RISKY MOVES AND CARDIOVASCULAR DISEASE IN NEW ZEALAND

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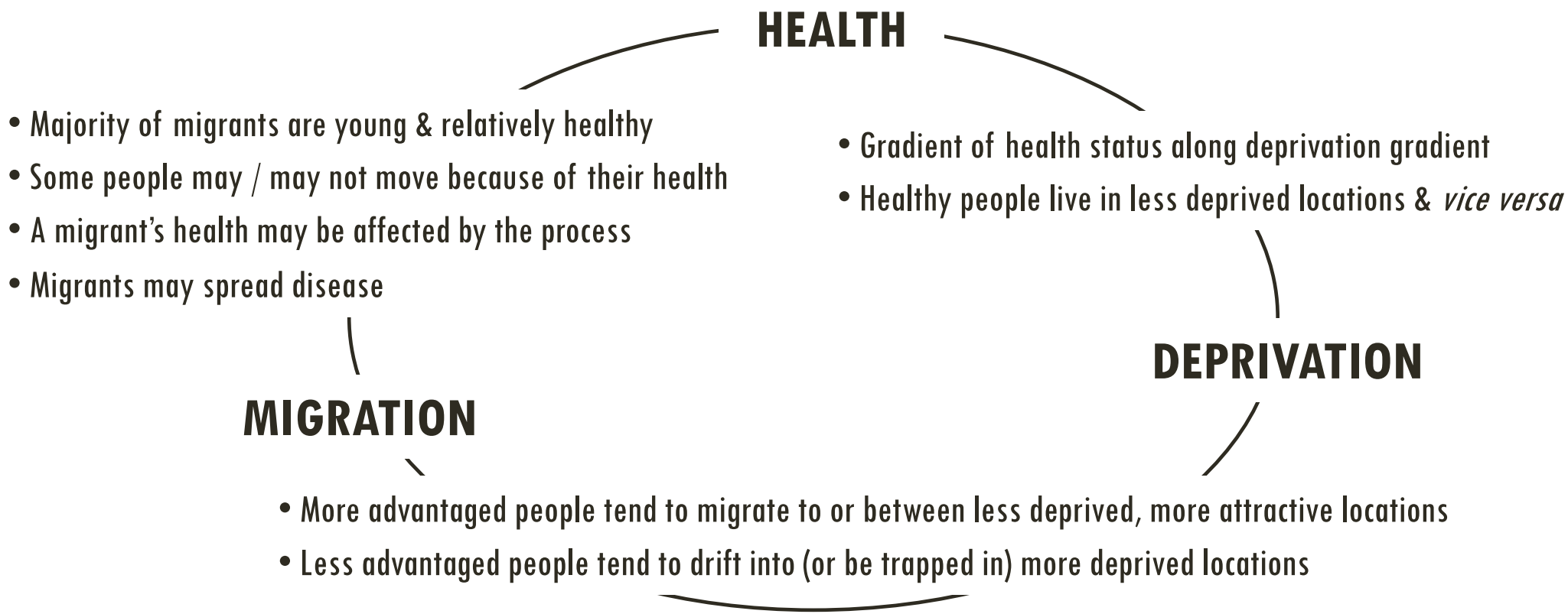
A. RESEARCH CONTEXT (I)



A. RESEARCH CONTEXT (II)

- Complex health-migration inter-relationships;
- Importance of ***deprivation mobility/change*** for migration-health relationship;
- Residential mobility an important **determinant** of CVD in Auckland (Exeter et al., 2015);
- Cardiovascular disease (CVD) one of the leading causes of death globally, marked variations between ethnic groups;
- Differences in migration patterns between ethnic groups in New Zealand
- **Relationship with ethnic inequalities in CVD?**

B. DATA

- Enrolment with Primary Health Organisation
- Pharmaceutical Dispensing Claims
- Hospital Discharges
- Mortality

→

Patient records anonymously linked with *National Health Index (NHI)* number

n = 94-97% population

→

VIEW Dataset

Outcomes (e.g.)
- Lipid testing
- Diabetes
- Hospitalisations
- Medication dispensing

Demographics
- Age
- Gender
- Ethnicity
- NZDep06

Geographies
- Meshblock
- Area Unit
- Electorate
- District Health Board

→

CVD and Migration Dataset

Eligible if…

- Aged 30-84
- Complete socio-demographic / geographic information
- No prior history of CVD

Study Period

- 36 calendar quarters 01.01.2006-30.06.2014

C. METHODS

Cardiovascular Disease – Residential Mobility – Deprivation

ASSOCIATIONS

- Binary logistic regression– total population & stratified by ethnic group
- Compare risk of CVD for moves with that for stayers
- Ethnic differences?
- Differences by nature of the move?

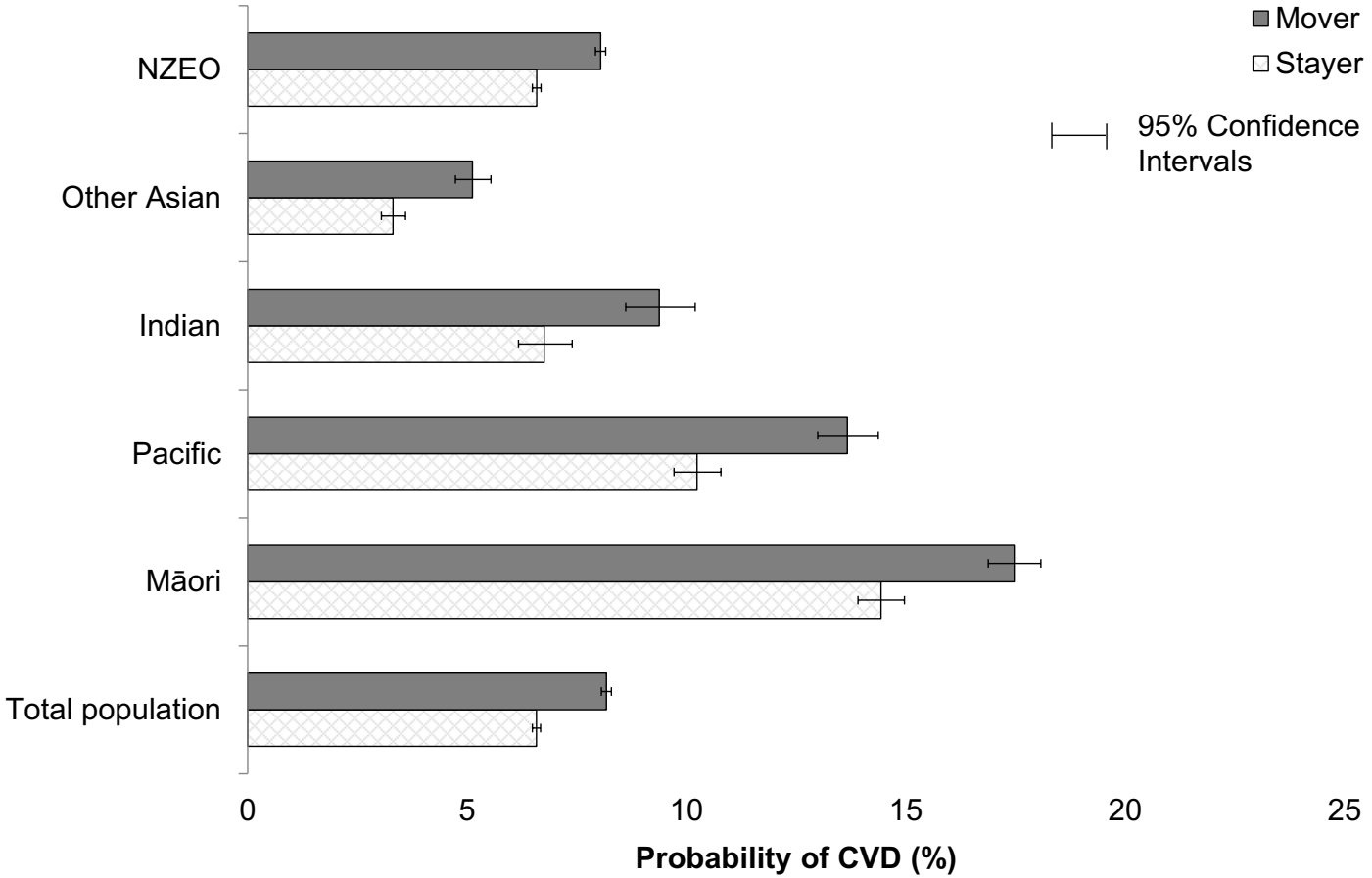
EFFECTS

- Cox proportional regression (survival analysis)– total population & stratified by ethnic group
- Compare risk of CVD for movers **who move before first CVD event** with stayers
- Ethnic differences?
- Differences by nature of the move?

TRAJECTORIES

- Trajectory analysis
- Compare CVD risk for **movers** according to their **deprivation trajectory**
- Only movers **who move before first CVD event**
- Ethnic differences?

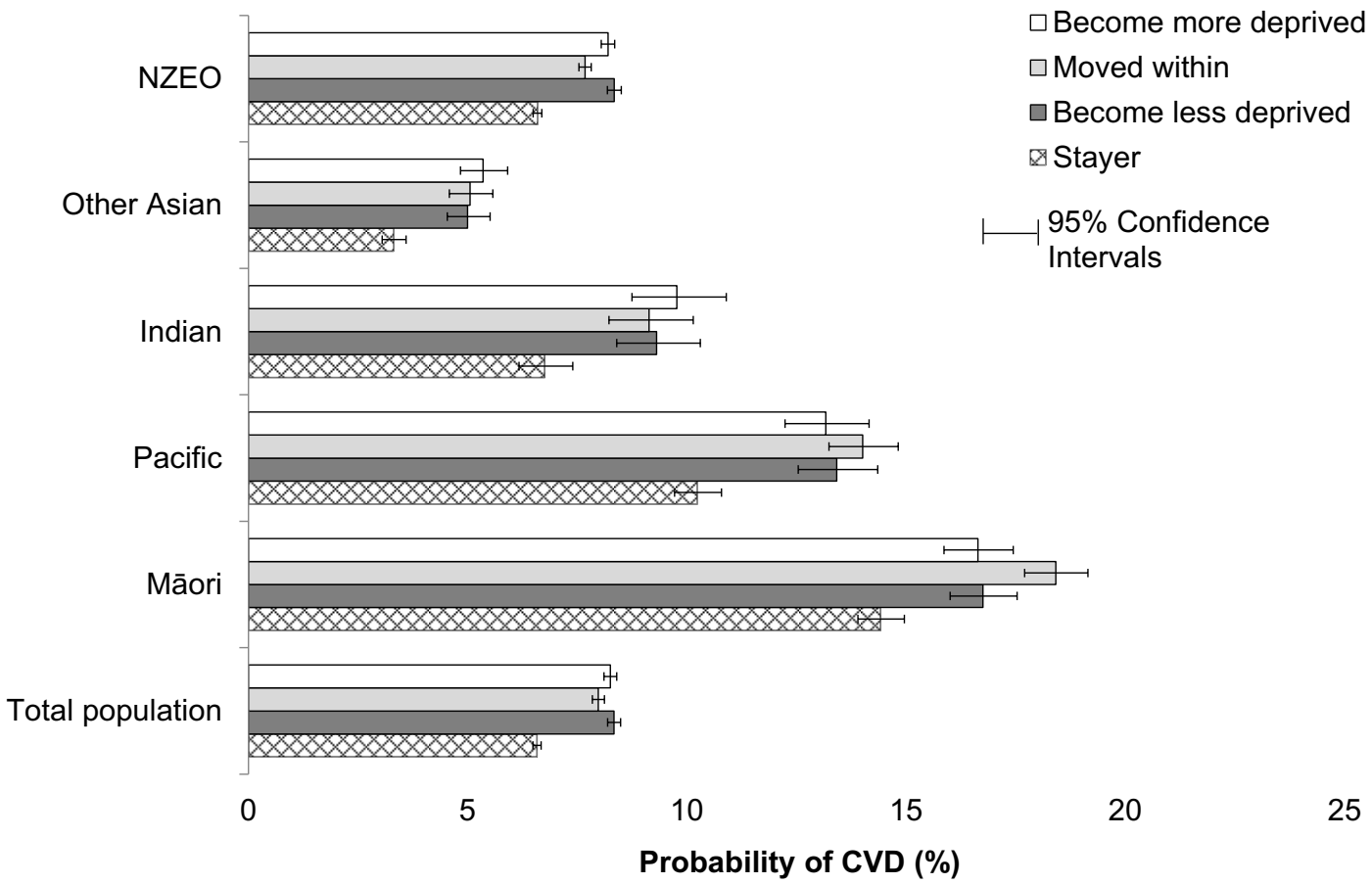
D. ASSOCIATIONS (I)



Source: Darlington-Pollock et al., 2016: 134

- Movers **significantly higher probability** of CVD compared to stayers **for all ethnic groups**
- Variation **between ethnic groups**
- **Māori and Pacific groups** higher probability of CVD than total population, also true for **Indian movers**
- Does the nature of the move matter?

D. ASSOCIATIONS (II)



- Moving within **same deprivation quintile** has different implications for different ethnic groups
- Māori and Pacific groups live in most deprived areas: moves within the same deprivation quintile = moves within the most deprived quintile
- Moving to a more deprived area not always associated with higher risk of CVD
- Is it the move, or is it the person?

Source: Darlington-Pollock et al., 2016: 135

E. EFFECTS: HAZARD RATIOS FOR MOBILE GROUPS RELATIVE TO STAYERS → RISK OF CVD

	Total	Māori	Pacific	Indian	Other Asian	NZEO
Mover	0.64 (0.63-0.64)	0.59 (0.58-0.61)	0.66 (0.63-0.69)	0.65 (0.61-0.70)	0.63 (0.60-0.68)	0.64 (0.63-0.65)
Becomes less deprived	0.64 (0.63-0.65)	0.59 (0.56-0.63)	0.68 (0.53-0.73)	0.64 (0.59-0.72)	0.64 (0.58-0.71)	0.64 (0.53-0.66)
Churns (moves within)	0.63 (0.62-0.64)	0.60 (0.58-0.63)	0.64 (0.60-0.68)	0.67 (0.60-0.75)	0.63 (0.57-0.69)	0.64 (0.63-0.65)
Becomes more deprived	0.63 (0.62-0.64)	0.58 (0.55-0.61)	0.69 (0.64-0.75)	0.63 (0.56-0.71)	0.65 (0.59-0.72)	0.63 (0.62-0.65)

Source: Darlington-Pollock et al., forthcoming.

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- Movers significantly **lower risk** of CVD than stayers

Source: Darlington-Pollock et al., forthcoming.

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- Some variation between ethnic groups, Māori movers have the lowest risk of CVD relative to their immobile peers
- Similar risks across the other ethnic groups

Source: Darlington-Pollock et al., forthcoming.

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- Some variation in the size of the HR, but CIs overlap – deprivation change does not differentiate risk of CVD for these mobile groups relative to their immobile peers

Source: Darlington-Pollock et al., forthcoming.

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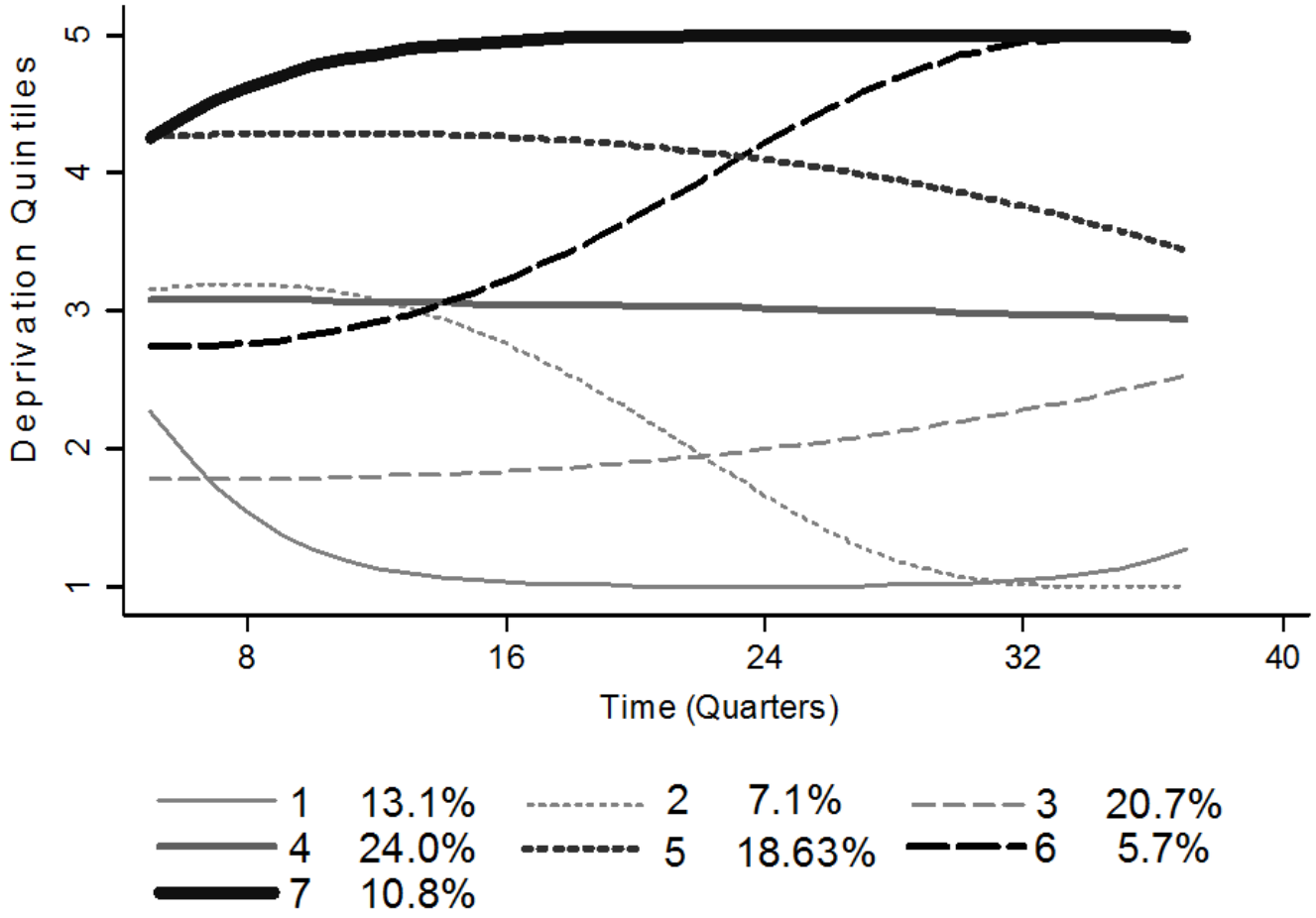
- Variation of a similar magnitude for the different ethnic groups

Source: Darlington-Pollock et al., forthcoming.

F. TRAJECTORIES: PRELIMINARY RESULTS

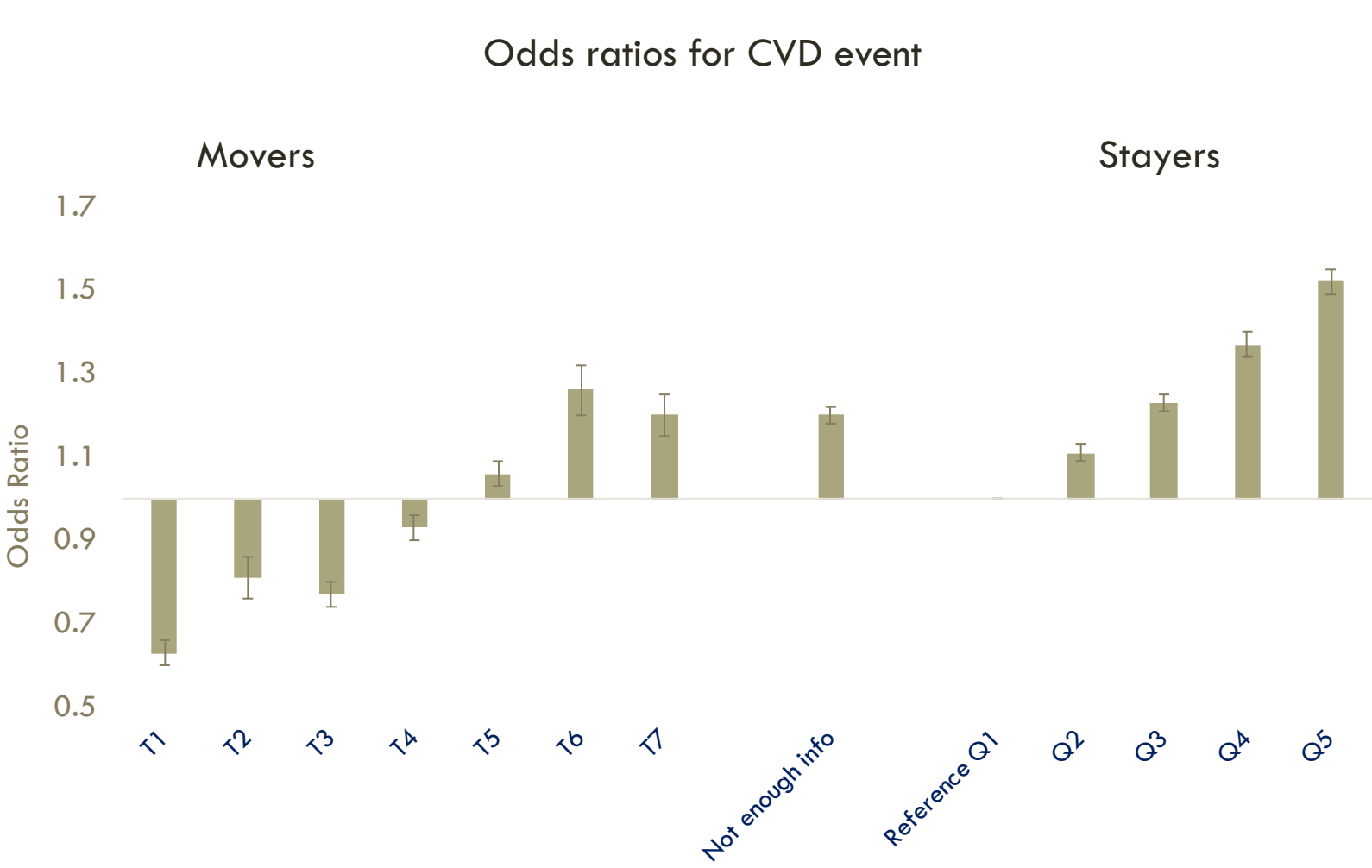


13 distinct deprivation groups:

- 7 trajectories for the movers-
  - E.g. persistent low/high deprivation, move into low / high etc…
- 5 deprivation quintiles for the "stayers" and those with fewer than 10 observations across 34 quarters (not enough information)

F. OVERALL RESULTS

- Clear deprivation gradient
- Across the deprivation spectrum, movers had a lower risk of CVD than their counterparts who remained
- Some ethnic differences found, e.g. Māori had the steepest gradient by deprivation amongst movers and stayers compared to all other ethnic groups.
- Work in progress…!



Odds ratios are in reference to the least deprived stayers
Adjusted for age, age squared, gender and ethnicity

T1: Persistent low deprivation, T2: Move into low deprivation, T3: Low deprivation to mid deprivation, T4: Persistent mid deprivation, T5: High deprivation to mid deprivation, T6: Move into high deprivation, T7: Persistent high deprivation

CONCLUSIONS

- Residential mobility **associated** with higher risk of CVD across different ethnic groups in New Zealand
- BUT, in reality the relationship is more complex. It is **the person** and **the area** rather than the move itself which are important
- Evidence of **initial** healthy migrant effect
- Unobserved compositional attributes important: Socioeconomic status? Selection effects? Migrant history ***in New Zealand****?*
- Policies should focus on **area-** and **person-level** interventions to address ethnic inequalities in CVD in NZ
- Developing research: ethnic stratification to identify further commonalities in deprivation sequences for movers
- Reasons behind the move: favourable or unfavourable?

REFERENCES AND ACKNOWLEDGEMENTS

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Exeter, D. J., Sabel, C. E., Hanham, G., Lee, A. C., & Wells, S. (2015). Movers and stayers: the geography of residential mobility and CVD hospitalisations in Auckland, New Zealand. *Social Science & Medicine*, 133, 331-339.

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