Trends and disparities in cancer in Aotearoa/ NZ

Professor Diana Sarfati
#cancercrossroads
@DiSarfati
Estimated number of incident cases from 2018 to 2040 in New Zealand, all cancers, both sexes, all ages

Source: Globocan 2018, International Agency for Research on Cancer
Aggregate real ($ million 2009/10) health expenditure, 1925–2010

ALARMING HEALTHCARE COSTS

SURVIVAL OF THE RICHEST?

Cancer treatment runs the risk of becoming unaffordable
Trends in cancer incidence
Figure 1: Trends in cancer incidence by ethnic group, males and females aged 1-74 years in New Zealand 1981-2011

Key points

• The most common cancers overall are prostate, melanoma, breast, bowel and lung cancers
• The biggest killers overall are lung, bowel, breast, prostate and pancreatic cancers
• The biggest inequalities in incidence (and mortality) are for lung, stomach and liver cancers.
• Stomach and liver cancers are both in the top 5 cancer killers for Māori men.
• Nothing is static.
Drivers of cancer trends
Tobacco use is not an equal opportunity killer. Smoking disproportionately affects those most in need such as the poor, the homeless, racial minorities, LGBTQ persons and those suffering from mental illness and substance use disorders.

There are more tobacco retailers near schools in low-income areas than in other areas.

Maori Murder
Have you heard how the tobacco industry kills Maori?

R.I.P.

Here are the facts:

- Tobacco is the single biggest killer of Maori.
- It accounts for a third of all Maori deaths.
- This means higher rates of lung cancer, heart disease, cot death,
  Respiratory infections, glue ear, meningococcal
disease and diabetes.
- Almost one in two Maori smoke. That’s way higher than any other group in the country.

It’s legal genocide.

Te Reo Marama
Maori Smokefree Coalition

Te Reo Marama (the Maori Smokefree Coalition) is the organisation charged with advocacy around Maori tobacco control issues.
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Endangered species

Tobacco companies are killing Maori like you wouldn’t believe. It’s time to work together to save our most precious native species.

Join the tobacco resistance movement
Let’s get rid of tobacco
Adult obesity rate, 1977*–2012/13

Median travel distance to closest fast-food outlet for New Zealand deprivation deciles.

Drivers of cancer trends (Diving deeper)
Figure 1: Trends in cancer incidence by ethnic group, males and females aged 1-74 years in New Zealand 1981-2011

Cancer mortality by site (male)
per 100,000 age standardised

- Prostate
- Stomach
- Lung
- Colorectal

Population vs Māori
90% of distal stomach cancers caused by *H. pylori*
Estimated seroprevalence of H Pylori by birth cohort and ethnicity in New Zealand

McDonald A, Sarfati D, Baker M, Blakely T Helicobacter 2015.
Distal stomach cancer

Stomach cancer

Helicobacter Pylori

90% of distal stomach cancers caused by *H pylori*

Childhood poverty and overcrowding

Stomach cancer
Stomach cancer
Helicobacter Pylori
90% of distal stomach cancers caused by H pylori

Colonisation
Migration
Economic policies

Childhood poverty and overcrowding

Employment policies
Institutional racism
etc
Key point

• Drivers of cancer incidence and inequalities in cancer incidence are generally found outside the health system
What about cancer survival?
Survival rates are improving over time...

Excess mortality rate has been reducing by 27% each 10 years since early 1990’s for those diagnosed with bowel cancer

Australia ahead of NZ in cancer survival rates

7:53 am on 19 February 2018

Karen Brown, Health Correspondent
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The Cancer Society says 2500 more New Zealanders would have survived cancer if they had lived in Australia.
Percentage difference in cancer mortality between Māori and non-Māori, 1991-2004

Non-Māori have poorer survival

Percentage difference

Māori have poorer survival

Oesophagus
Testis
Cervix
Uterus
Kidney
Melanoma
Prostate
Head, neck and larynx
Breast (female)
Colorectum
Non-Hodgkin’s lymphoma
Liver
Lung
Stomach
Leukaemia
Hodgkin’s lymphoma
Pancreas
Ovary
Bladder
Brain
Thyroid gland

What drives survival inequities?
Stage?

(aka access to primary care/ screening/ diagnostic services)
C3 Study - Proportion Diagnosed with Advanced Disease (NZ Cancer Registry)

- Ovarian
- Stomach
- Kidney
- Colon
- Combined...
- Liver
- Rectal
- Bladder
- Uterine
- Breast

Proportion with Advanced Disease (%)

Non-Maori
C3 Study - Proportion Diagnosed with Advanced Disease (NZ Cancer Registry)

- Ovarian
- Stomach
- Kidney
- Colon
- Combined...
- Liver
- Rectal
- Bladder
- Uterine
- Breast

Proportion with Advanced Disease (%)
Health services?

(aka access to and through secondary and tertiary services)
Patients with Stage III Colon Cancer: Treatment Pathway

Percentage of cohort (stage III)

- Referred to oncologist
- Reviewed by oncologist
- Offered adjuvant chemo
- Received adjuvant chemo
- Started within 8 weeks

Comorbidity?
(aka ‘variations in case mix’)

Cancer Care at a Crossroads Conference
Hypertension (Primary)

- Stomach: Non-Māori
- Bladder: Non-Māori
- Liver: Non-Māori
- Breast: Non-Māori
- Rectal: Non-Māori
- Colon: Non-Māori
- Uterine: Non-Māori
- Combined Sites: Non-Māori
- Kidney: Non-Māori
- Ovarian: Non-Māori

Crude Prevalence (%)

Source: Sarfati, Gurney, et al. (2014). C3 (Quantitative) study.
Hypertension (Primary)

- Stomach
- Bladder
- Liver
- Breast
- Rectal
- Colon
- Uterine
- Combined Sites
- Kidney
- Ovarian

Crude Prevalence (%)

Source: Sarfati, Gurney, et al. (2014). C3 (Quantitative) study.
Diabetes (Any)

- Kidney
- Uterine
- Stomach
- Colon
- Bladder
- Combined Sites
- Ovarian
- Rectal
- Liver
- Breast

Crude Prevalence (%)

Source: Sarfati, Gurney, et al. (2014). C3 (Quantitative) study.
Breast
Liver
Rectal
Ovarian
Combined Sites
Bladder
Kidney
Colon
Stomach
Ovarian
Rectal
Liver
Kidney
Uterine
Stomach
Colon
Bladder
Combined Sites

Crude Prevalence (%)

Source: Sarfati, Gurney, et al. (2014). C3 (Quantitative) study.
Cancer Patient Mortality with Increasing Comorbidity

Breast

Urological

Colorectal

Gynaecological

Upper GI

Adjusted All-Cause Excess Mortality (%)

Source: Sarfati, Gurney, et al. (2014). C3 (Quantitative) study.
Impact of comorbidity on cancer treatment

Impact of comorbidity on 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).

• The relatively low treatment rates for some patients with comorbidity may not be justifiable

Pilot of Intervention study to address comorbidity in patients with CRC

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Control eligible for CMA</th>
<th>Intervention eligible for CMA</th>
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<tbody>
<tr>
<td>% referred to oncology</td>
<td>49% (17/35)</td>
<td>59% (17/29)</td>
</tr>
<tr>
<td>% received chemo</td>
<td>40% (14/35)</td>
<td>38% (11/29)</td>
</tr>
<tr>
<td>Patient completed chemo as planned</td>
<td>0% (0/14)</td>
<td>55% (6/11)</td>
</tr>
<tr>
<td>Patient had adverse event (gd 3/4)</td>
<td>28.6% (10/35)</td>
<td>27.6% (8/29)</td>
</tr>
<tr>
<td>Unplanned hospitalisations</td>
<td>6% (2/35)</td>
<td>17% (5/29)</td>
</tr>
<tr>
<td>Emergency clinic attendance</td>
<td>23% (8/35)</td>
<td>24% (7/29)</td>
</tr>
</tbody>
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Hot off the press: please don’t cite
Take home messages

- Cancer incidence is increasing
- Costs of treatment are increasing (rapidly)
- Trends in incidence are driven by factors outside of the health system
- Cancer control is complex and includes the entire health system
- Cancer survival is improving but inequities exist
- **Addressing the cancer burden now and into the future requires clear vision, strong leadership and broad-based action within and outside the health system**

#cancercrossroads
@DiSarfati