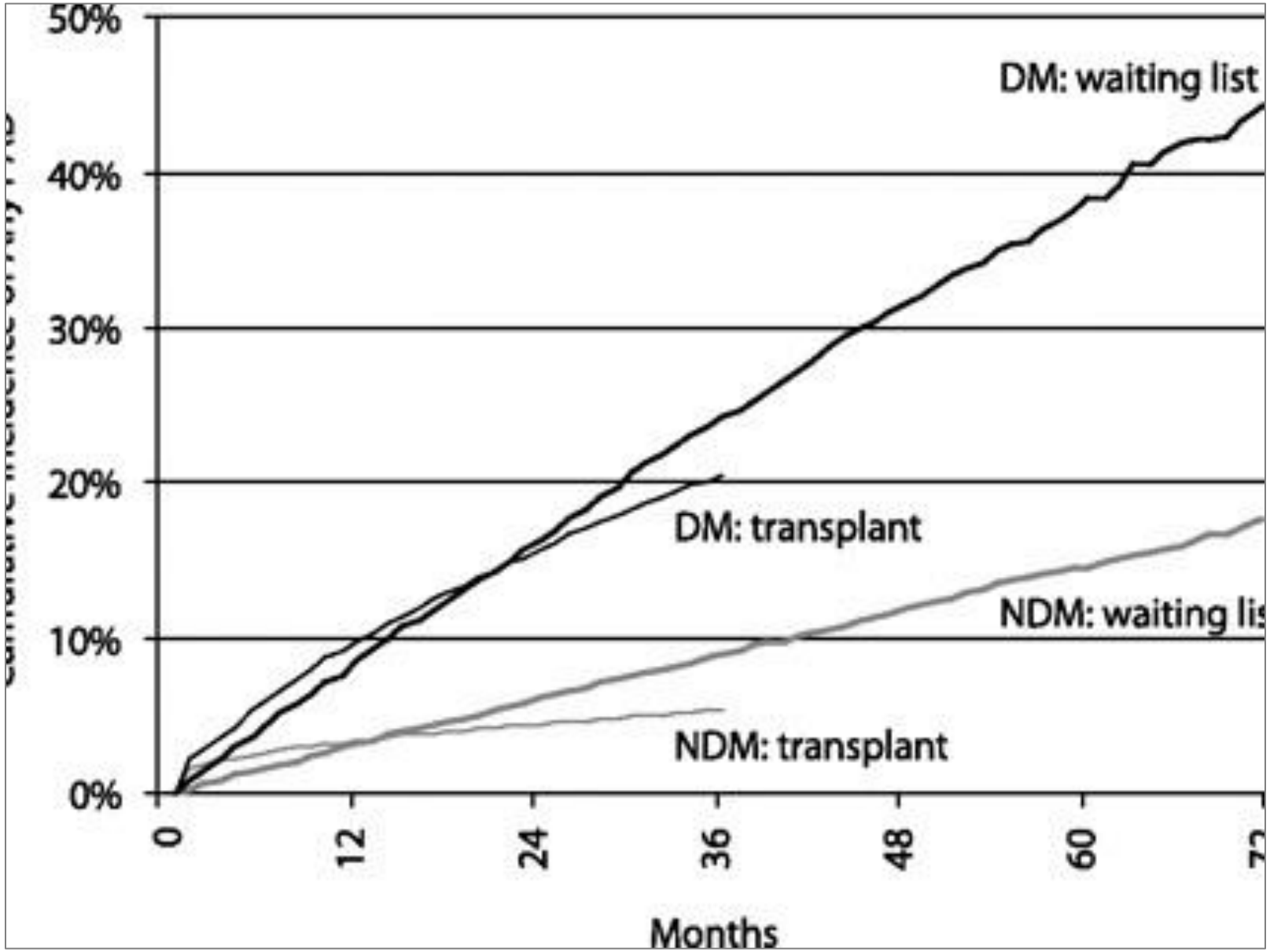
Donor Source by Ethnicity

Figure 5: Percentage of Kidney Transplants from Live and Deceased Donor Source by Ethnicity, 2019-2021

Kidney transplant activity New Zealand 2021 Report, National Renal transplant service,

Clinical Scenario

- 54 year old Māori
- ESKD due to Type 2 Diabetes, Non smoker
- Dialysis dependent 6 months
- Large abdominal circumference and WHR, recent further weight gain, BMI 40kg/m2
- No angina, previous NSTEMI 5 years prior
- Very physical job, lives rurally > 2 hours from hospital
- **No PVD symptoms, normal peripheral pulses**
- No live donors



Peripheral Arterial Disease and Renal Transplantation

Snyder, Jon J.; Kasiske, Bertram L.; Maclean, Ross

Journal of the American Society of Nephrology17(7):2056-2068, July 2006.

doi: 10.1681/ASN.2006030201

Cumulative incidence of peripheral arterial disease (PAD). DM, diabetes mellitus; NDM, no diabetes mellitus.

Wolters Kluwer

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Peripheral vascular disease and KT

- Pre-existing PAD high risk population

- Survival benefit for KT over waitlisting (HR 0.44, $p<0.001$ (1)

- Review clinical history, pulses
- Non invasive testing +/- intervention
- Transplant centre preference

Laskowski et al, Clin Transplant, 2016May:30(5):545-55

Clinical scenario

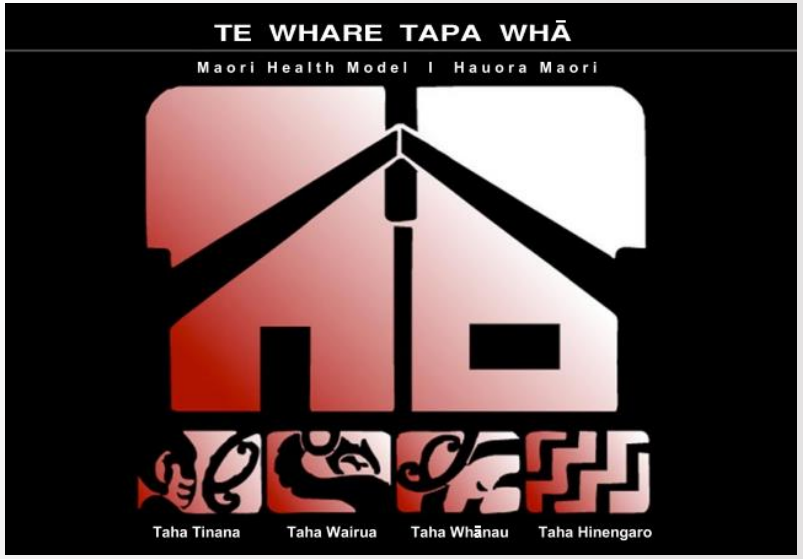
- 43 year old Māori
- Anti GBM disease
- Now established on dialysis 6 months (normal titre)
- Current smoker (Tobacco- 20 pack year)
- Challenges with clinic attendance at times but no admissions with fluid overload
- Single mother, 4 kids
- Whanau support

- What do you think we need to do to improve chances of successful KT ?

Clinical scenario

- 43 year old Māori
- Anti GBM disease
- Now established on dialysis 6 months (normal titre)
- Current smoker (Tobacco- 20 pack year)
- **Challenges with clinic attendance at times but no admissions with fluid overload**
- **Single mother, 4 kids**
- Whanau support

- Holistic approach
- Systems and structures ideally to support and improve each aspect of health
- Support through longitudinal assessment



Clinical scenario

- 43 year old Māori
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- Now established on dialysis 6 months (normal titre)
- **Current smoker (Tobacco- 20 pack year)**
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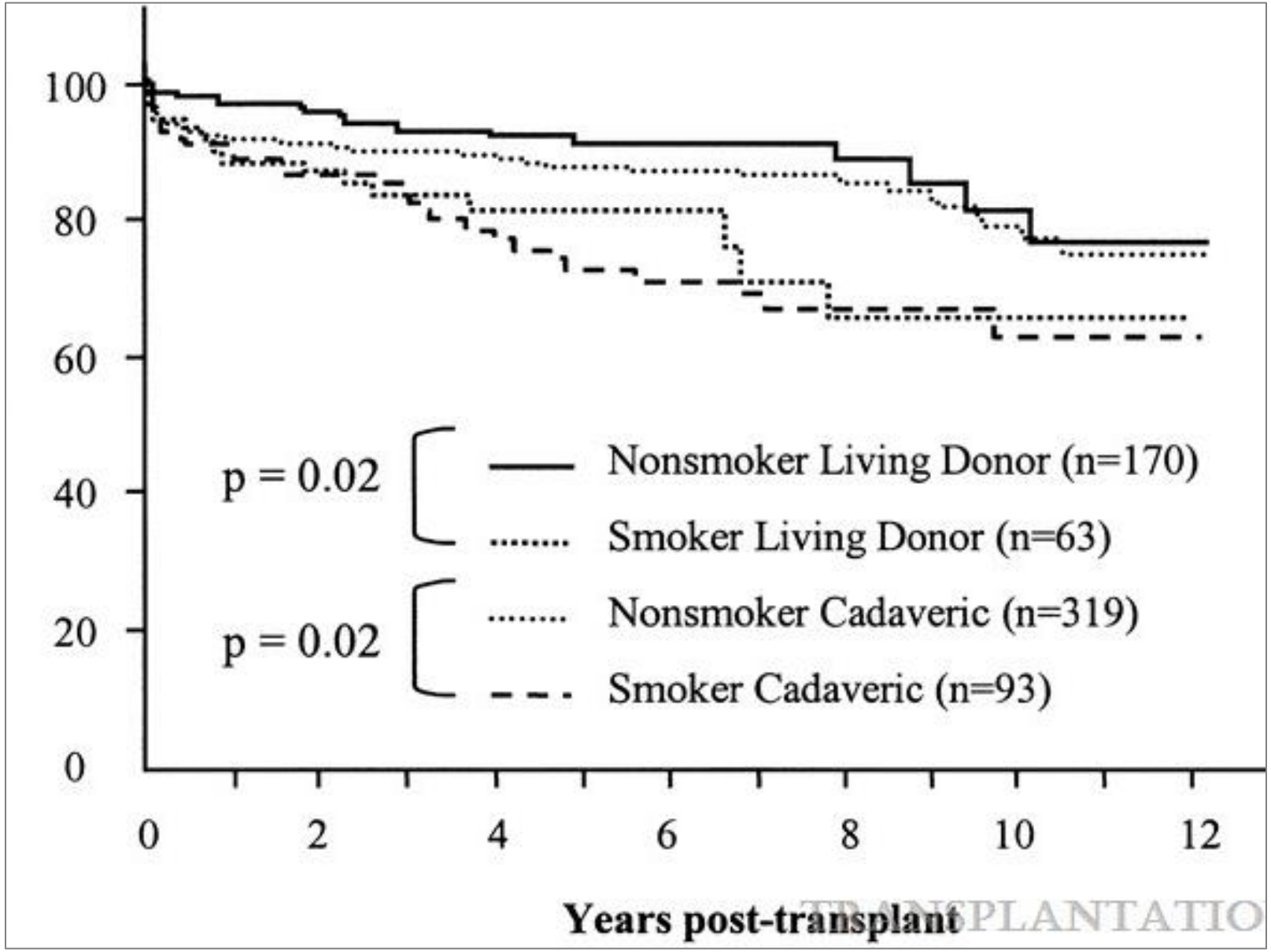
- Single mother, 4 kids
- Whanau support

Figure 2



EXCESS RISK OF RENAL ALLOGRAFT LOSS ASSOCIATED WITH CIGARETTE SMOKING

Sung, Randall S.; Althoen, Morgan; Howell, Terese A.; Ojo, Akinlolu O.; Merion, Robert M.

Transplantation71(12):1752-1757, June 27, 2001.

doi:

Kaplan-Meier death-censored kidney allograft survival estimates of patients who were smokers or nonsmokers at transplant evaluation split by donor source (cadaveric vs. living donor).

Wolters Kluwer

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Cancer and KT

- Age and sex appropriate as general population screening
- CXR
- 30 pack year- CT chest

- Not all cancers contraindication for waitlisting if curatively treated
  - Superficial non melanomatous skin
  - Prostate (Gleason <7)
  - RCC (<3cm)
  - Superficial bladder cancer
- KDIGO Guideline Table on recommended waiting times between cancer remission and KT
- Oncologist opinion

Age and KT

- Aging population
- Life expectancy
- Comorbidity
- Frailty

Received: 13 April 2018 | Revised: 20 July 2018 | Accepted: 8 August 2018

DOI: 10.1111/ajt.15110

ORIGINAL ARTICLE

AJT

Benefits of kidney transplantation for a national cohort of patients aged 70 years and older starting renal replacement therapy

Camille Legeai[1] | Roland M. Andrianasolo[1] | Olivier Moranne[2,3] | Renaud Snanoudj[4,5] | Maryvonne Hourmant[6] | Marc Bauwens[7] | Joaquim Soares[8] | Christian Jacquelinet[9] | Cécile Couchoud[9] | Marie-Alice Macher[1]

Summary

- Consider early
- Inform and empower
- Active decision
- Equity

Thank you