

Tricontinental Analyses Of Kidney Transplant Outcomes From Three National Registries

Rachel Johnson



ORIGINAL ARTICLE

AJT

Kidney transplant graft outcomes in 379 257 recipients on 3 continents

Robert M. Merion^{1,2} | Nathan P. Goodrich¹ | Rachel J. Johnson³ |
Stephen P. McDonald^{4,5} | Graeme R. Russ^{4,5} | Brenda W. Gillespie² | David Collett³


Blood and Transplant



 **ustransplant.org**
Scientific Registry of Transplant Recipients

Background

- Evaluation of transplant outcomes across divergent national health care systems may create important opportunities to put local results into a global context
- Standardised comparisons of transplant outcomes in different parts of the world have been challenging to undertake and very infrequently performed

Aim

- Compare graft failure rates after kidney transplantation in the United States, the United Kingdom, and Australia/New Zealand using a commonly agreed cohort and definitions and patient-level data in a shared dataset

- **First kidney only transplants over 27 years: 1988-2014**
 - United States: Scientific Registry of Transplant Recipients
 - United Kingdom: NHS Blood and Transplant
 - Australia & New Zealand: Australia & New Zealand Dialysis & Transplant Registry
- **Follow-up to 2014**
- **Cox models for graft failure (inc. death with function)**
 - Short-term (1-year)
 - Long-term (conditional on 1-year survival)

Methods

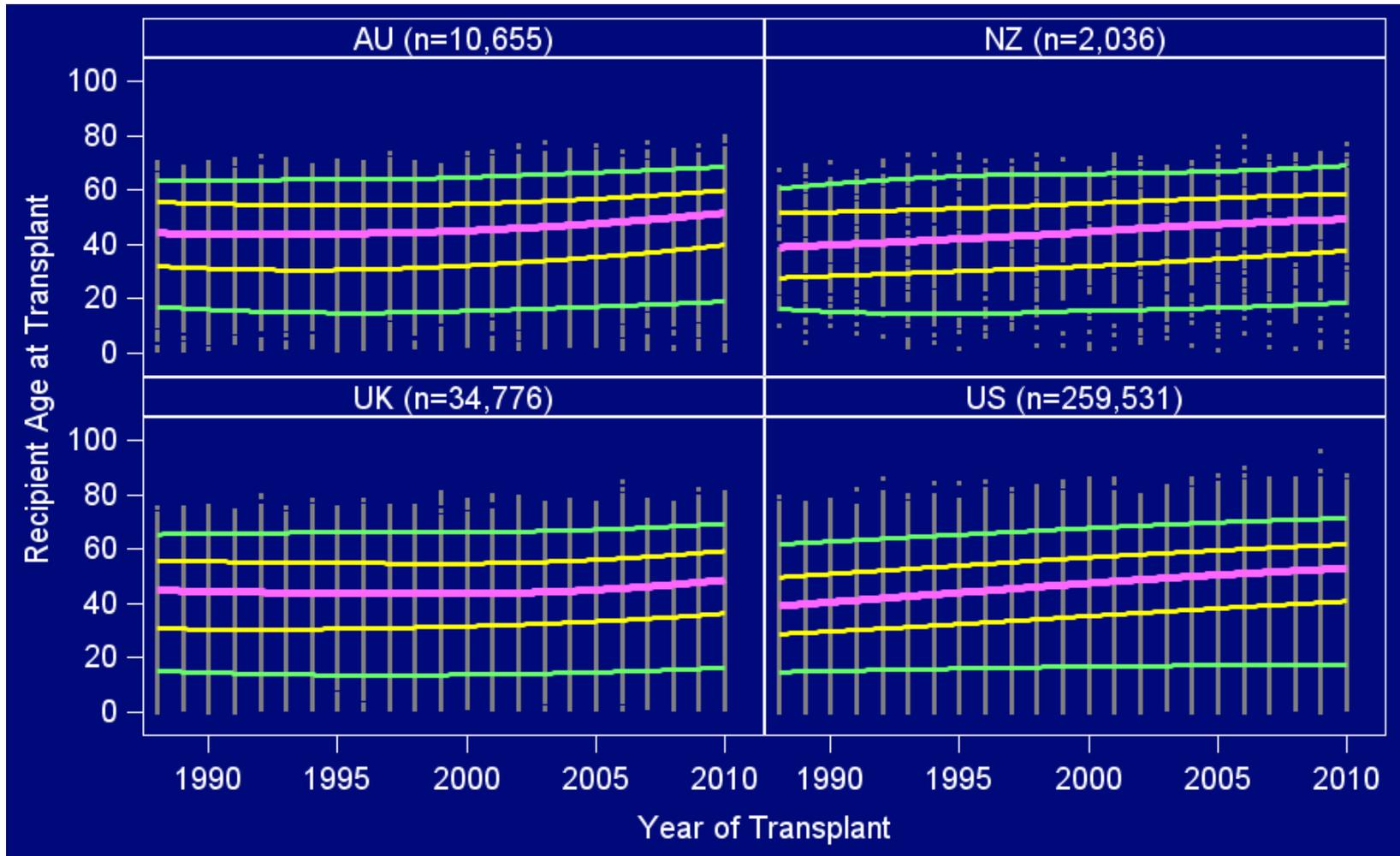
12 factors included in risk-adjustment:

- Recipient
 - age, sex, ethnicity, primary diagnosis
- Donor
 - age, sex, type (living/DBD/DCD), cause of death (trauma/other)
- Transplant
 - year of transplant, HLA-A+B+DR mismatches, ischaemia time

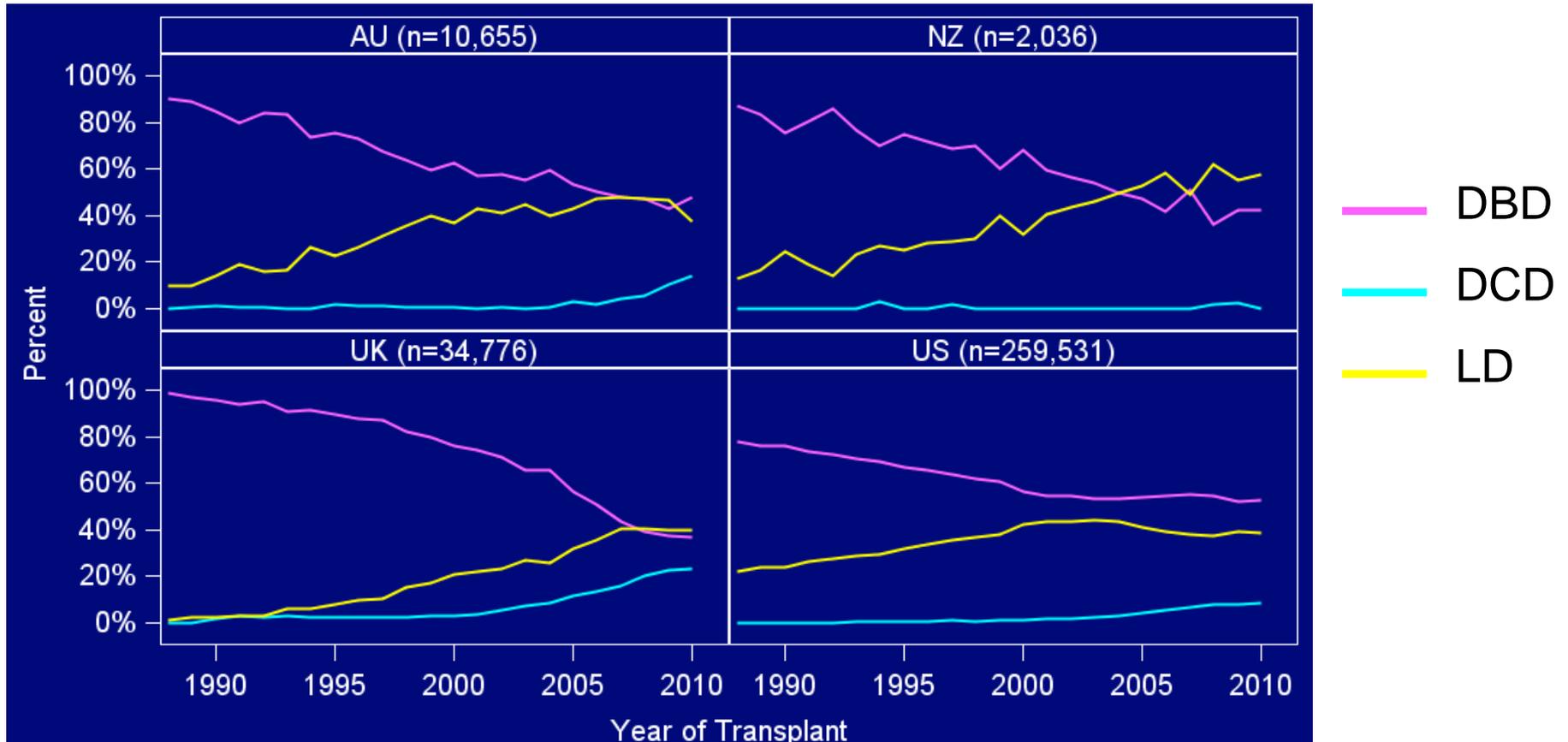
Characteristics of 379,257 Kidney Transplants

| | US | UK | AU | NZ |
|----------------------------|---------|--------|--------|-------|
| Transplants (n) | 318,423 | 44,781 | 13,582 | 2,471 |
| Living donor (%) | 36% | 25% | 33% | 40% |
| Recipient age (median yrs) | 48 | 46 | 48 | 46 |
| Recipient male (%) | 60% | 62% | 61% | 62% |
| Recipient non-white (%) | 44% | 19% | 16% | 29% |
| Diabetes mellitus (%) | 24% | 6% | 9% | 11% |

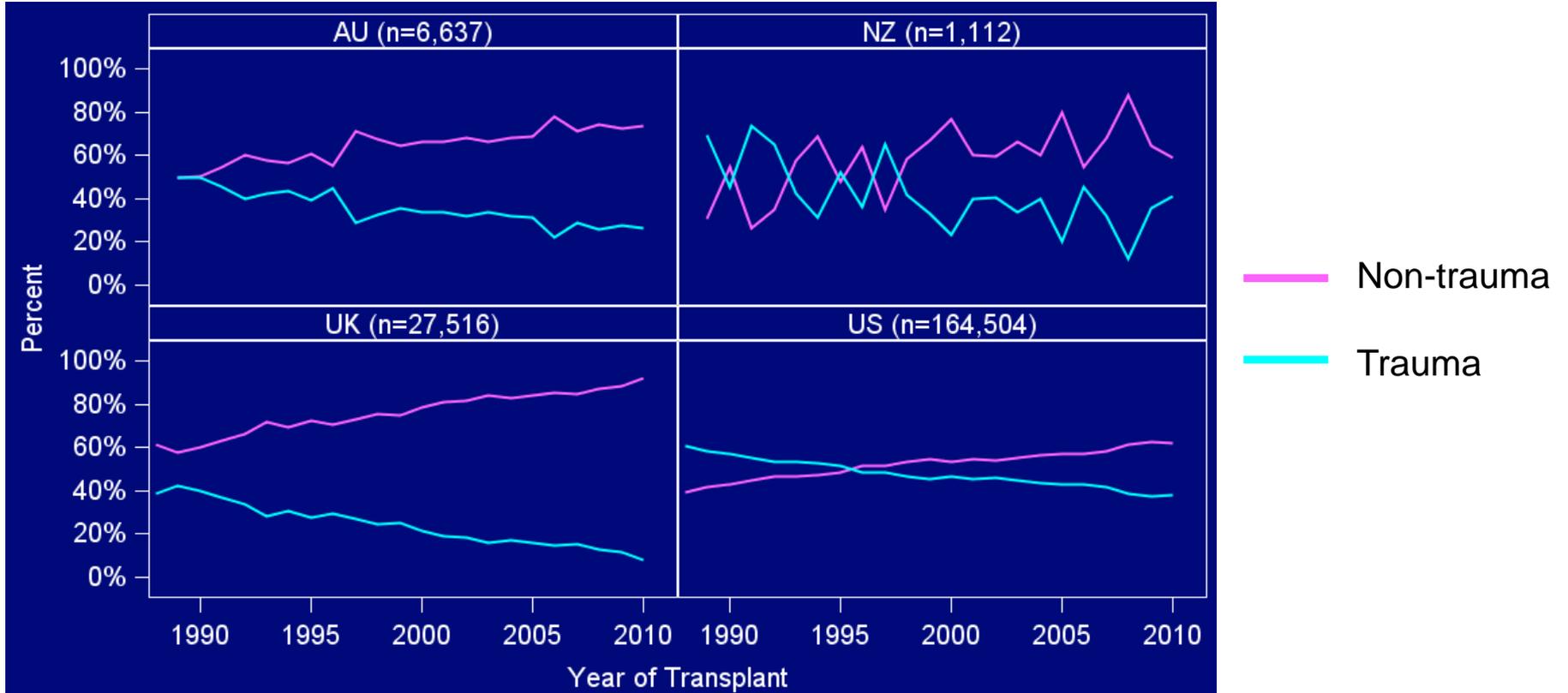
Recipient age



Donor source

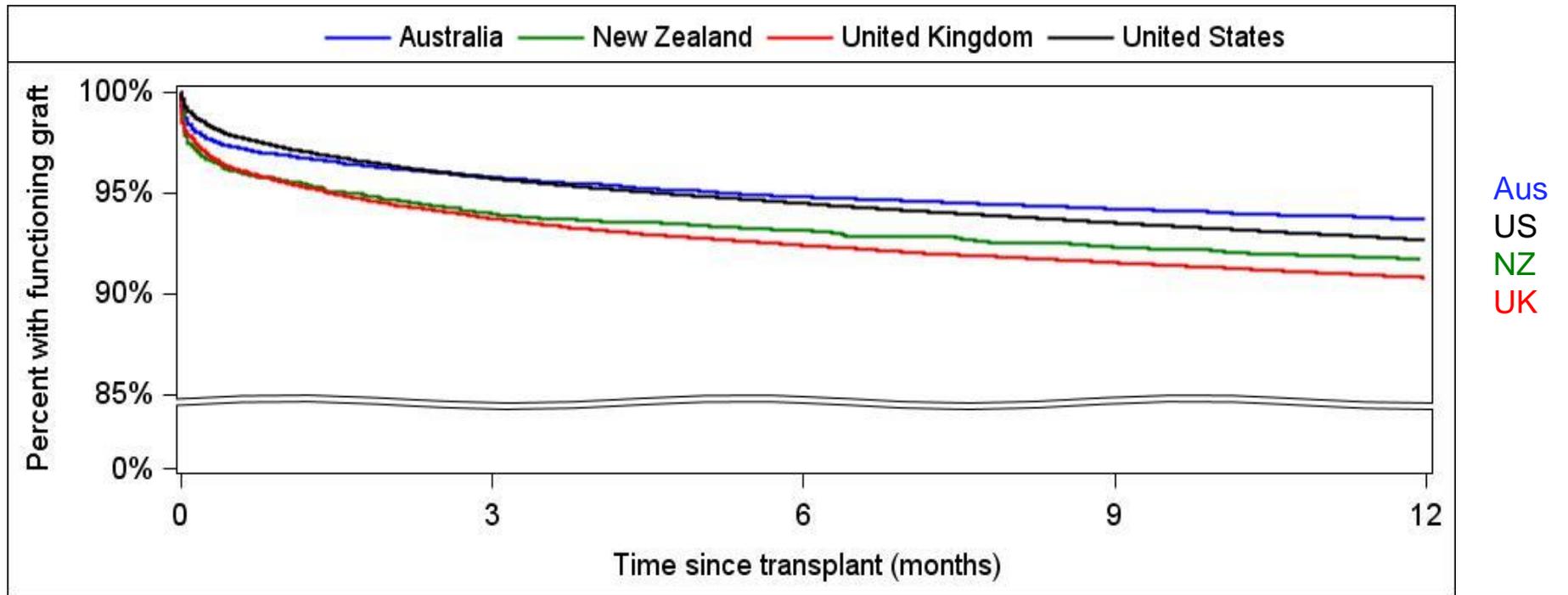


Cause of Death (Deceased Donor) *Blood and Transplant*



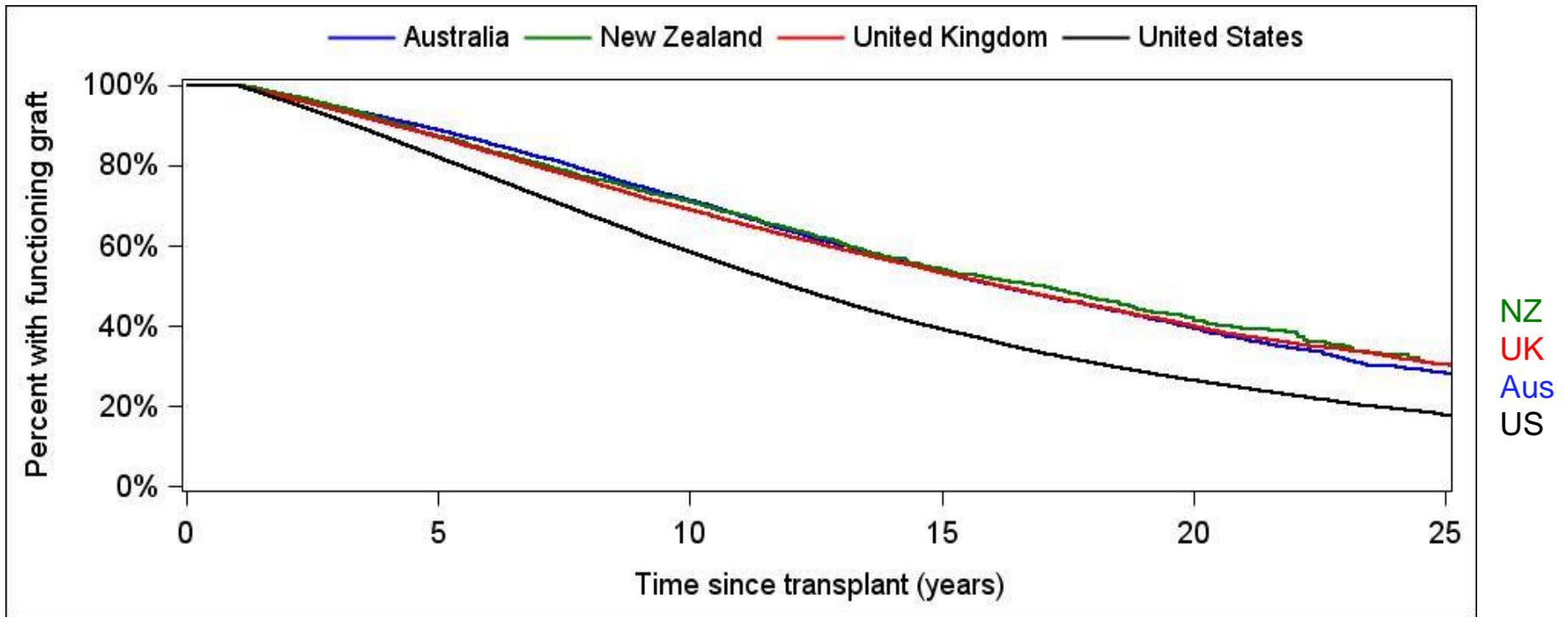
Deceased Donor Kidney Graft Survival

Short-term (12 months)

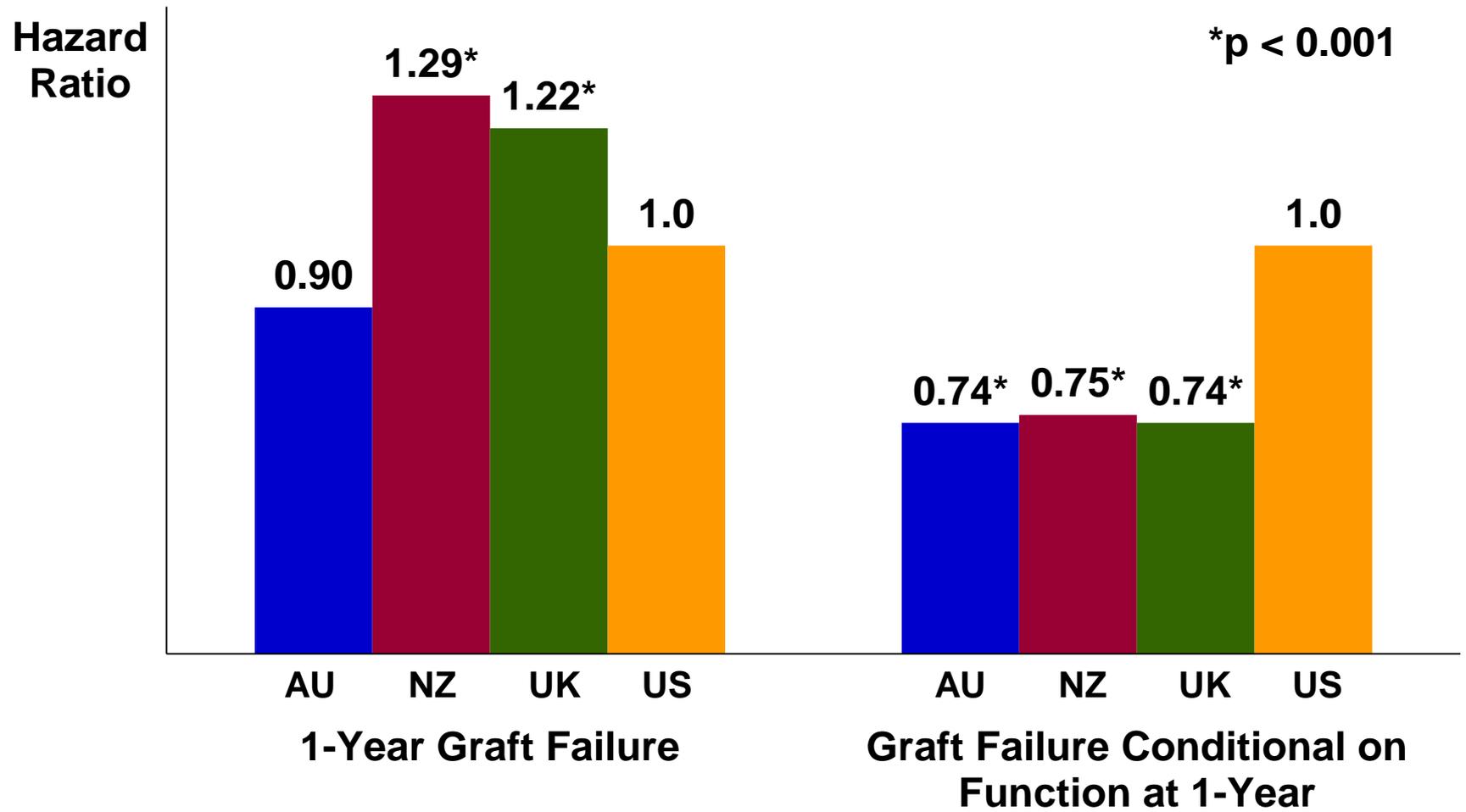


Deceased Donor Kidney Graft Survival

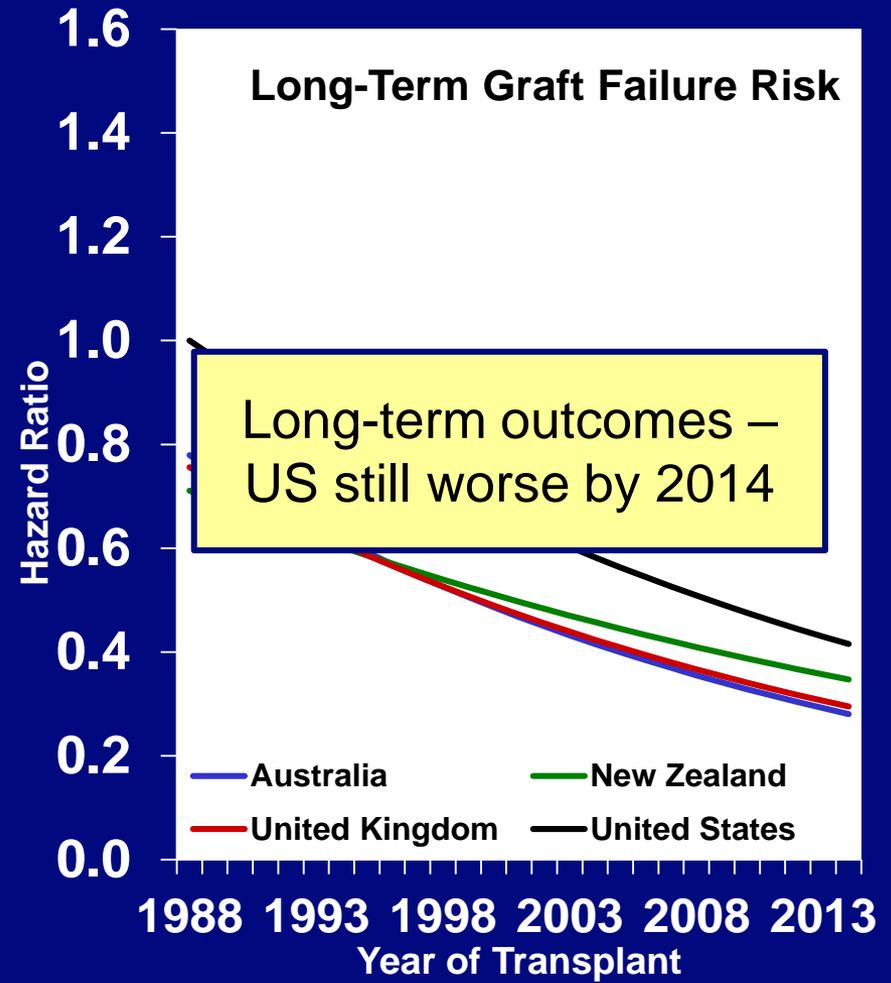
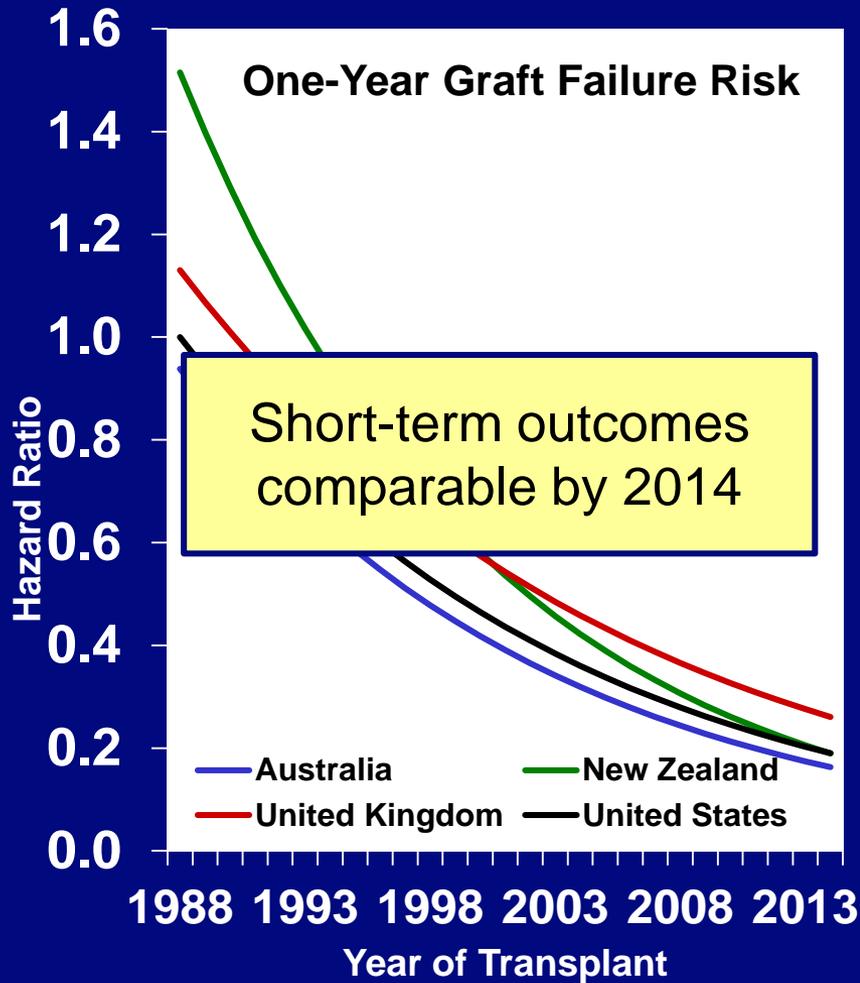
Long-term (conditional on function at 1 year)



Adjusted Risk of Graft Failure by Country



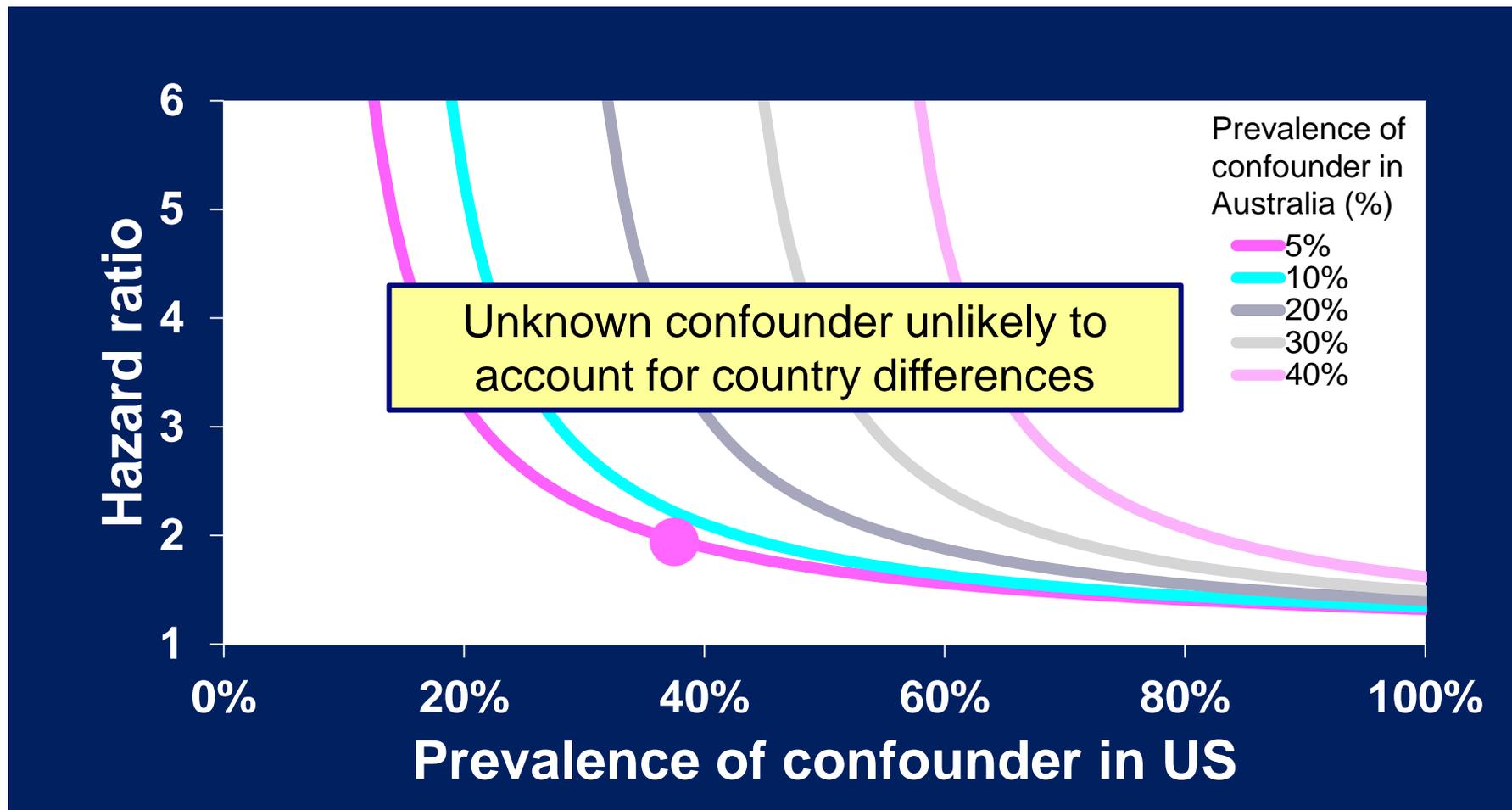
All Results Improved Over Time



Limitations

- Registry data may contain incomplete and/or inaccurate data
- Comorbidity burden may vary by country
- Time on dialysis prior to transplant (vintage) may vary by country
- Unmeasured factors, if present unequally across the four countries, could produce spurious associations of country with outcome

Is There a Mysterious Unmeasured Factor?



Discussion

- Comprehensive risk-adjusted analyses of data from three national registries highlight important differences in kidney transplant graft outcomes in US, UK, AUS and NZ
 - UK & NZ - poorer short-term outcomes – but equivalent by 2014
 - US poorer long-term outcomes throughout time period
- Are there disparate processes of care and/or practice patterns driving country-specific differences?
- Are differences in health care delivery systems and medical care financing disproportionately influencing long-term outcomes?

Acknowledgements

Transplant units and other hospital staff and Specialist Nurses for Organ Donation for provision of data to the UK Transplant Registry



@NHSBT_Stats



Yes I donate
ORGAN DONATION