



Role of infection in cancer in Indigenous and Pacific peoples: *H. pylori* - casting a long shadow

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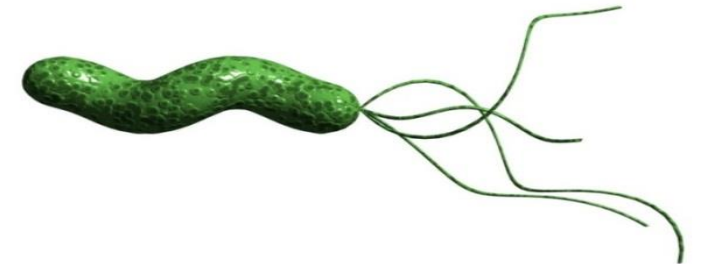
Outline

- Trends in cancer inequalities
- Role of infection on cancer with a focus on *H. pylori*
- The long shadow of its determinants
- Cost-effectiveness of intervening

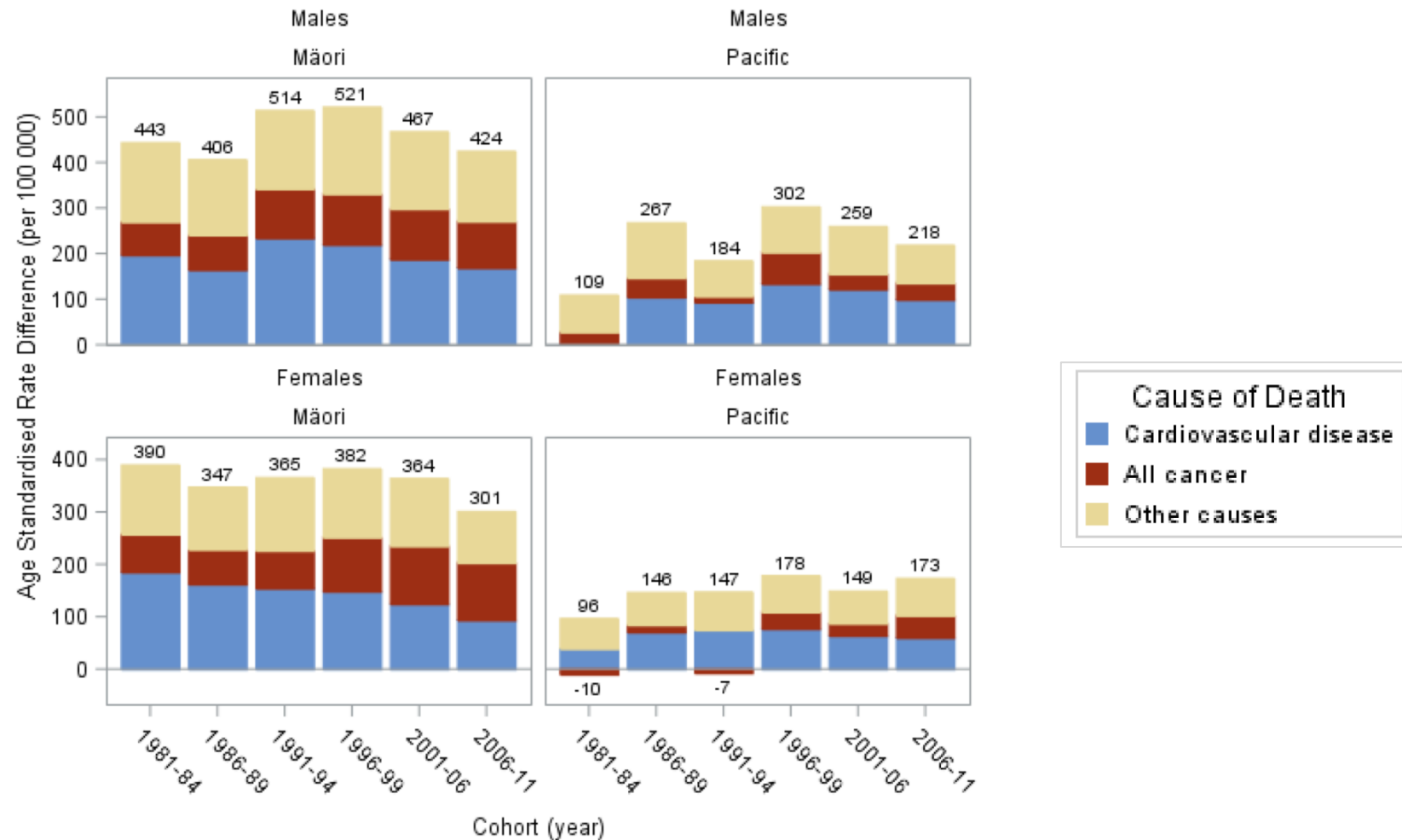


Infection and cancer

- Human papilloma virus (HPV)
- Hepatitis B
- *Helicobacter pylori*

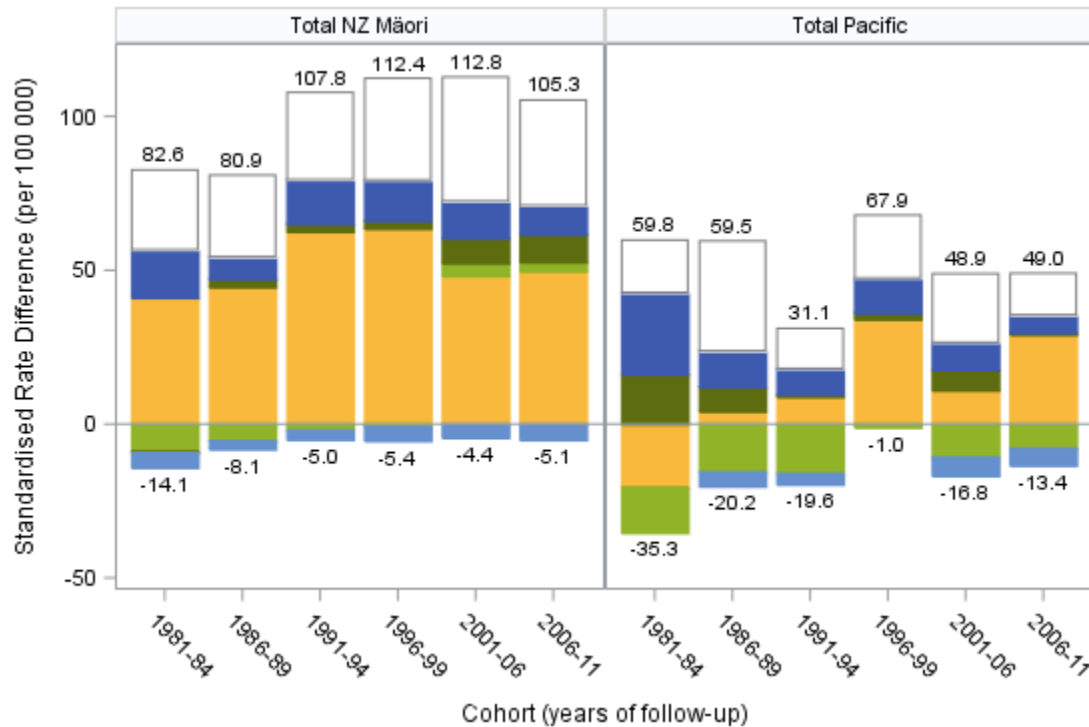


Cancer's increasing contribution to the mortality gap

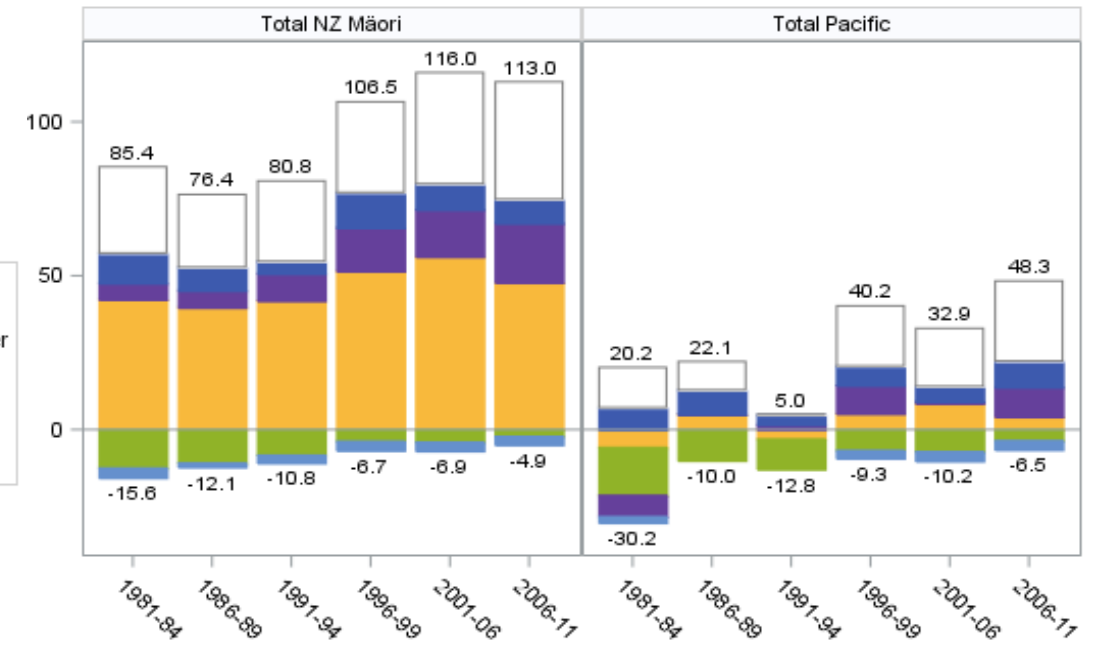


Stomach cancer & the cancer mortality gap

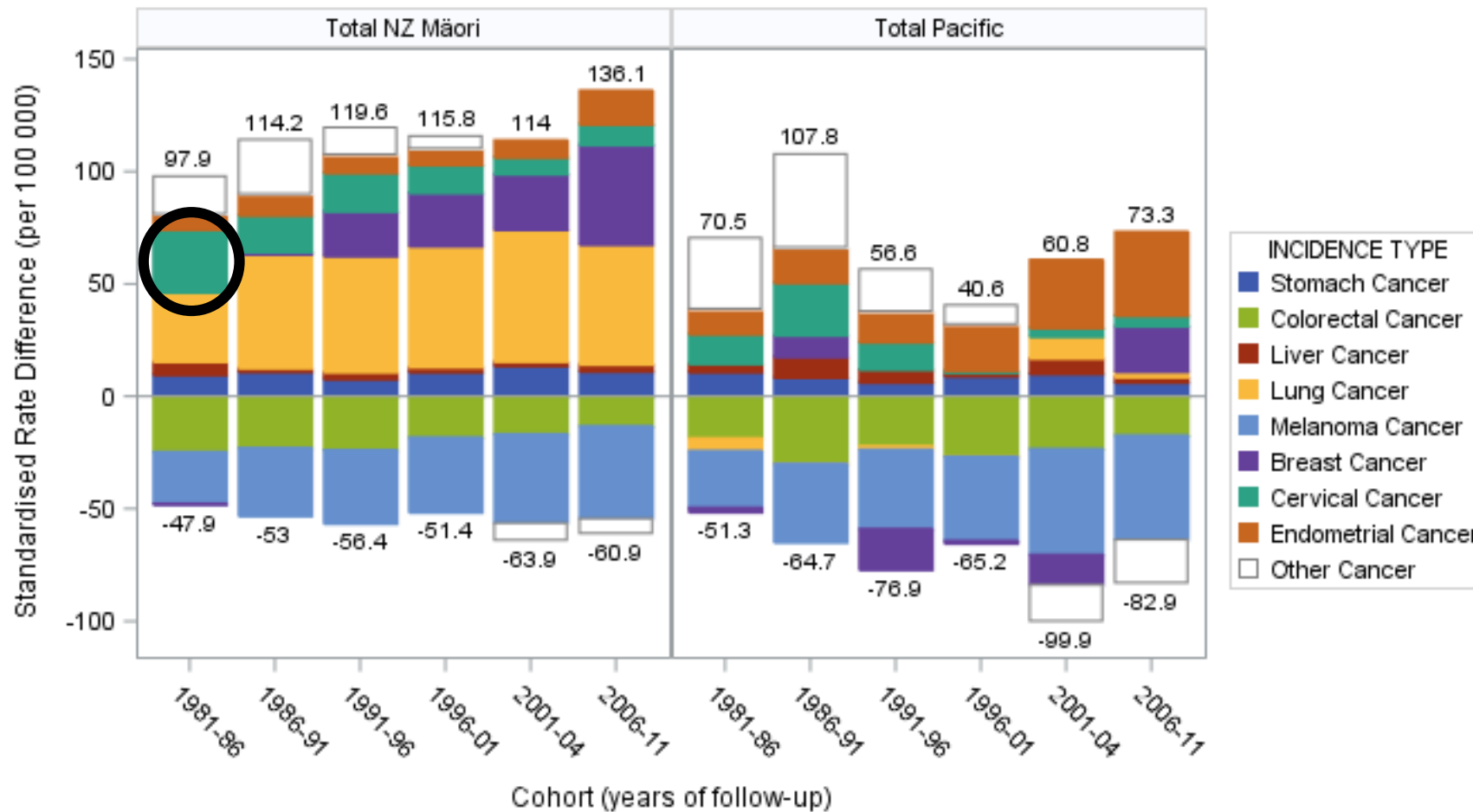
Males



Females



The cancer incidence gap in women



Inequity in stomach cancer mortality, SRRs

- Queensland, Aust: Indigenous cf non-Indigenous (1997-06, 95% CI)
 - men **2.1x** (1.5 to 2.9), women **2.0x** (1.2 to 3.2)
- NZ: Māori cf. European/Other (nMPA, 2006-11)
 - men **3.5x** (2.6 to 4.6), women **5.9x** (4.3 to 8.1)
- Pacific cf. European/Other
 - men **2.5x** (1.5–4.2), women **6.3x** (4.0–9.9)

Casting a long shadow: The impact of household crowding on *H. pylori*, and excess stomach cancer in Māori and Pacific people

Andrea Teng (nee McDonald)

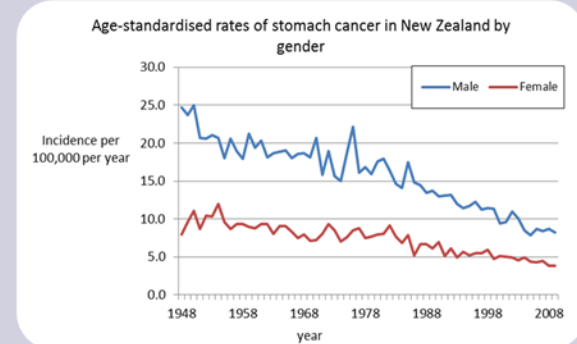
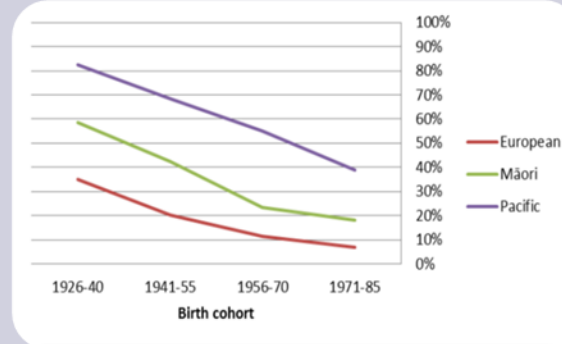
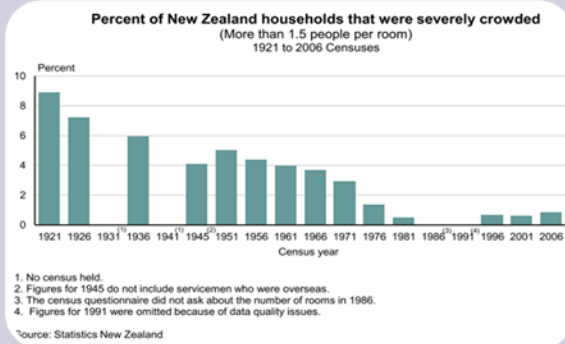
Masters in Public Health

*Supervisors: Assoc. Prof Diana Sarfati, Prof Michael Baker,
Prof Tony Blakely*



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The inequality link



- Household crowding

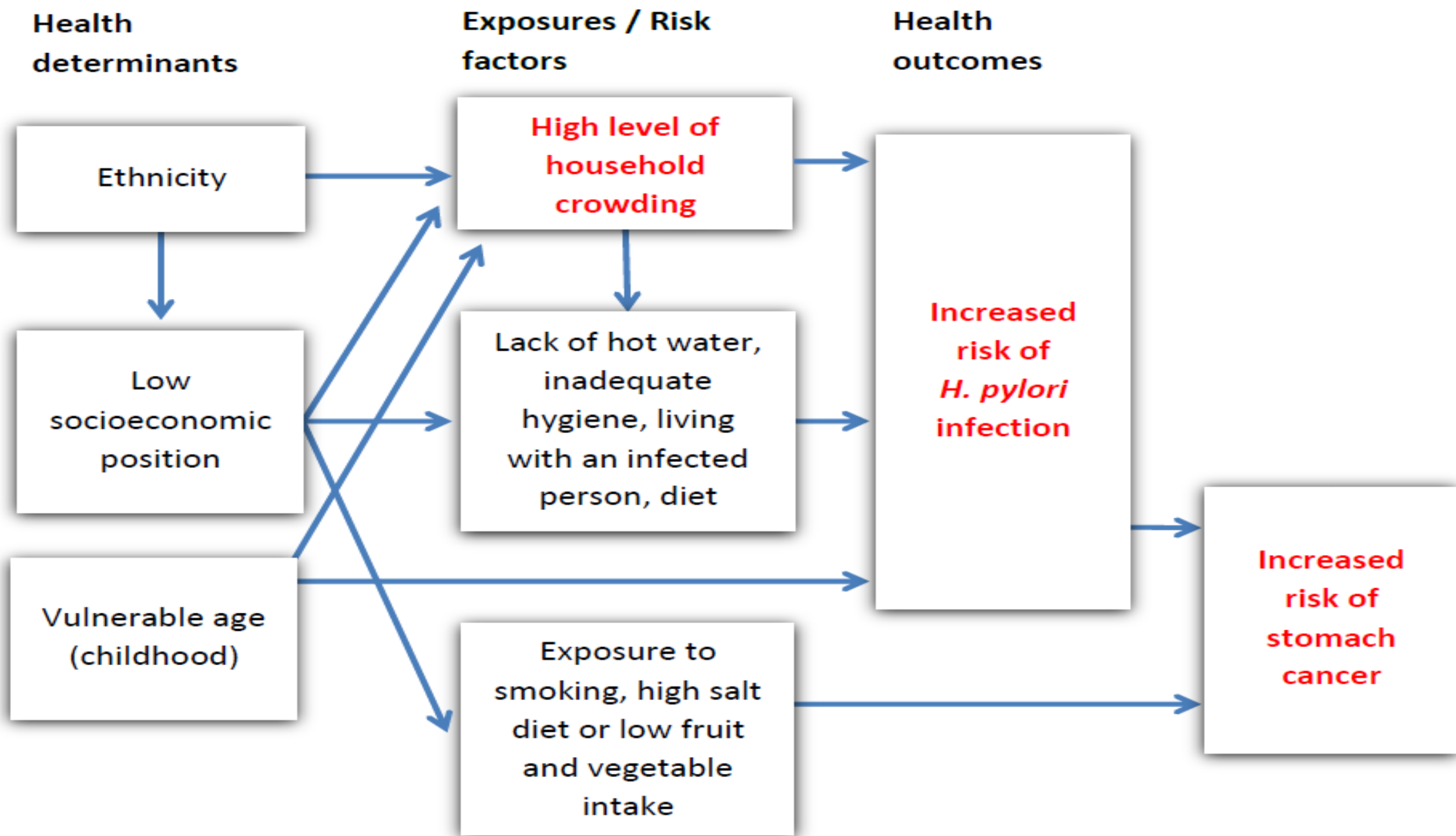
- H. Pylori infection

- Stomach cancer

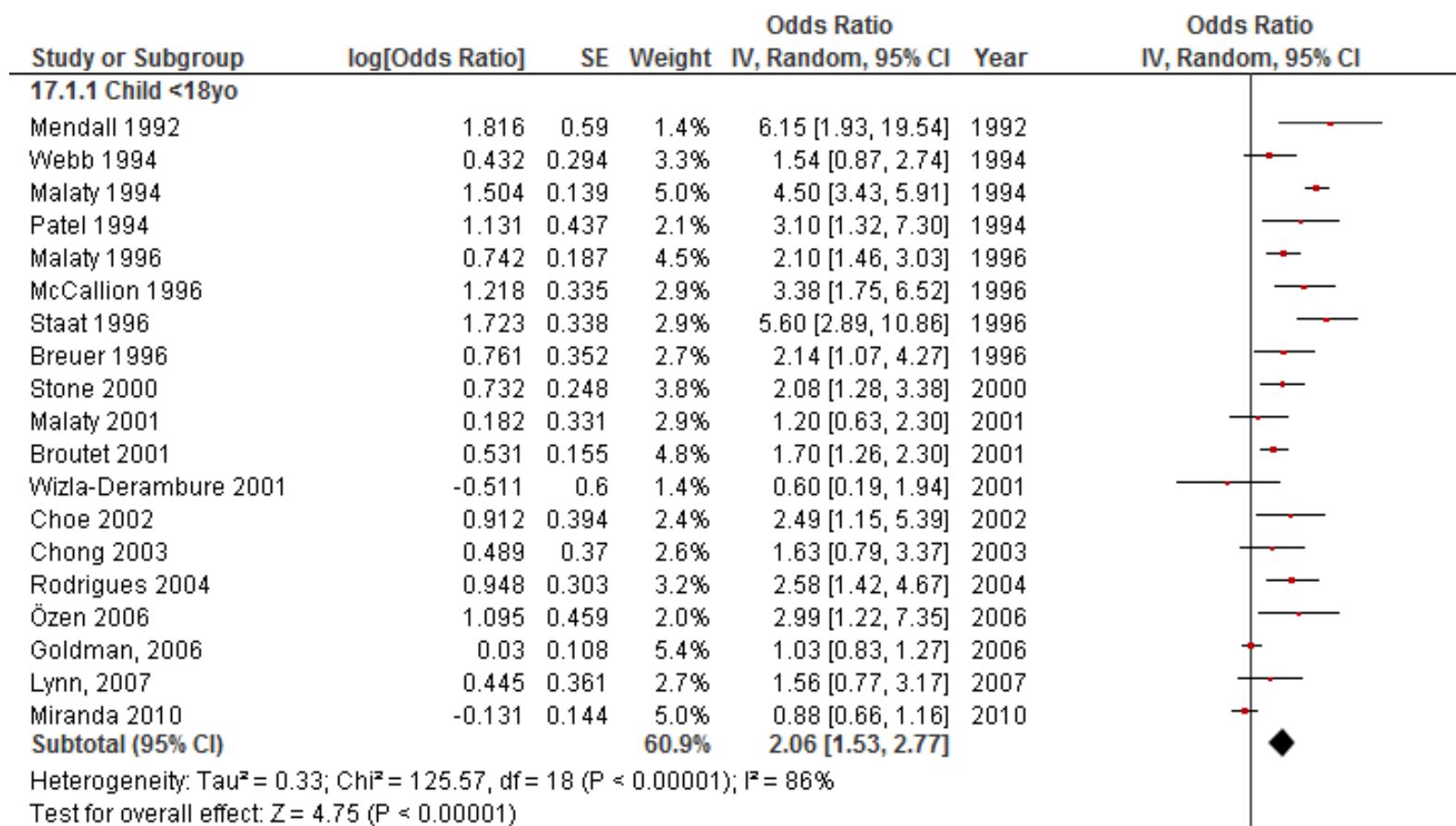
The long shadow

- *Helicobacter pylori*
 - predominantly acquired in childhood
 - linked with household crowding / socioeconomic
 - persists as chronic infection in stomach
 - important causal factor of stomach cancer
 - necessary for non-cardia stomach cancer





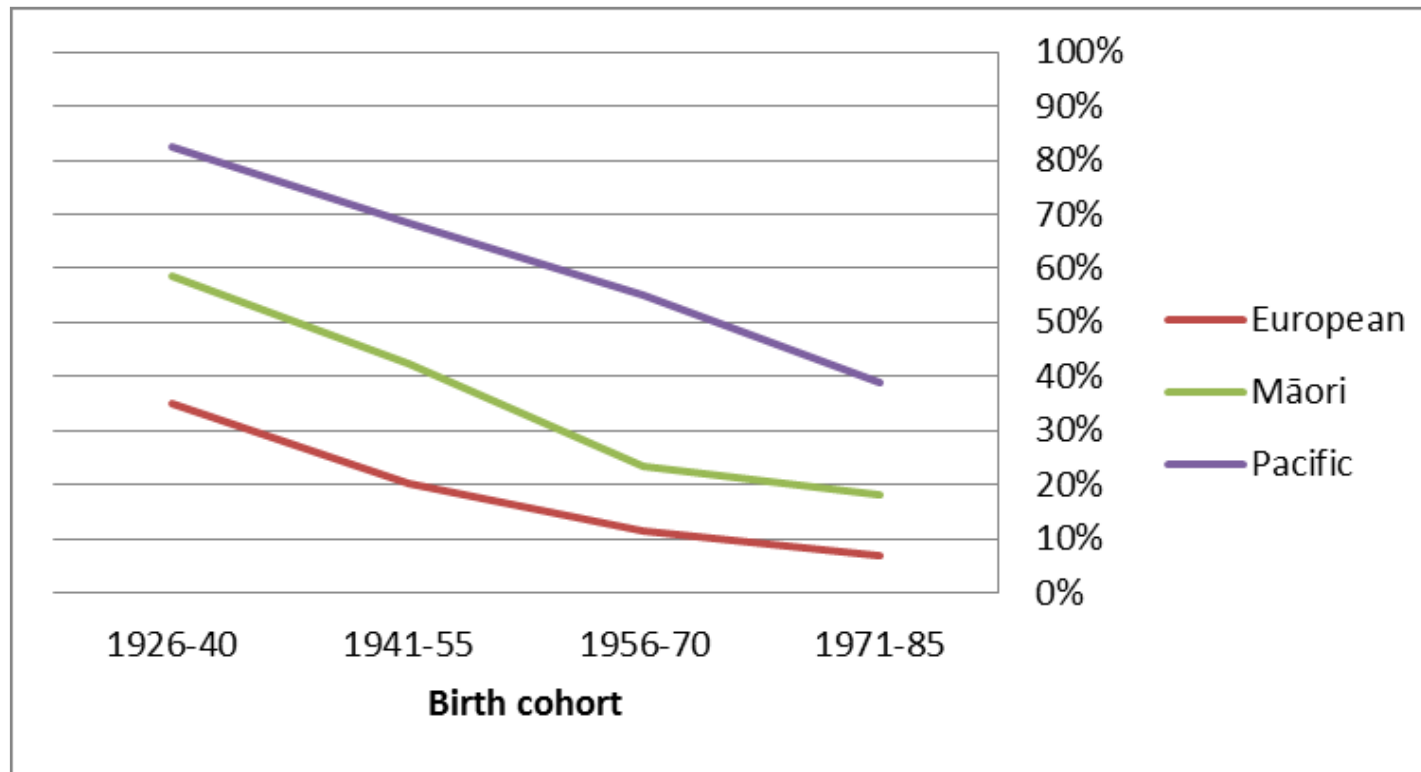
H. pylori by household crowding



More than 1/3 of Māori & Pacific *H. pylori* seroprevalence was attributable to crowding

Ethnicity	Seroprevalence %	Household crowding (<15yo) %	Proportion seroprevalence attributable to crowding, PAF % (95% CI)
b. 1971-85			
European/Other	7	11	14 (9-20)
Māori	18	38	36 (25-47)
Pacific	39	51	44 (32-54)

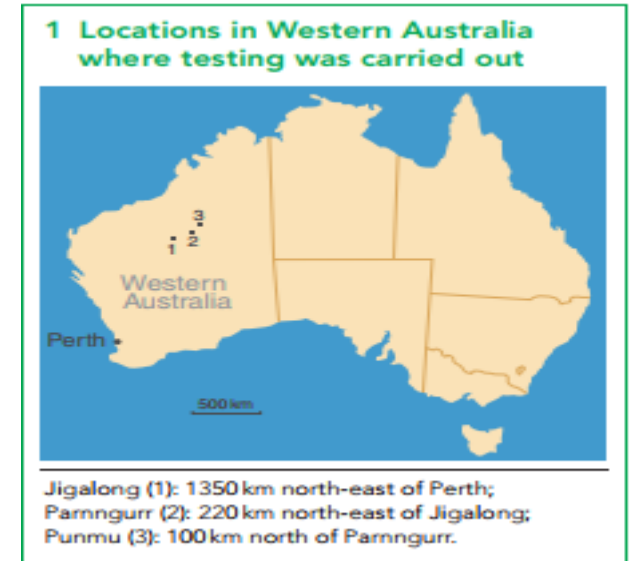
H. pylori by ethnicity in NZ



Pooled estimates of adult seroprevalence, by birth cohort and ethnicity, from seven New Zealand studies

H. pylori by ethnicity in Australia

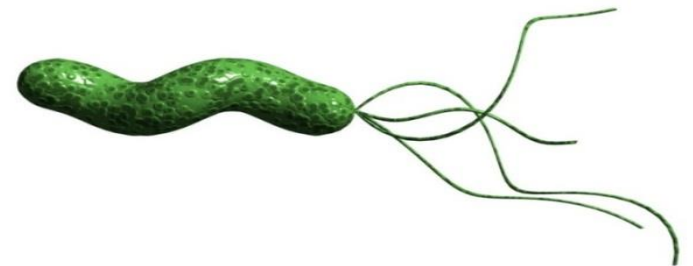
- *H. pylori* prevalence in two Indigenous communities was 2-3x higher than in non-Indigenous Australian population
 - 91% in a remote rural community
 - 60% in urban community



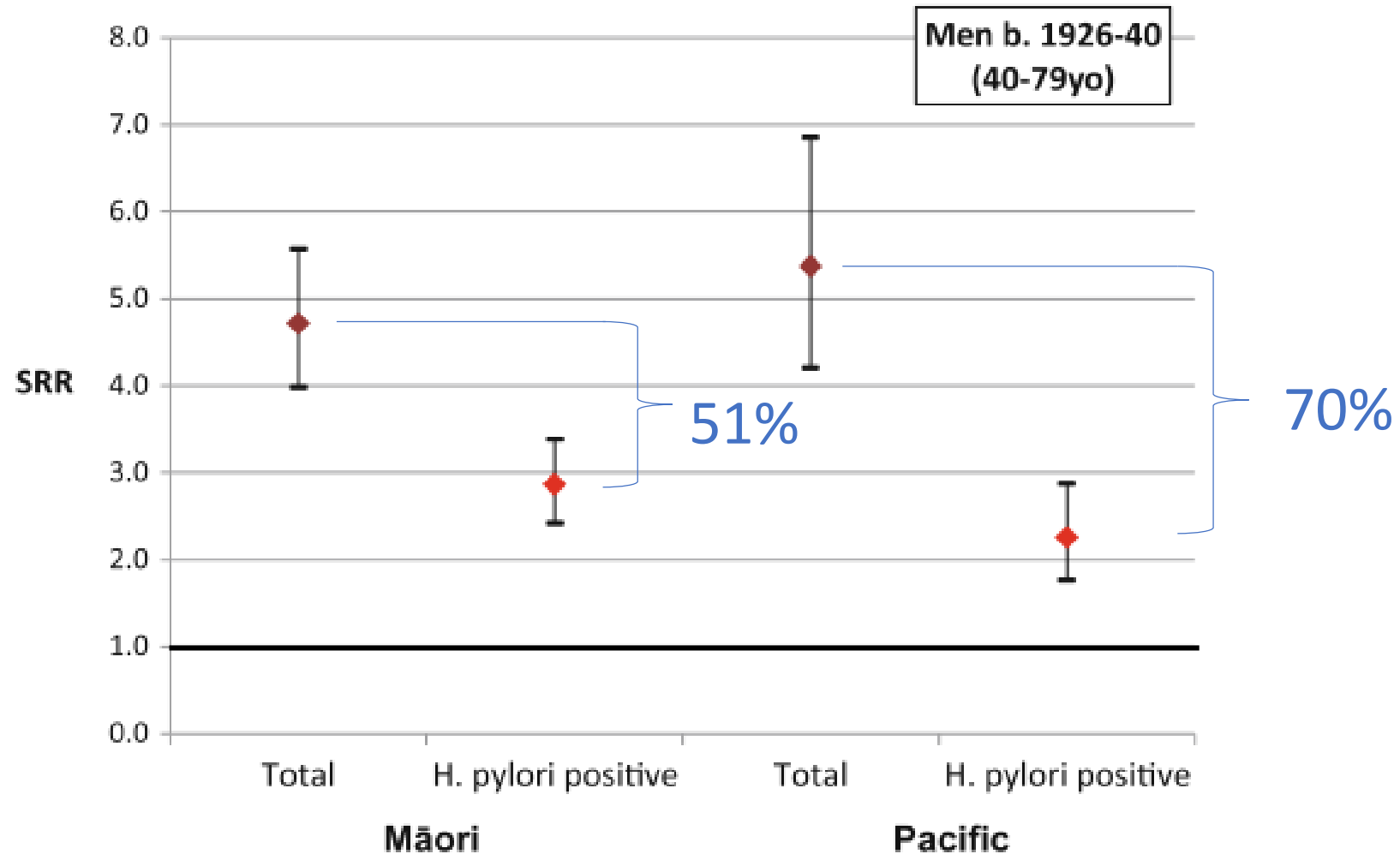
Have a guess?

What proportion of stomach cancer could be prevented if Māori men in NZ had the same seroprevalence as European men?

- A. 30%
- B. 50%
- C. 70%
- D. 90%



Non-cardia stomach cancer

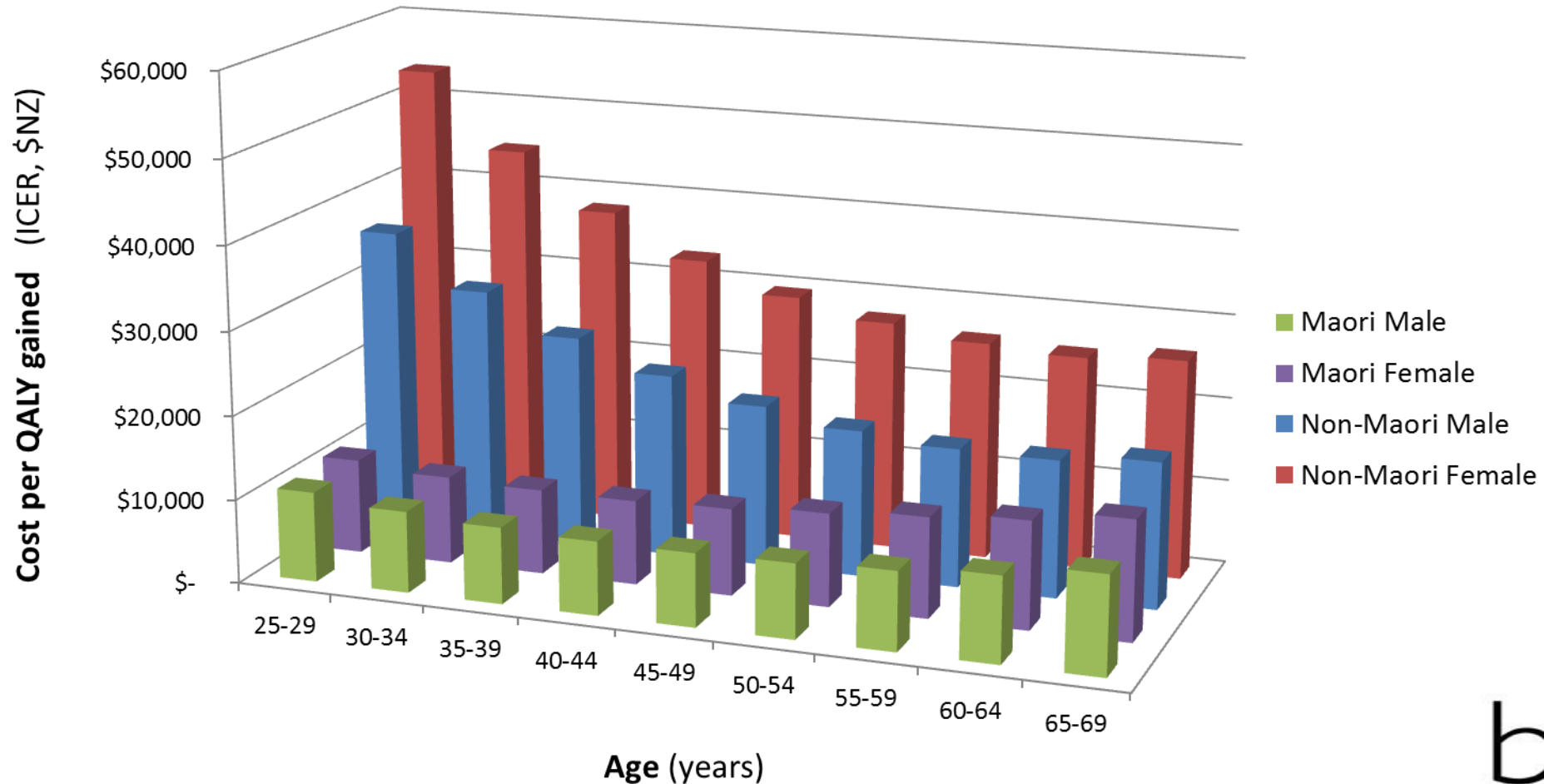


Population screening and antibiotic treatment

- Ford et al (2014) meta-analysis shows this approach reduces stomach cancer by 1/3 in asymptomatic populations
- Further clinical trials are underway
- Screening is increasingly recommended for high risk groups (for *H. pylori* & stomach ca)



Cost of *H. pylori* screening programme per QALY gained



Summary

- *H. pylori* (and its determinants) are the primary driver of excess non-cardia stomach cancer incidence among Māori and Pacific peoples in NZ
- *H. pylori* 'screen and treat' appears to be cost-effective and should be considered for Māori and Pacific adults in NZ
- These findings are likely to apply to other Indigenous populations in the region with high rates of *H. pylori* infection and stomach cancer





Acknowledgements

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Appendix

Cancer incidence in the Pacific

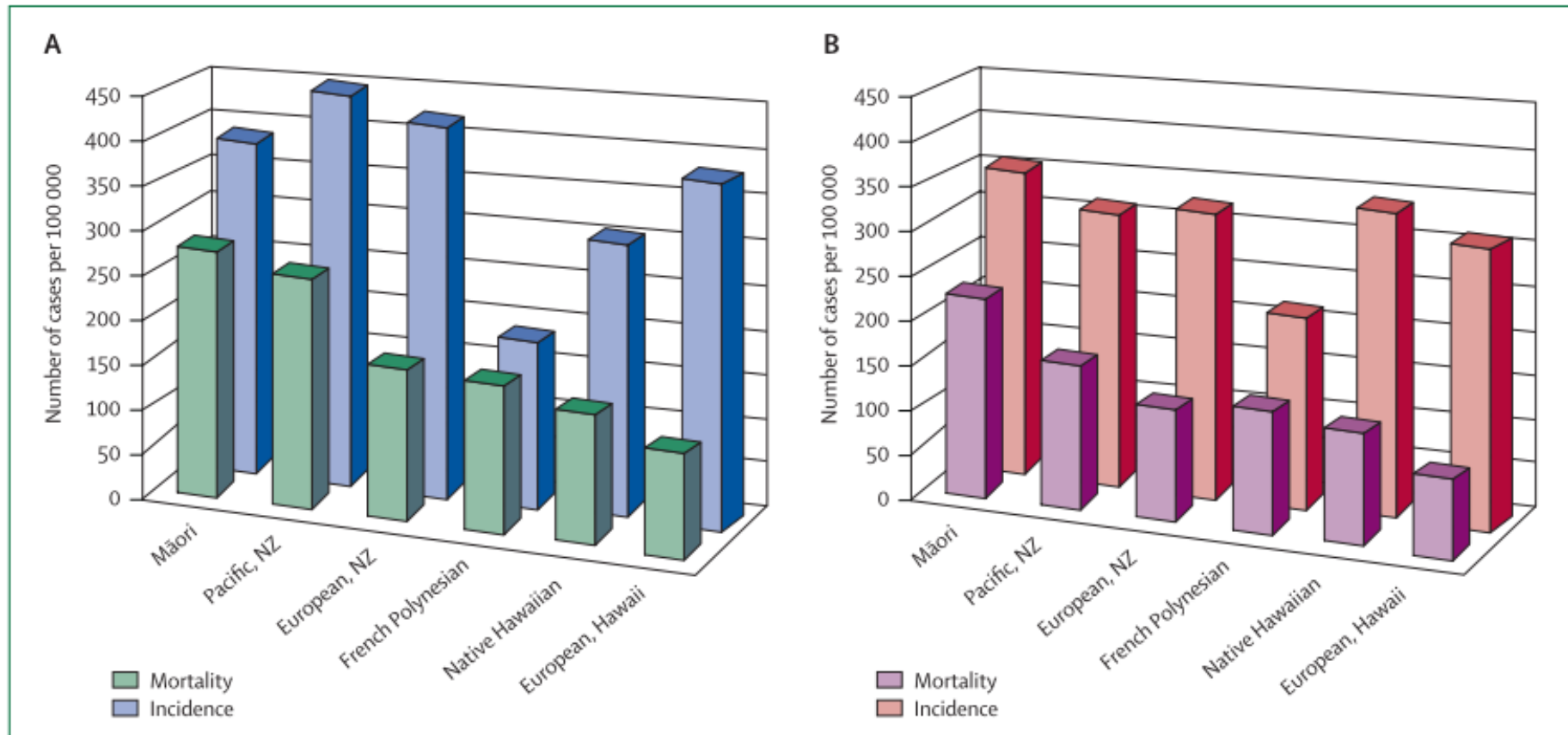


Figure 2: Cancer incidence and mortality by ethnicity in men (A) and women (B) in the Pacific

