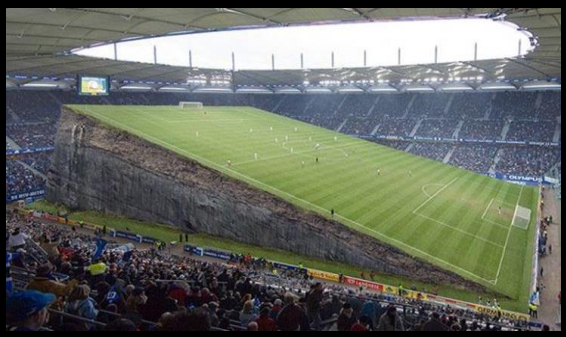
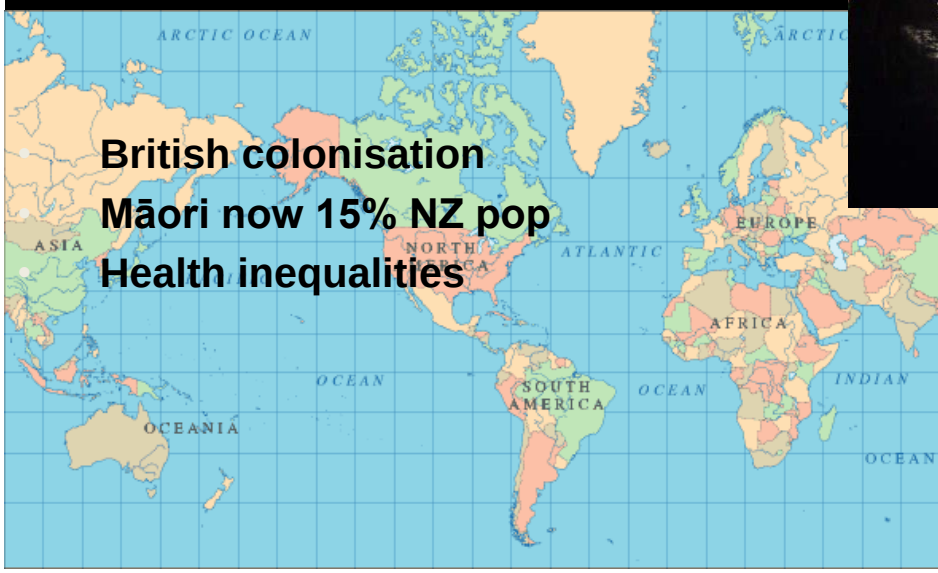
The uneven playing fields: how pathways of care and comorbidity result in inequities in cancer



Professor Diana Sarfati (diana.sarfati@otago.ac.nz)

Epidemiology… people's stories with the tears wiped away…

Māori: Indigenous New Zealanders

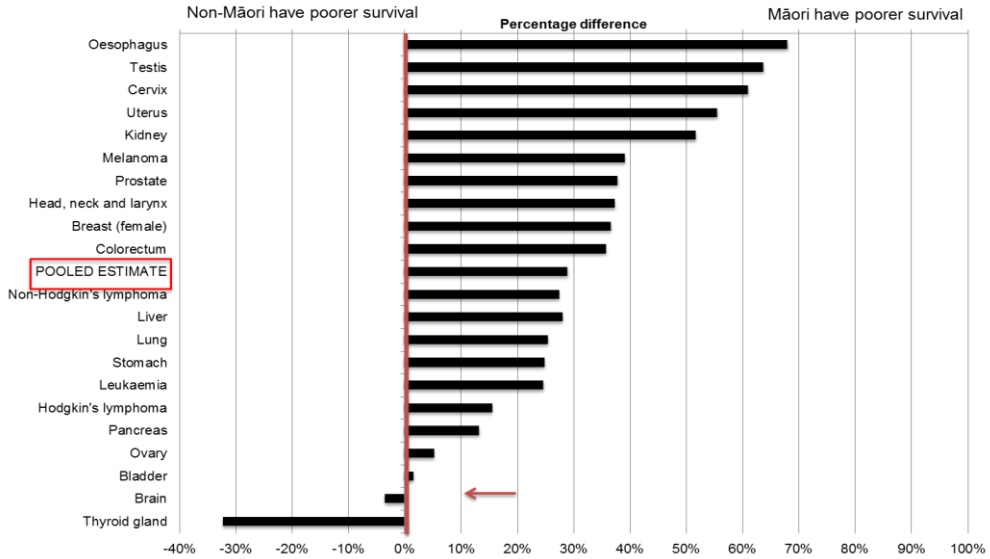


British colonisation

Māori now 15% NZ pop

Health inequalities

Percentage difference in cancer mortality between Māori compared to non-Māori, patients diagnosed 1991-2004



Soeberg M, Blakely T, Sarfati D et al (2012). *Cancer Trends: Trends in Survival by Ethnic and Socioeconomic Group, New Zealand 1991–2004*. Wellington: University of Otago and Ministry of Health.

In Australia

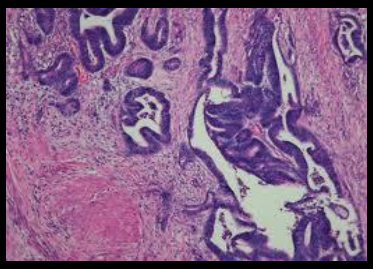
Indigenous people with cancer in Australia have poorer survival than non-Indigenous people.

Valery PC, Coory M, Stirling J, Green AC. Cancer diagnosis, treatment, and survival in Indigenous and non-Indigenous Australians: a matched cohort study. Lancet 2006;367(9525):1842-8.

Moore SP, Green AC, Bray F, Garvey G, Coory M, Martin J, et al. Survival disparities in Australia: an analysis of patterns of care and comorbidities among indigenous and non-indigenous cancer patients. BMC Cancer 2014;14:517.

Why ethnic inequities in cancer survival?

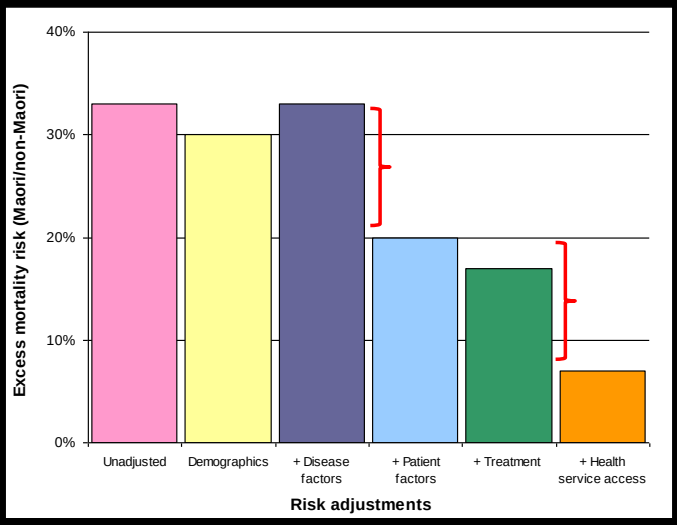
More aggressive/ advanced tumours?



Patient comorbidity?

Health care quality and/or access?

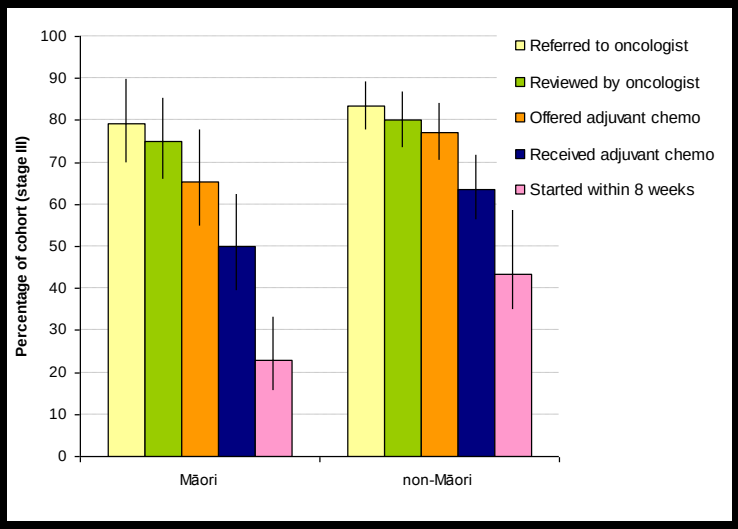
Ethnic inequities in colon cancer survival



Comorbidity and treatment/health service factors each accounted for a third of the survival difference.

Hill S, Sarfati D et al. *Cancer*. 2010: 116; 3205-14.

Ethnic inequities in colon cancer survival



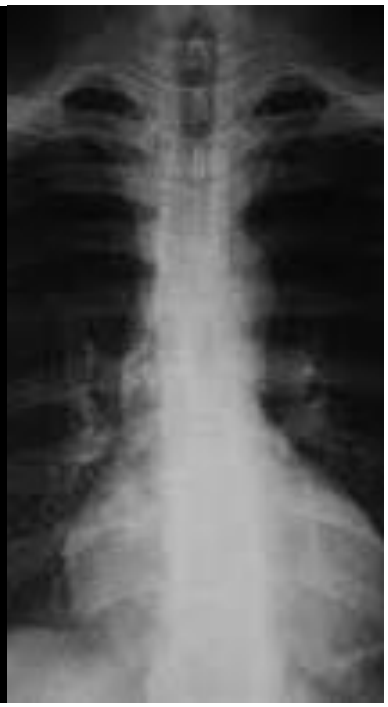
Hill S, Sarfati D, et al J Epidemiol Comm Health 2010: 64; 117-23

Not just colon cancer…

➔ "Māori were four times less likely to receive curative rather than palliative anticancer treatment for nonmetastatic disease compared with Europeans

➔ even after adjusting for age, gender, NZDep, CCI [comorbidity], tumor type, stage and patient declining management."

Stevens W, Stevens G et al. Ethnic differences in the management of lung cancer in NZ. J Thoracic Oncol 2008



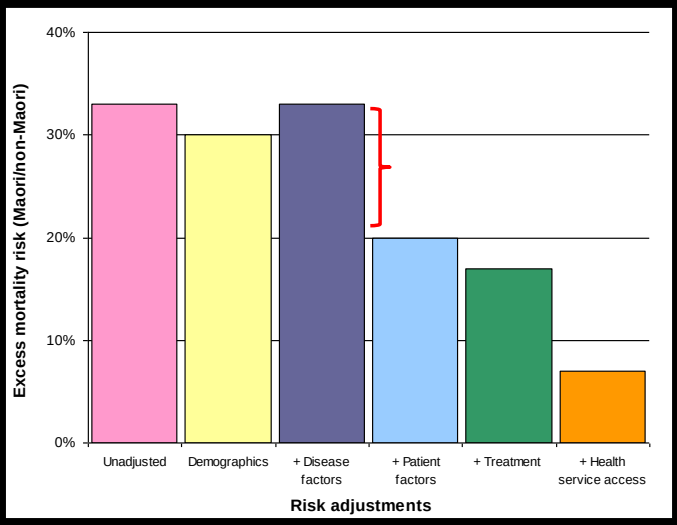
Take home messages

- There is no one point on the care pathway in which Māori do worse than non-Māori
- Addressing inequities requires a whole of pathway approach

A whole of pathway approach…

- Stated commitment to achieving equity
- Healthcare leadership that includes indigenous people
- Health system organisation
  - Processes and systems to ensure equal access to and through health services
  - Each step considered from an equity perspective
- Explicit treatment standards
- Data collection: excellent ethnicity data, excellent analysis and excellent reporting
- Health workforce that reflects the community it serves and is 'culturally competent'.

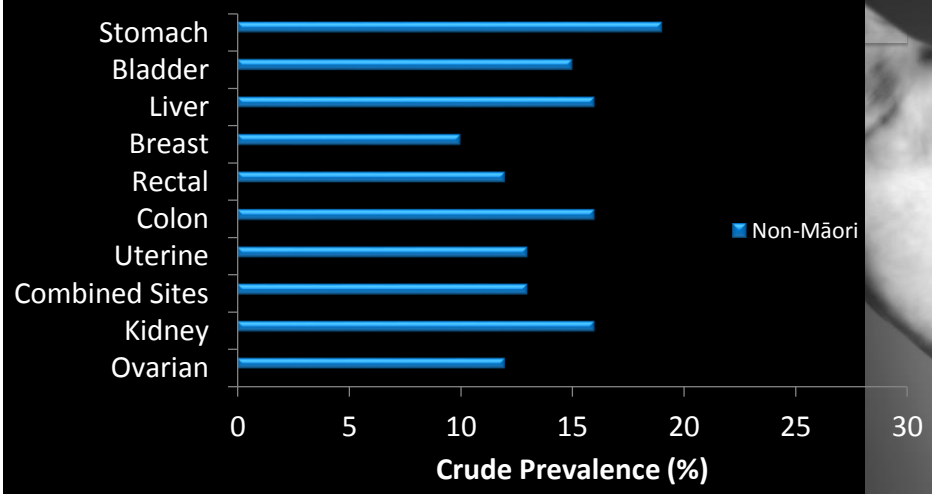
Ethnic inequities in colon cancer survival



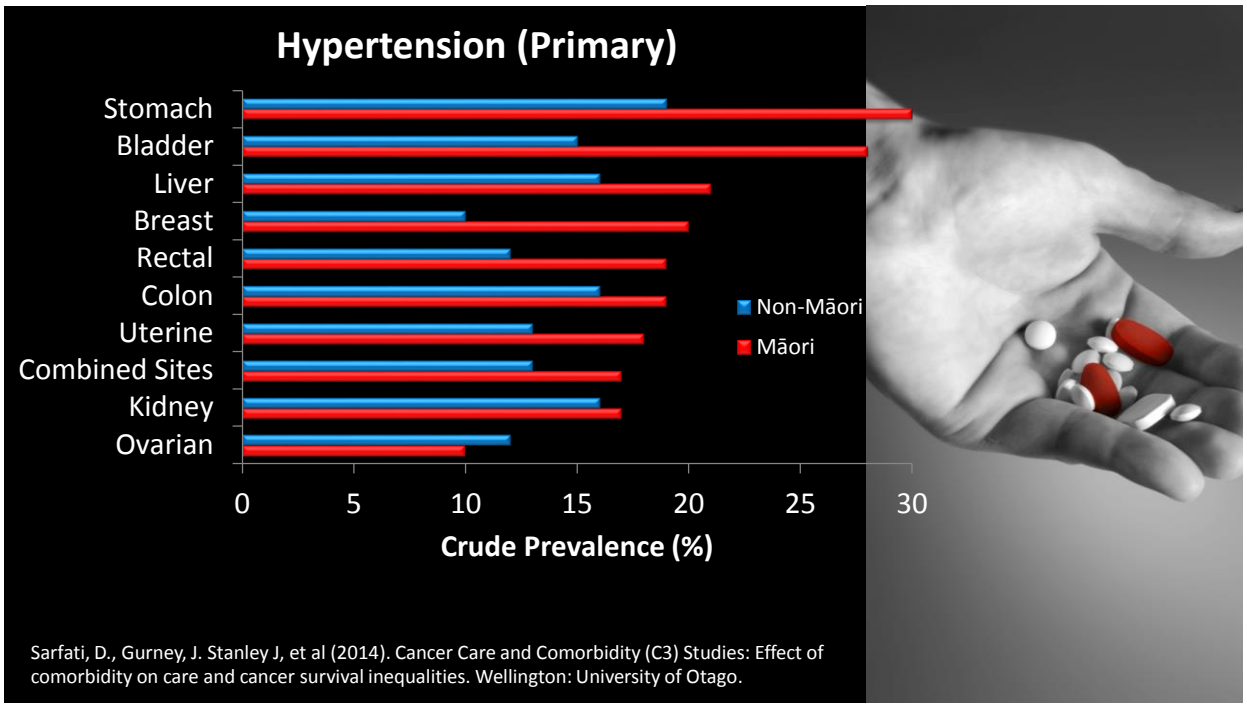
Comorbidity and treatment/health service factors each accounted for a third of the survival difference.

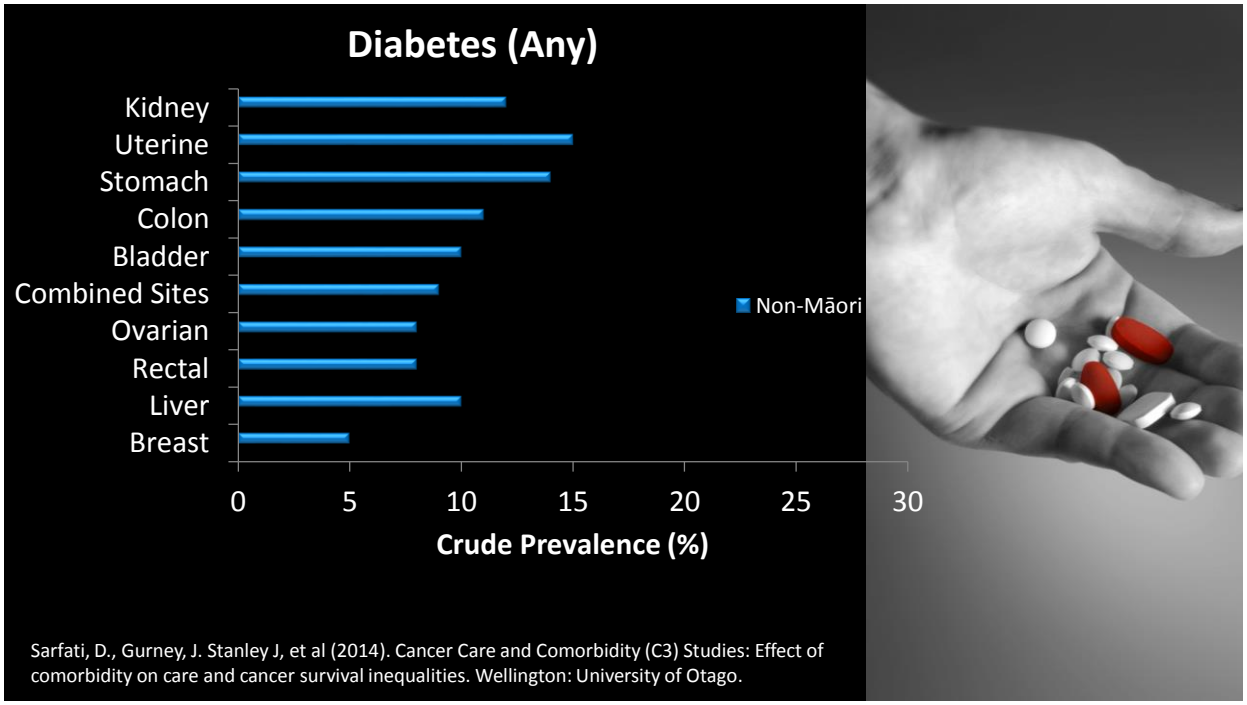
Hill S, Sarfati D et al. *Cancer*. 2010: 116; 3205-14.

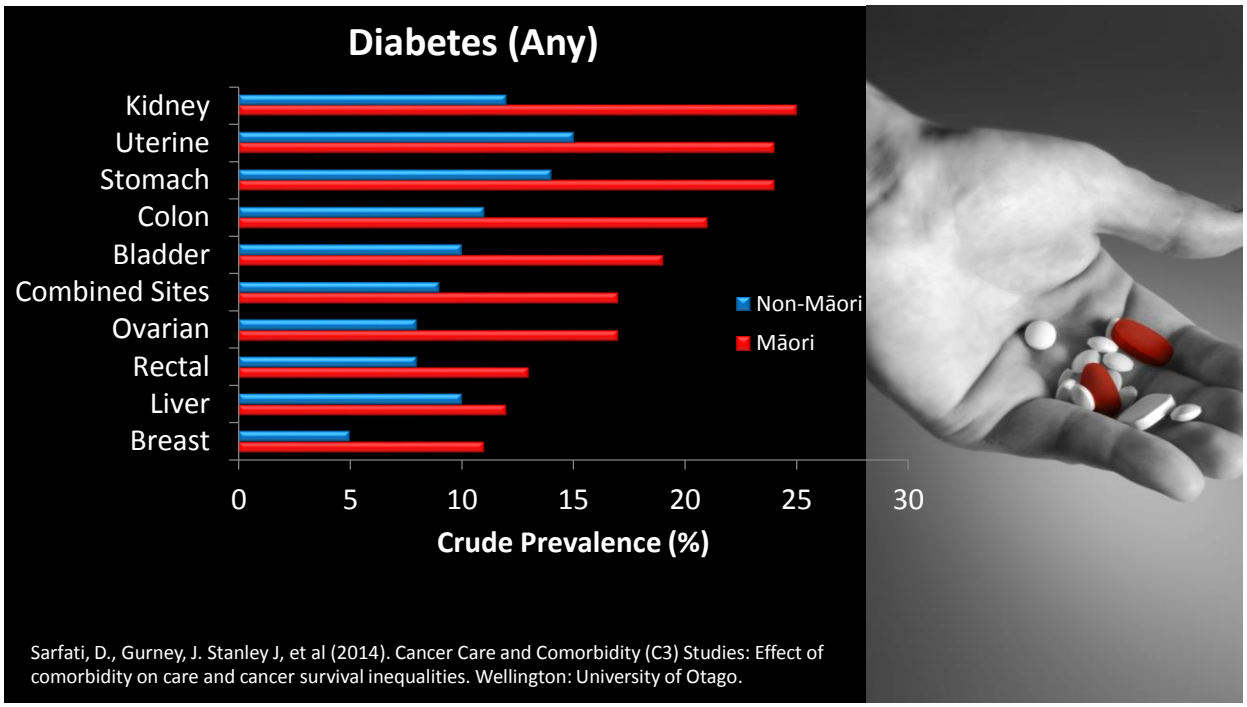
Indigenous cancer patients tend to have a **greater comorbidity burden**.



Sarfati, D., Gurney, J. Stanley J, et al (2014). Cancer Care and Comorbidity (C3) Studies: Effect of comorbidity on care and cancer survival inequalities. Wellington: University of Otago.


Hypertension (Primary)
Stomach
Bladder
Liver
Breast
Rectal
Colon
Uterine
Combined Sites
Kidney
Ovarian
Non-Māori
Māori
0
5
10
15
20
25
30
Crude Prevalence (%)
Sarfati, D., Gurney, J. Stanley J, et al (2014). Cancer Care and Comorbidity (C3) Studies: Effect of comorbidity on care and cancer survival inequalities. Wellington: University of Otago.


Diabetes (Any)
Kidney
Uterine
Stomach
Colon
Bladder
Combined Sites
Ovarian
Rectal
Liver
Breast
Non-Māori
0
5
10
15
20
25
30
Crude Prevalence (%)
Sarfati, D., Gurney, J. Stanley J, et al (2014). Cancer Care and Comorbidity (C3) Studies: Effect of comorbidity on care and cancer survival inequalities. Wellington: University of Otago.


Diabetes (Any)
Kidney
Uterine
Stomach
Colon
Bladder
Combined Sites
Ovarian
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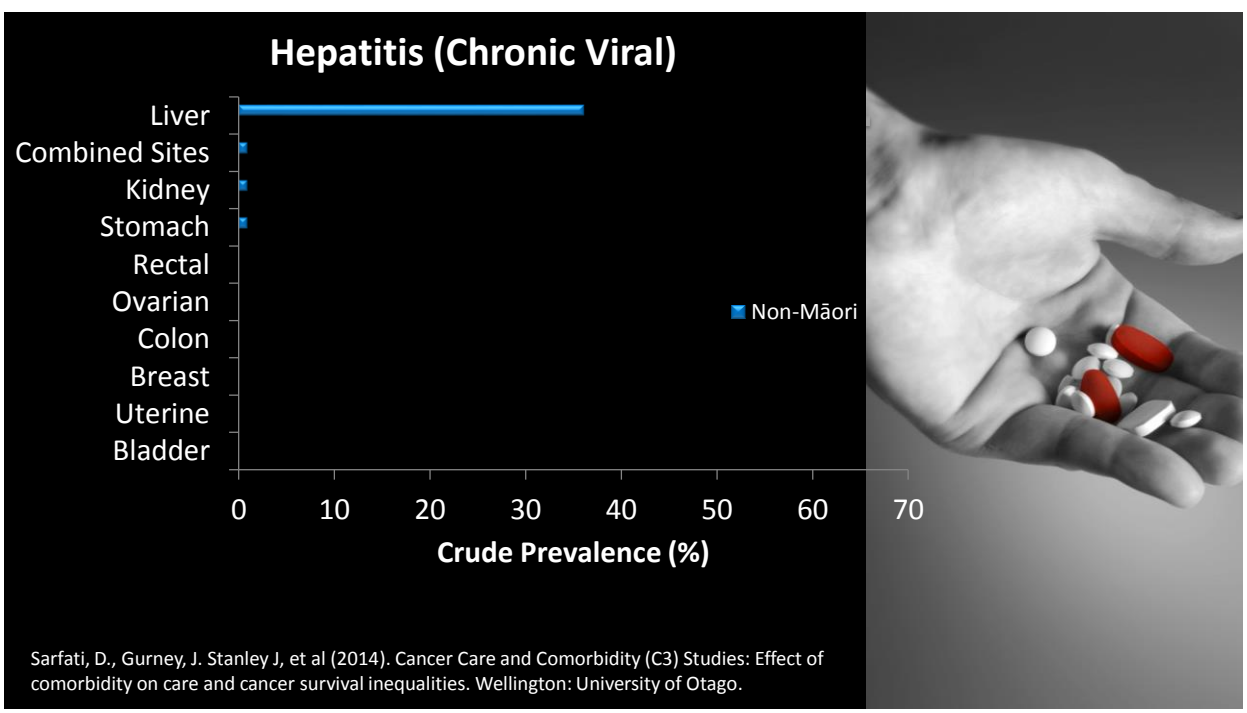
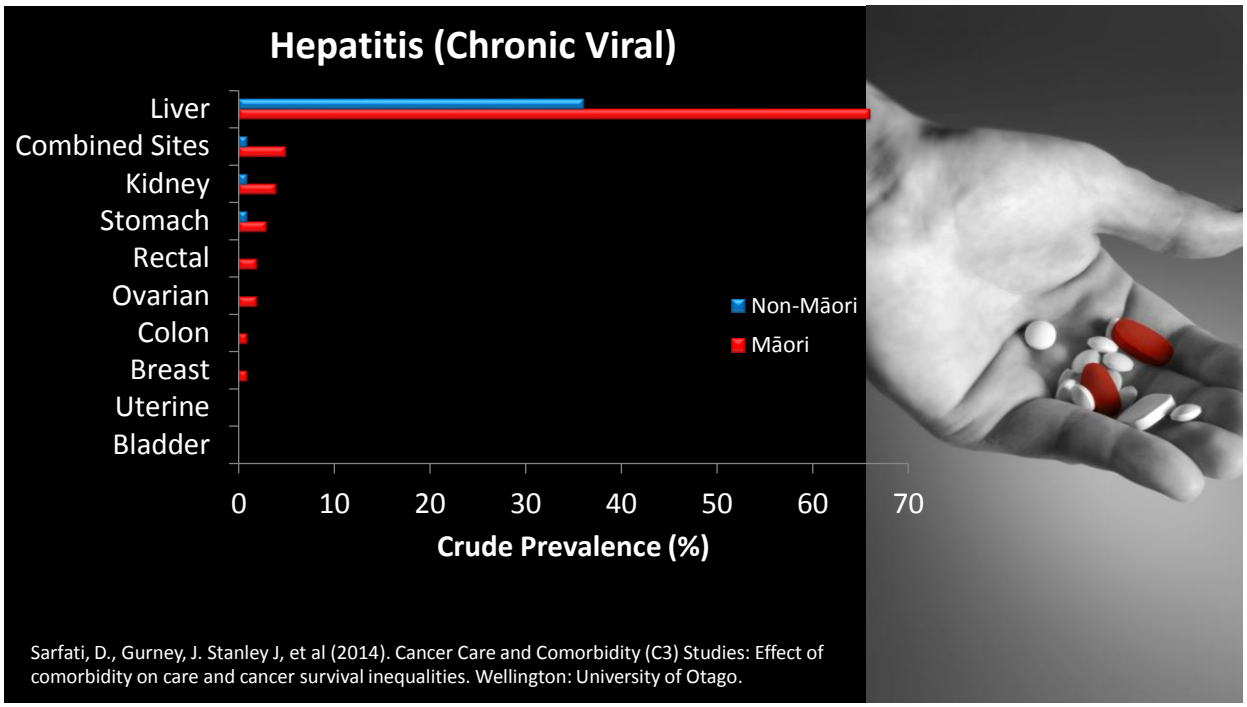

Hepatitis (Chronic Viral)
Liver
Combined Sites
Kidney
Stomach
Rectal
Ovarian
Colon
Breast
Uterine
Bladder
Non-Māori
0
10
20
30
40
50
60
70
Crude Prevalence (%)
Sarfati, D., Gurney, J. Stanley J, et al (2014). Cancer Care and Comorbidity (C3) Studies: Effect of comorbidity on care and cancer survival inequalities. Wellington: University of Otago.


Hepatitis (Chronic Viral)
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Crude Prevalence (%)
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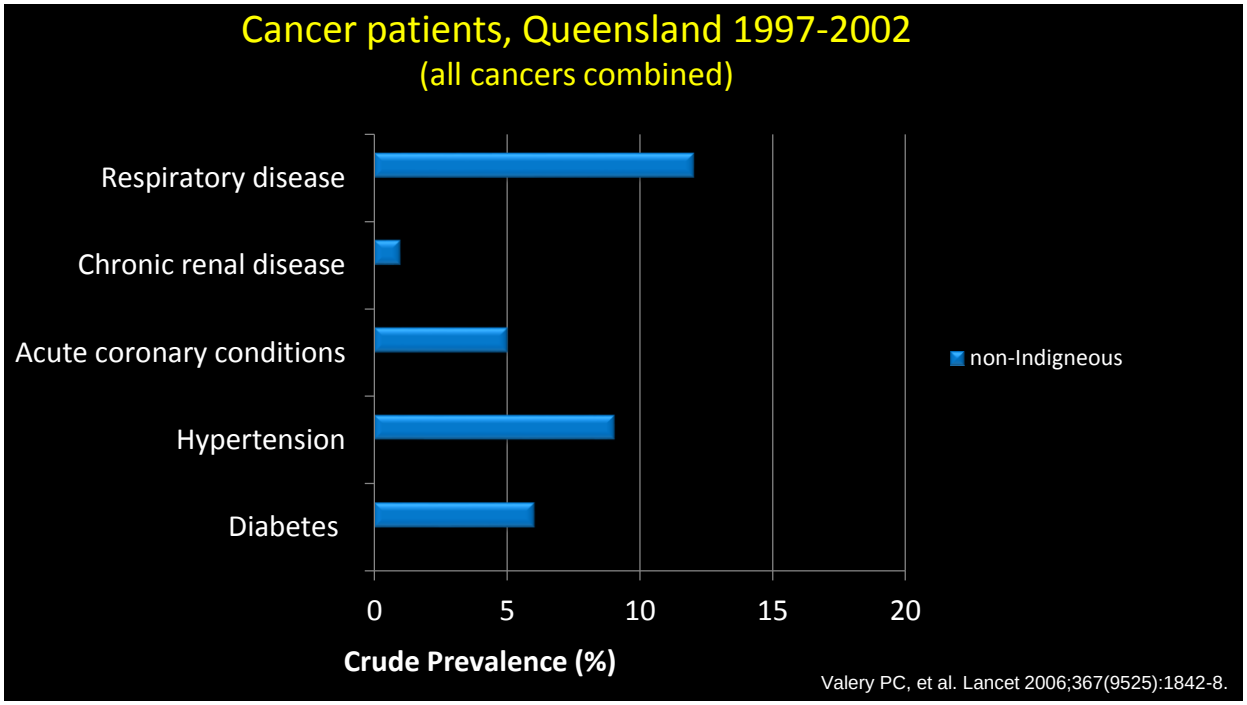
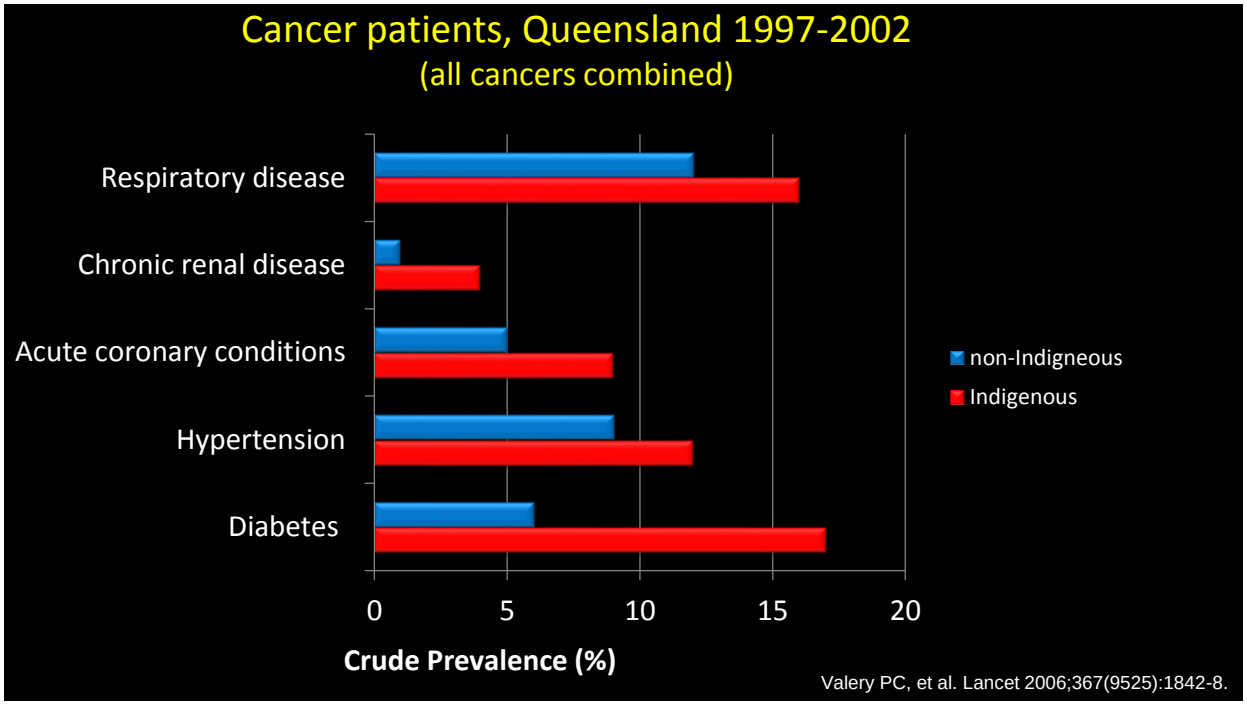
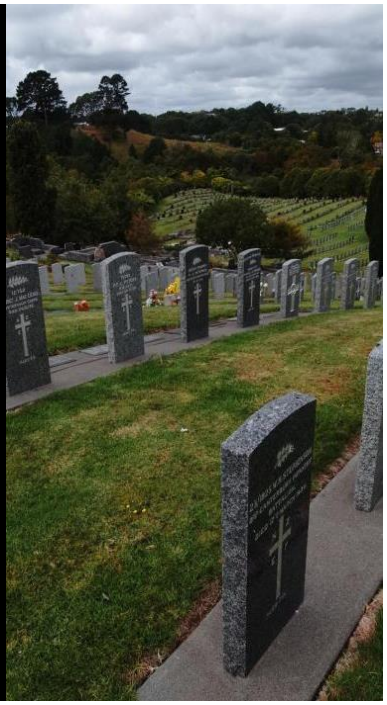

Cancer patients, Queensland 1997-2002
(all cancers combined)
Respiratory disease
Chronic renal disease
Acute coronary conditions
Hypertension
Diabetes
non-Indigneous
0
5
10
15
20
Crude Prevalence (%)
Valery PC, et al. Lancet 2006;367(9525):1842-8.



Impact on survival

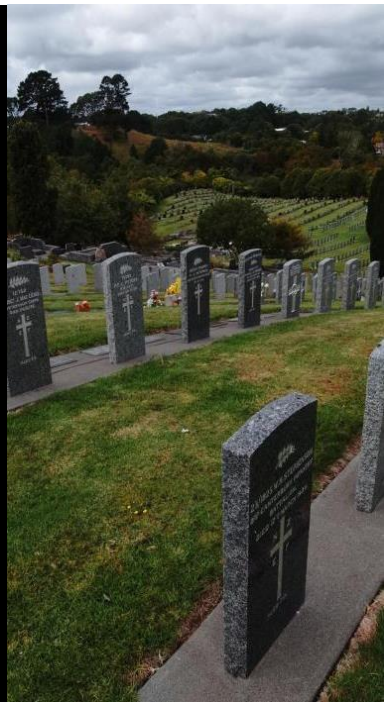
- Comorbidity has been found to have an adverse impact on survival in every cancer site investigated.

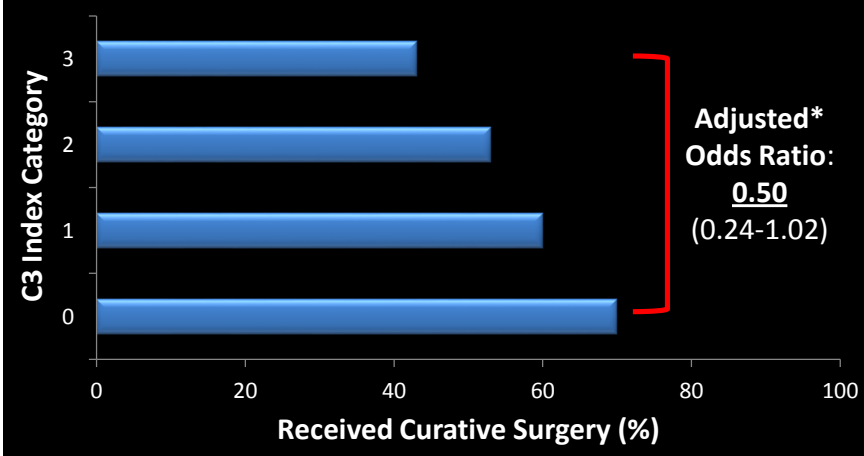


Why does comorbidity affect survival

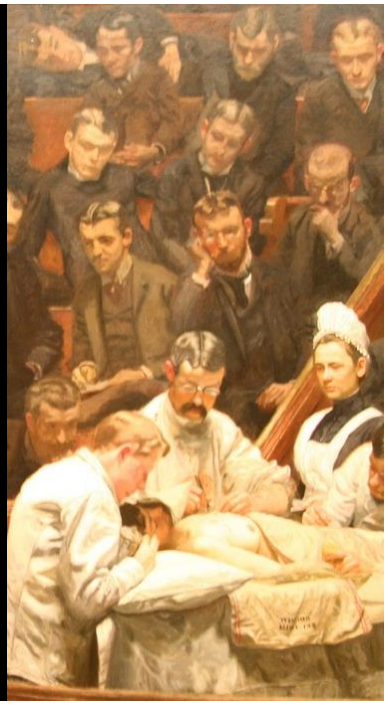
- Direct effect
- Indirect effect because of reduced cancer treatment
- Effect of comorbidity on cancer progression
  - Recurrence more likely in those with diabetes even in context of RCT (Meyerhardt et al 2003)

Sarfati D, Koczwara B, Jackson C. The impact of comorbidity on cancer and its treatment. *Ca: A Cancer Journal for Clinicians* 2016.





Sarfati D, Gurney J, Stanley J, Koea J. A retrospective cohort study of patients with stomach and liver cancers: the impact of comorbidity and ethnicity on cancer care and outcomes. *BMC Cancer* 2014.



Impact on treatment

- Why?
  - Concern by clinician that treatment may be less effective among those with comorbidity
  - Concern by clinician or patient that patients with comorbidity will not tolerate treatment.
  - Life expectancy is insufficient to justify treatment
  - Patient more likely to decline treatment

Benefits of treatment

- High quality studies consistently show that those with comorbidity who are treated do better than those who are not treated.
- Many studies show little or no difference in relation to toxicity of treatment for those with comorbidity (especially for non-surgical treatments).

Sarfati D, Koczwara B, Jackson C. The impact of comorbidity on cancer and its treatment. *Ca: A Cancer Journal for Clinicians* 2016.

Why is this important?

- Māori (and other Indigenous populations) have higher rates of comorbidity than non-Indigenous people.
- Those with comorbidity are less likely to receive curative care for their cancer.
- Those with comorbidity who receive such care have better outcomes.
- This is a pathway we can intervene on to improve cancer outcomes in general and to reduce inequities in outcomes

Addressing comorbidity to reduce inequities

- Improving our evidence base
  - Inclusion of patients with comorbidity in RCTs
  - Propensity score analysis of patients to assess impact of specific conditions on treatment and outcomes
- 'De-siloing' cancer care
  - Feasibility study involving active identification and treatment of comorbidity in acute cancer setting (3 centres)
- Skill development for clinicians
  - Development of clinical tools e.g. polypharmacy, life expectancy calculators

Intervention…

- Review of patients by physician/ geriatrician with input from cancer care nurses and allied health care professionals
- The intervention covers four main domains:
  - a) assessment and management of comorbidity;
  - b) assessment and management of polypharmacy;
  - c) evaluation of mental health with a particular focus on depression, and
  - d) review of functional and psychosocial issues.

Followed up for:

- Substantive questions:
  - Stage specific chemo uptake rate
  - Chemo completion rate
  - Chemo toxicity rate
  - Unplanned hospitalisations
  - All cause and cancer specific survival
- Feasibility questions:
  - Proportion who complete questionnaires and are eligible for CMA
  - Proportion eligible intervention patients who complete CMA
  - Number and type of comorbid conditions
  - Number and type of interventions recommended in CMA care plans, and in absence of CMA.
  - Study processes

Ultimate aims

- Improve outcomes for cancer patients
- Reduce inequities between Māori and non-Māori cancer patients

Take home messages

- Addressing inequity within health care services needs a whole of pathway approach.
- Addressing comorbidity may be one pathway where interventions may reduce inequities and improve cancer outcomes.

Acknowledgements

- Sarah Hill
- Jason Gurney
- James Stanley
- Jonathan Koea
- Virginia Signal
- Louise Signal
- Bridget Robson
- Chris Cunningham
- Chris Jackson
- Donna Cormack
- Lis Ellison-Loschmann
- Tony Blakely
- Matt Soeberg
- Andy Simpson (and many others)