

# Socio-economic and ethnic inequalities in cancer mortality

Tony Blakely

Results from the New Zealand Census-Mortality Study

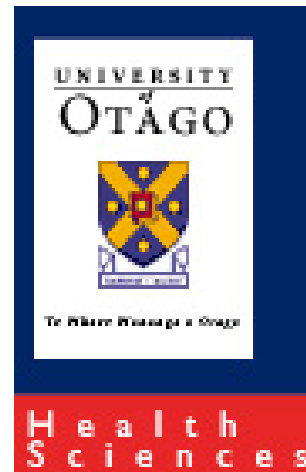
[www.wnmeds.ac.nz/nzcms-info.html](http://www.wnmeds.ac.nz/nzcms-info.html)

[www.otago.ac.nz/NZCMSWebTable](http://www.otago.ac.nz/NZCMSWebTable)

Prepared for Massey Cancer Symposium, 18 Nov 2004



MANATŪ HAUORA



# Overview

Pull together data on trends in cancer mortality by :

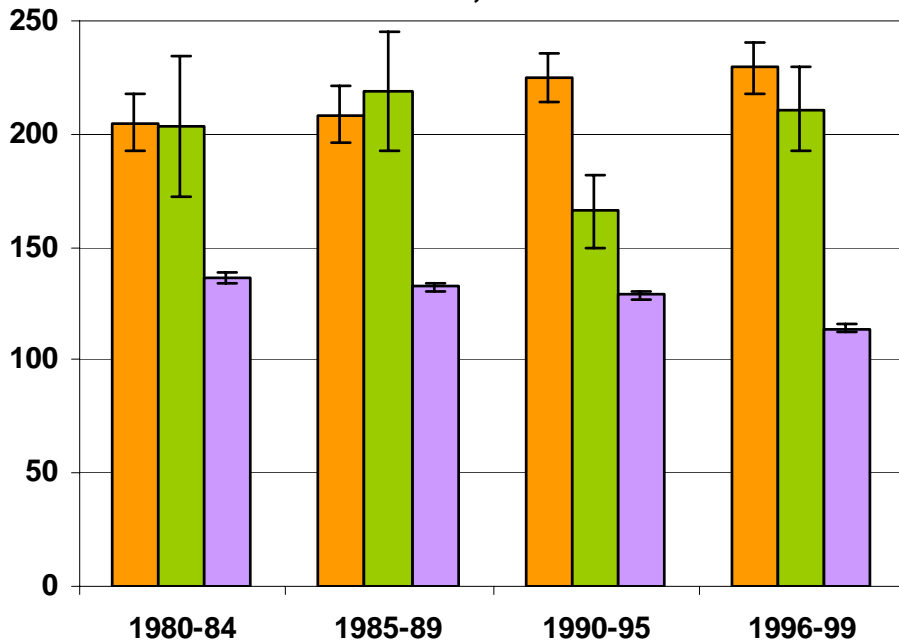
- **ethnicity** (NZCMS: Decades of Disparity I, 2003)
- **income and education** (NZCMS: Decades of Disparity II, to be launched early 2005)

Conclude with comments on how social inequalities in cancer may arise and, conversely, be prevented

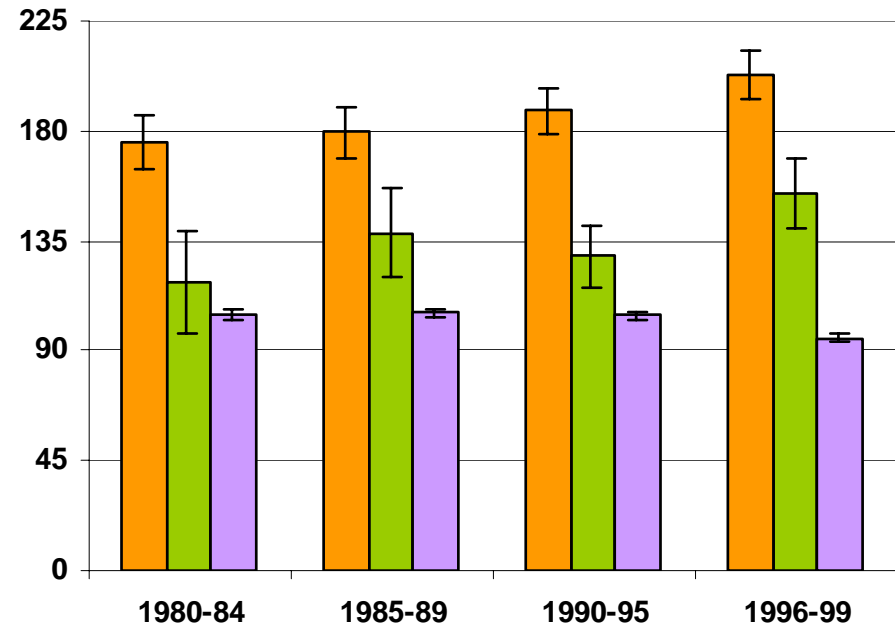
# All cancer, by ethnicity

(1-74 yrs, Decades of Disparity I, prioritised)

All cancer, males

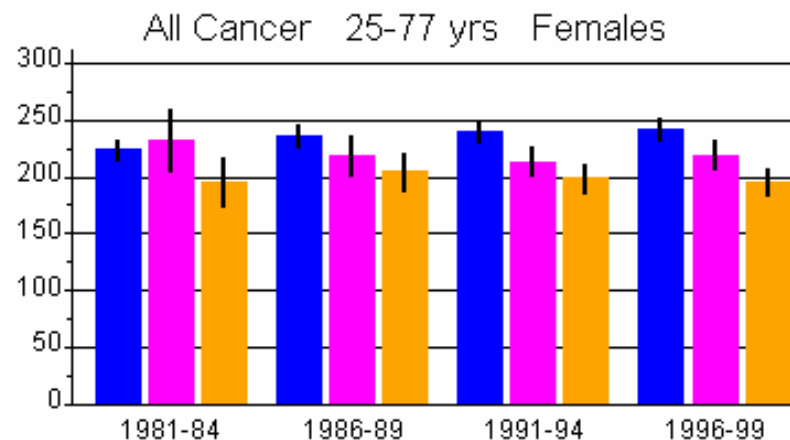
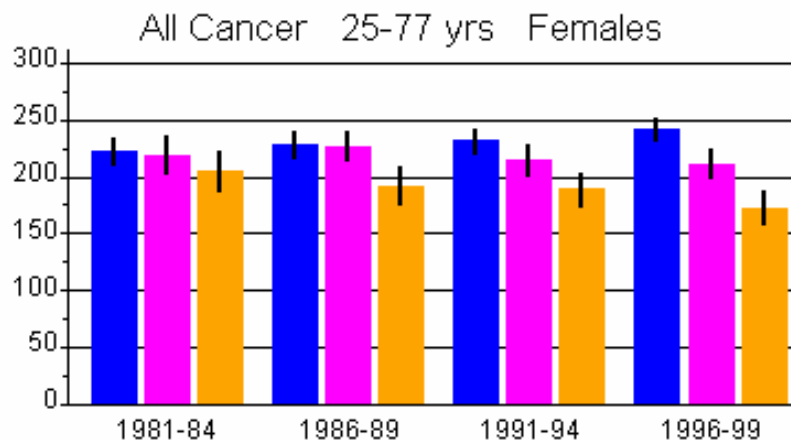
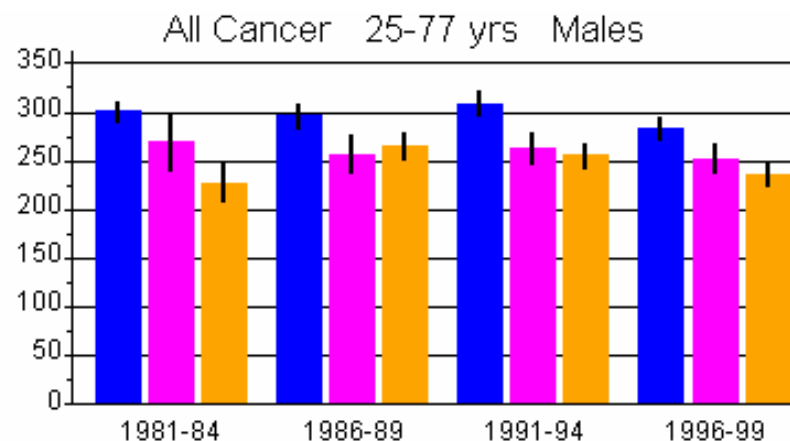
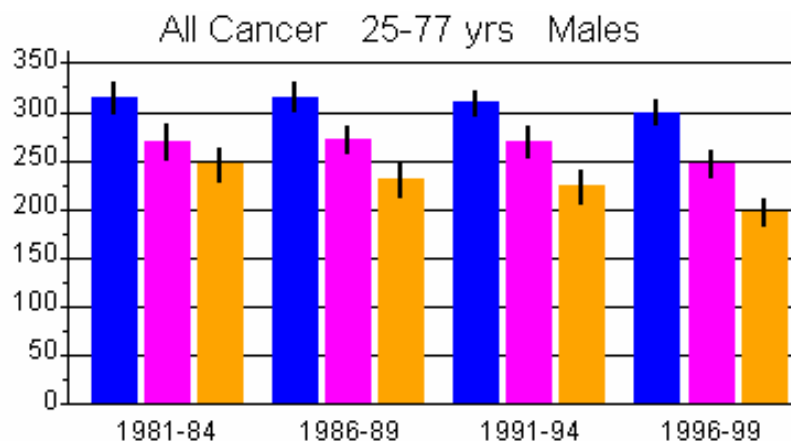


All cancer, females



Maori Pacific non-Maori non-Pacific

# All cancer, by income and education



■ Low Income    
 ■ Medium Income    
 ■ High Income

Produced from the New Zealand Census-Mortality Study (NZCM)

■ No Qual    
 ■ School Qual    
 ■ Post-Sch Qual

Produced from the New Zealand Census-Mortality Study (NZCMS)

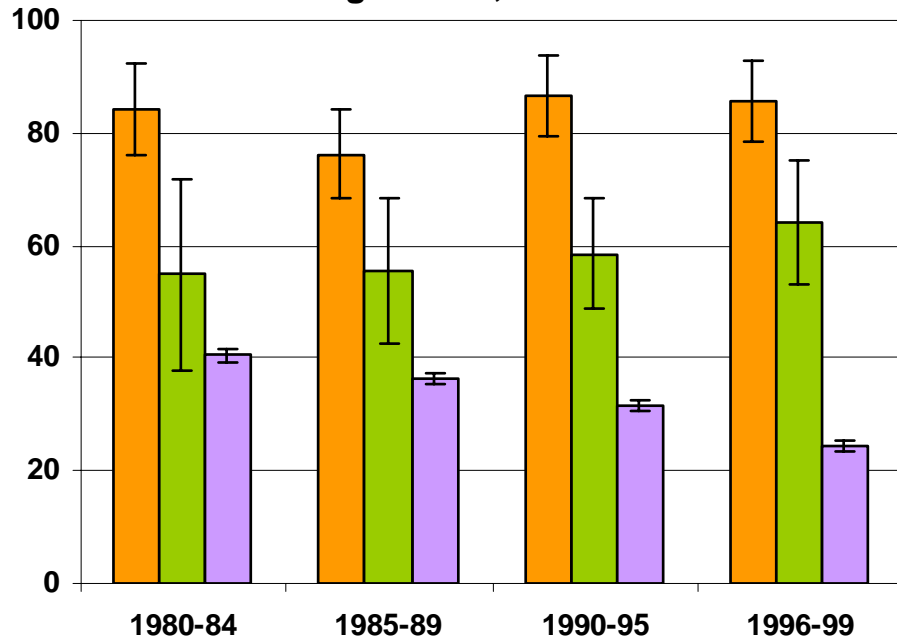
# All cancer, relative risk by income

Sex	Age	Cohort	Relative index of inequality (RII; 95% CI)	
Males	25-77 yrs	1981-84	1.5	(1.3 - 1.7)
		1986-89	1.5	(1.3 - 1.7)
		1991-94	1.8	(1.6 - 2.1)
		1996-99	2.0	(1.8 - 2.3)
		<i>P (Trend)</i>	<i>0.04</i>	
Females	25-77 yrs	1981-84	1.2	(1.0 - 1.3)
		1986-89	1.3	(1.1 - 1.5)
		1991-94	1.4	(1.2 - 1.6)
		1996-99	1.8	(1.6 - 2.1)
		<i>P (Trend)</i>	<i>0.04</i>	

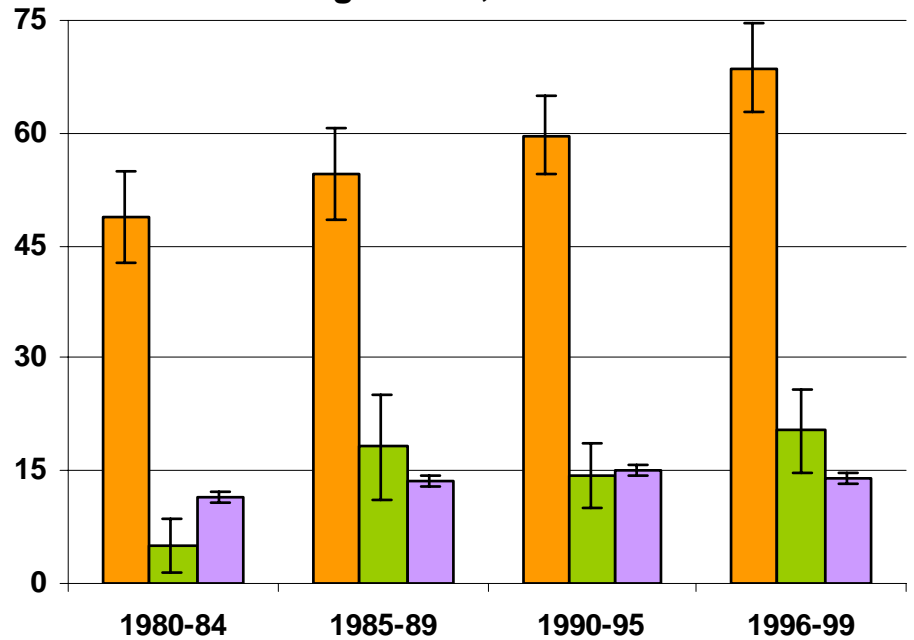
# Lung cancer

(1-74 yrs, Decades of Disparity I, prioritised)

Lung cancer, males

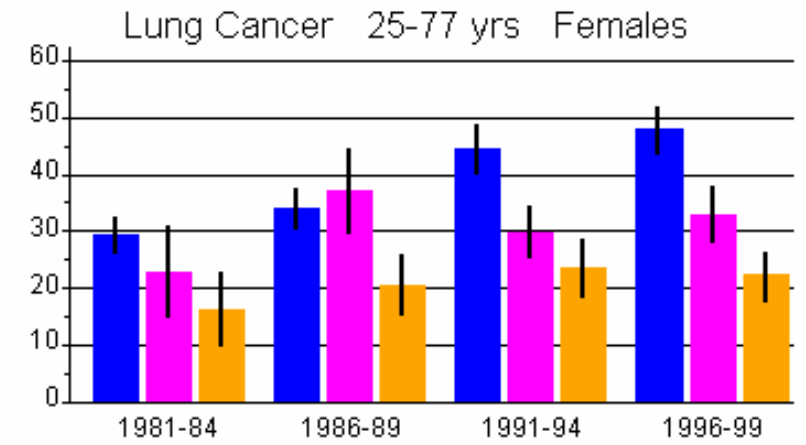
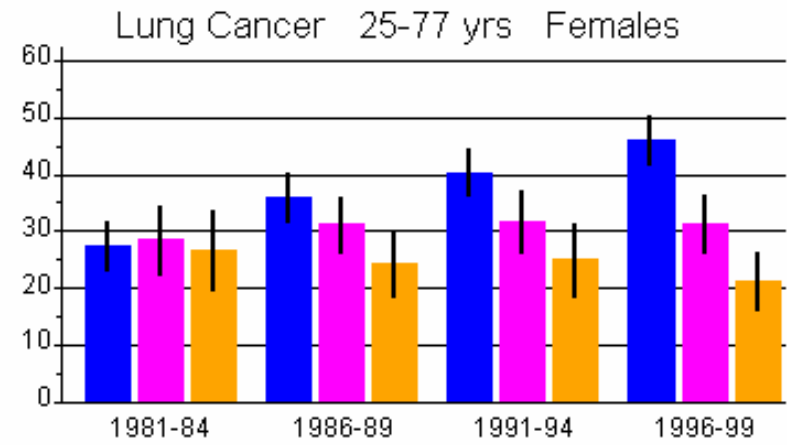
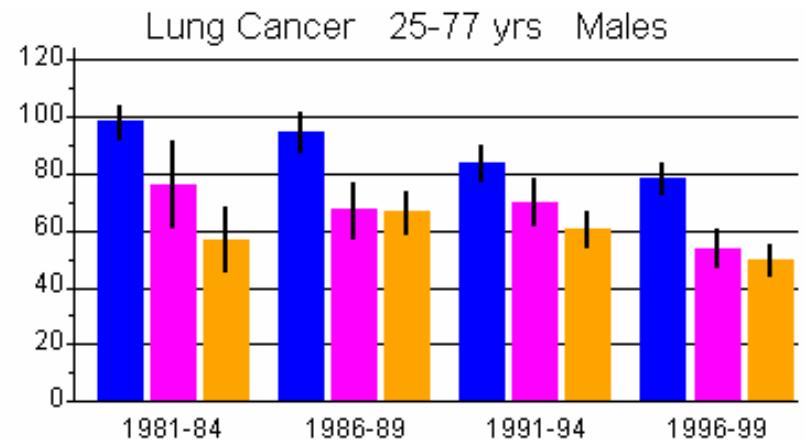
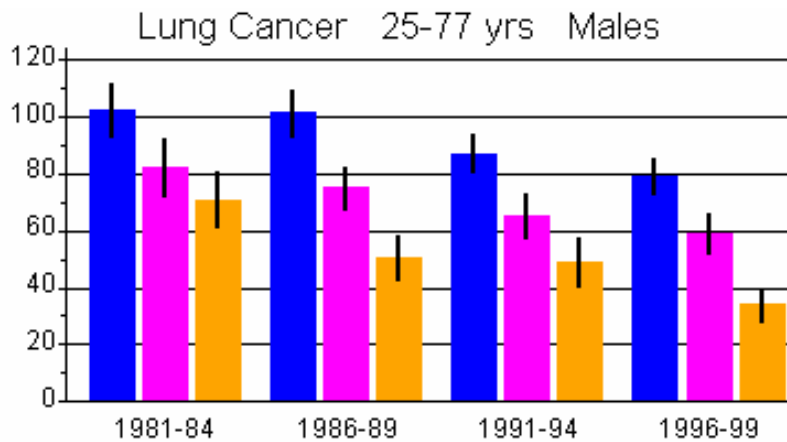


Lung cancer, females



Maori Pacific non-Maori non-Pacific

# Lung cancer, by education and income



■ Low Income    
 ■ Medium Income    
 ■ High Income

■ No Qual    
 ■ School Qual    
 ■ Post-Sch Qual

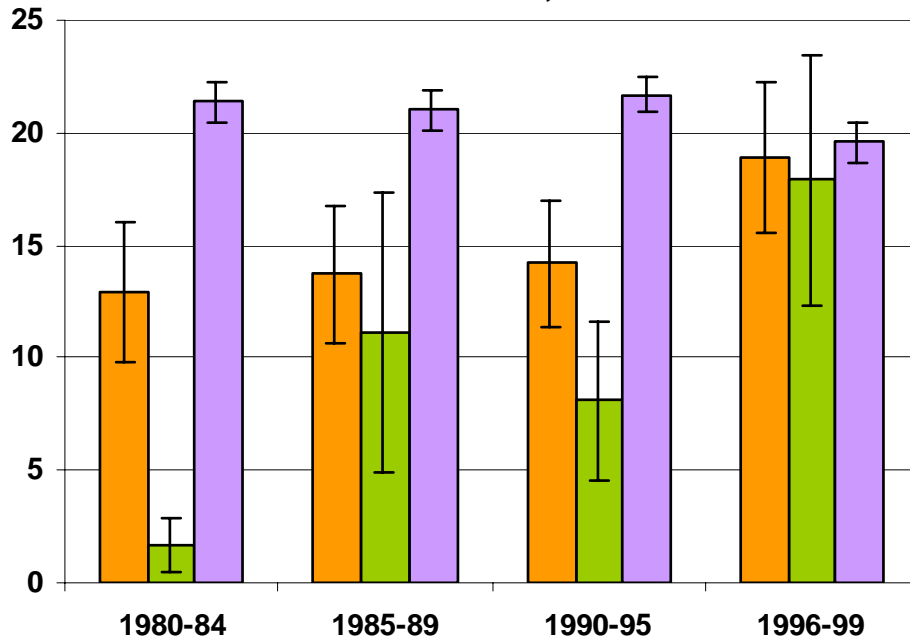
Produced from the New Zealand Census-Mortality Study (NZCM)

Produced from the New Zealand Census-Mortality Study (NZCMS)

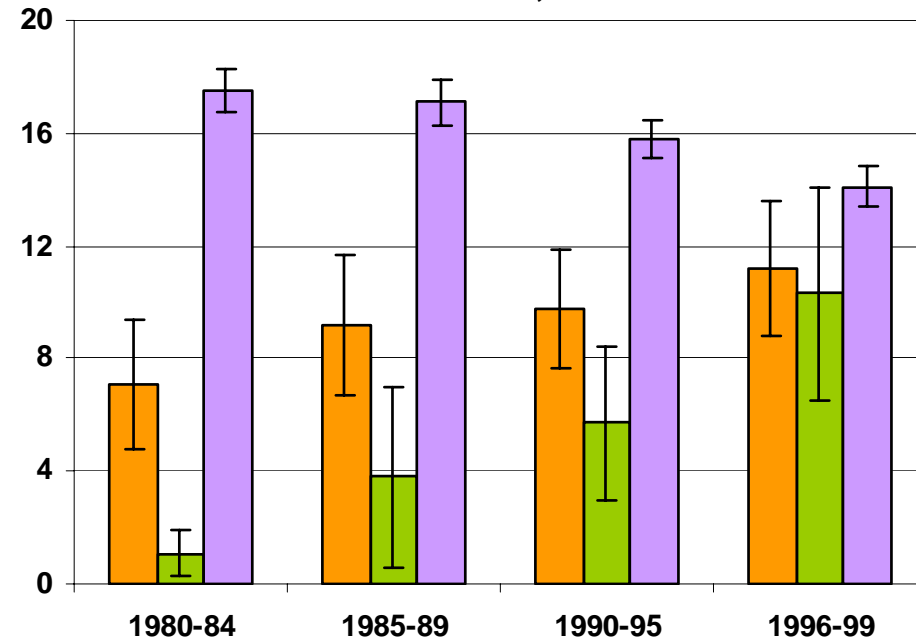
# Colorectal Cancer

(1-74 yrs, Decades of Disparity I, prioritised)

Colorectal cancer, males



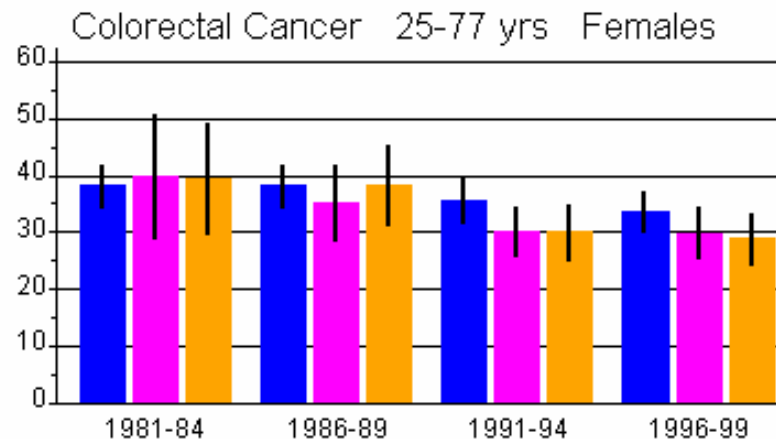
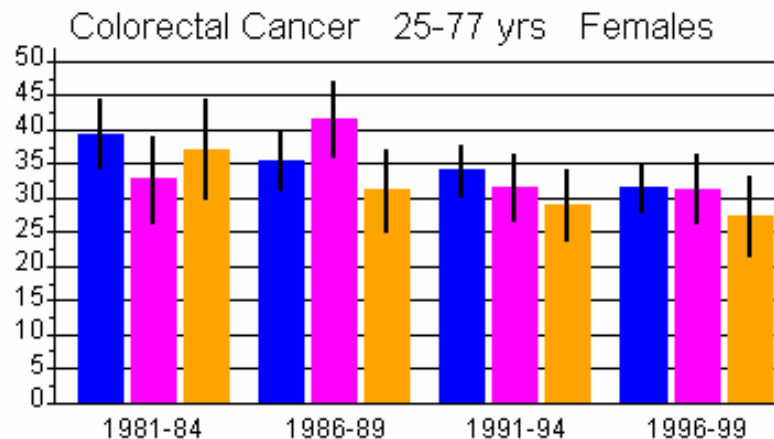
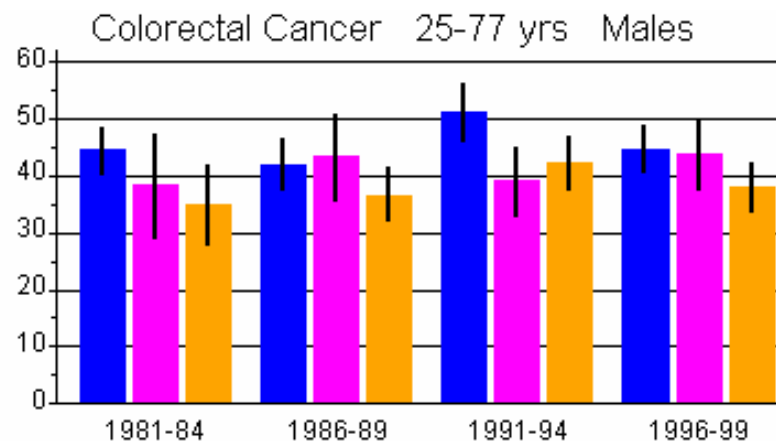
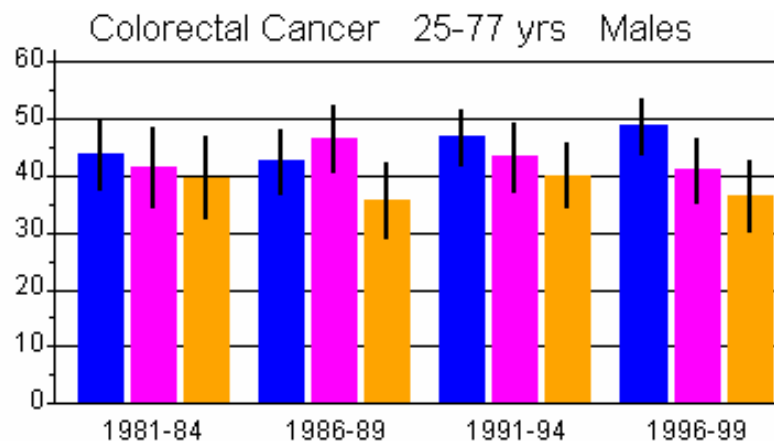
Colorectal cancer, females



■ Maori   ■ Pacific   ■ non-Maori non-Pacific



# Colorectal cancer, by income and education



■ Low Income    ■ Medium Income    ■ High Income

Produced from the New Zealand Census-Mortality Study (NZCM)

■ No Qual    ■ School Qual    ■ Post-Sch Qual

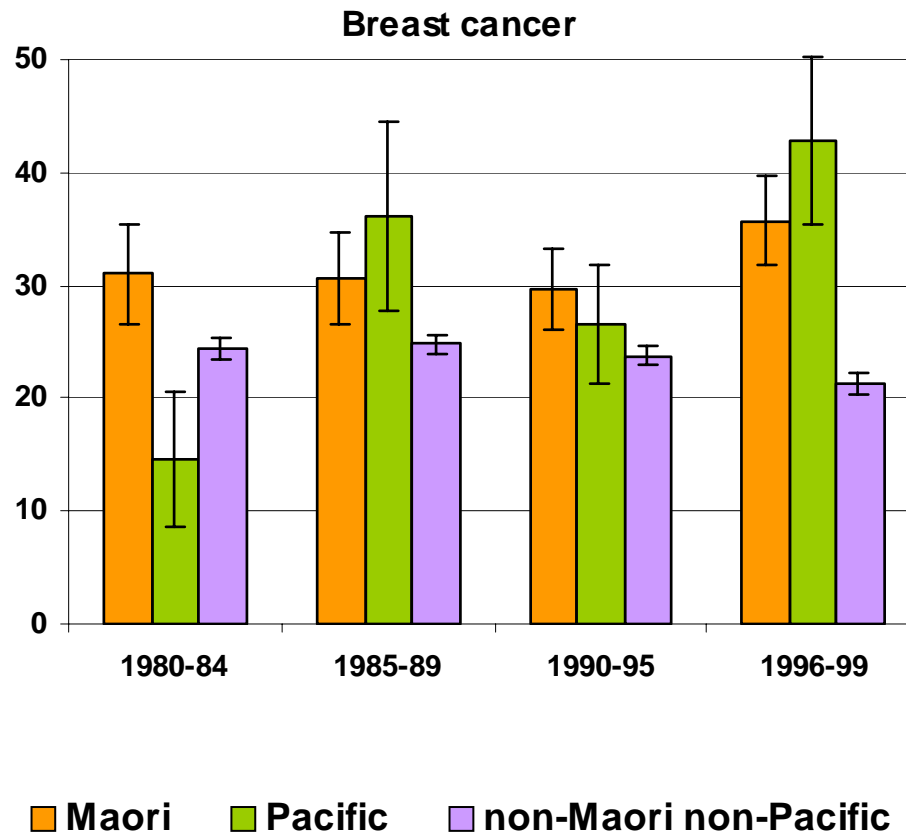
Produced from the New Zealand Census-Mortality Study (NZCMS)

# Colorectal cancer, relative risk by income

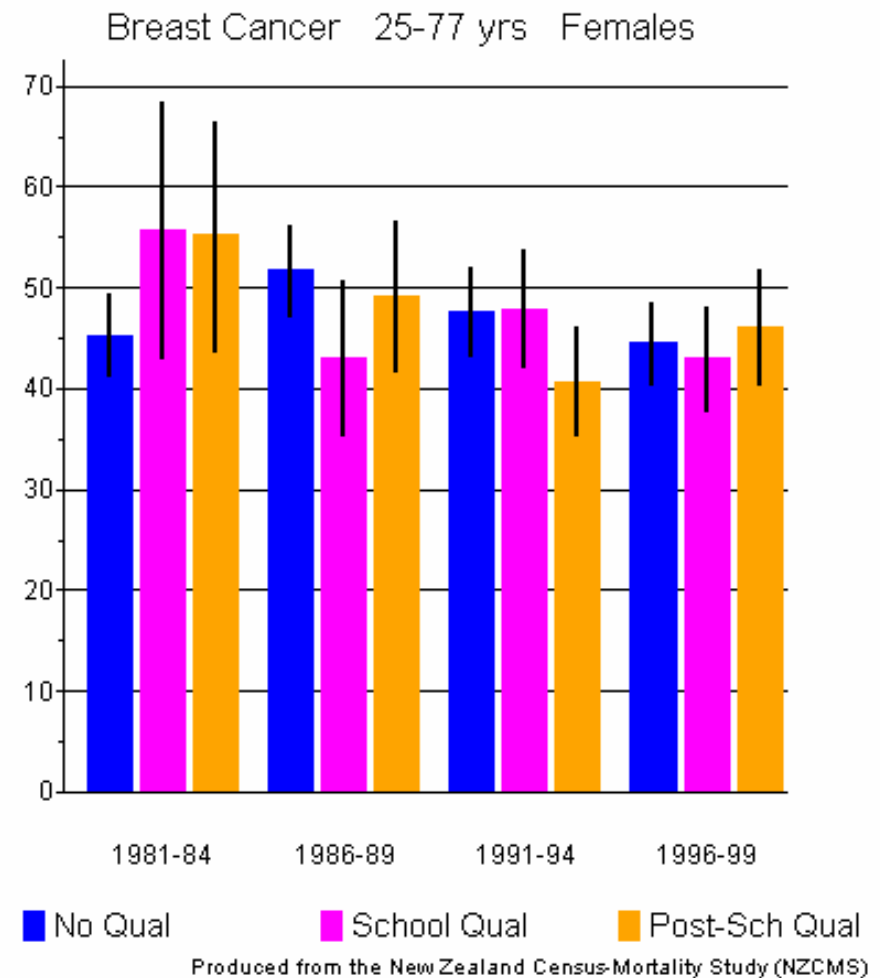
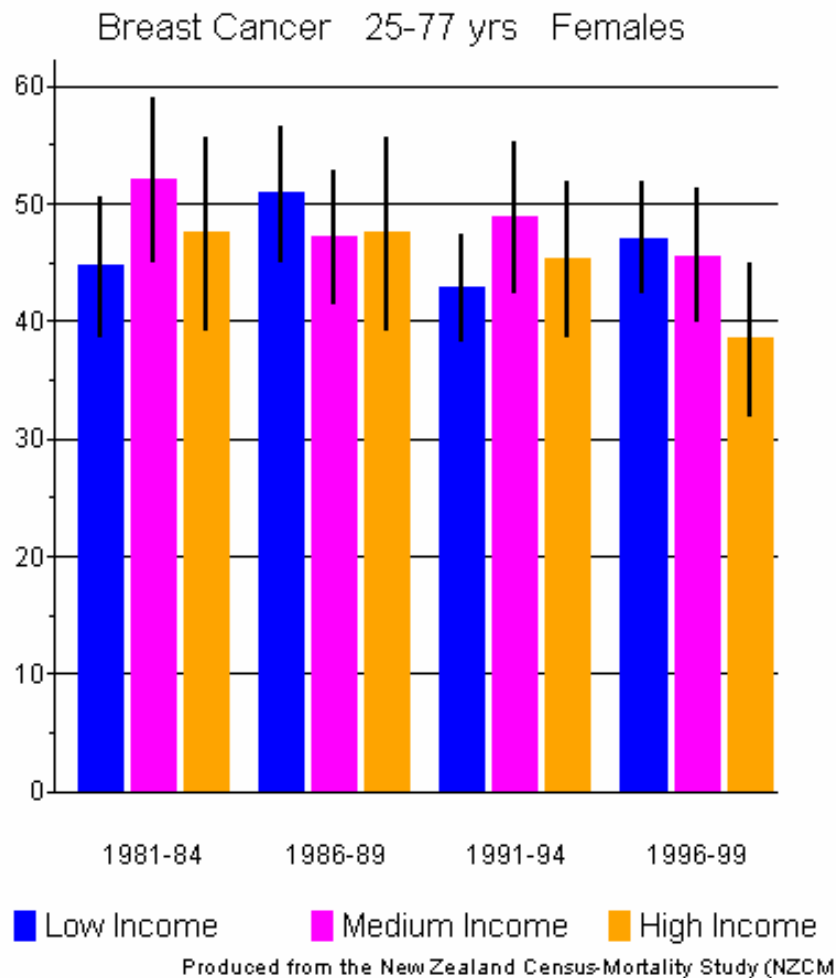
Sex	Age	Cohort	Relative index of inequality (RII; 95% CI)	
Males	25-77 yrs	1981-84	1.2	(0.9 - 1.7)
		1986-89	1.1	(0.7 - 1.6)
		1991-94	1.5	(1.1 - 1.9)
		1996-99	1.8	(1.3 - 2.5)
		<i>P (Trend)</i>	<i>0.12</i>	
Females	25-77 yrs	1981-84	1.0	(0.7 - 1.5)
		1986-89	1.1	(0.8 - 1.4)
		1991-94	1.2	(0.9 - 1.7)
		1996-99	1.4	(1.0 - 1.9)
		<i>P (Trend)</i>	<i>0.02</i>	

# Breast Cancer

(1-74 yrs, Decades of Disparity I, prioritised)



# Breast cancer, by income and education



# Breast cancer, relative risk by income

<b>Sex</b>	<b>Age</b>	<b>Cohort</b>	<b>Relative index of inequality (RII; 95% CI)</b>	
<b>Females</b>	<b>25-77 yrs</b>	<b>1981-84</b>	<b>1.0</b>	<b>(0.7 - 1.3)</b>
		<b>1986-89</b>	<b>1.1</b>	<b>(0.9 - 1.5)</b>
		<b>1991-94</b>	<b>0.9</b>	<b>(0.7 - 1.2)</b>
		<b>1996-99</b>	<b>1.5</b>	<b>(1.1 - 1.9)</b>
		<b><i>P (Trend)</i></b>	<b><i>0.38</i></b>	

# Summary of cancer inequality trends:

*Not everything is increasing, but there ain't  
nothing going down*

Cancer	Ethnicity (Māori cf nMnP)		Ethnicity (Pacific cf nMnP)		Income		Education	
	Male	Female	Male	Female	Male	Female	Male	Female
	All	↑	↑	↑	↑	↑	↑↑	-
Lung	↑	↑	↑↑	↑↑	↑	↑↑↑	-	↑↑
Colorectal	↑↑	↑↑	↑↑↑	↑↑↑	↑	↑	-	↑
Breast	█	↑	█	↑↑	█	?↑	█	?

# Why are inequalities in cancer increasing?

- Trends in risk factors (e.g. tobacco) for cancer vary by ethnicity and socio-economic position
- Screening programmes being established
  - coverage varies by ethnicity and socio-economic position
- Treatment for cancer is improving
  - strongly suspect that access to and through health services varies by ethnicity and socio-economic position
- Therefore, we should anticipate inequalities in cancer to increase
  - NZCMS data suggests that is already happening

# What to do?

- Research:
  - where along the continuum of etiology, detection and treatment are inequalities mostly arising?
  - what works to prevent these inequalities arising?
- Policy:
  - Cancer Control Strategy - stand by its second purpose
  - more of the same (e.g. HEHA, tobacco control), but even more focused on reducing inequalities
  - health systems and practitioners scrutinize their own practice



# Acknowledgments

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