



Cancer Control and Screening
Research Group
Wellington

Ethnic inequities in rectal, liver and stomach cancer patient pathways

Findings from the Notes Review: Cancer, Care and Comorbidity (C3) studies



Methods

Hospital **note review** of 780 patients diagnosed 2006-2008

- 194 rectal, 189 liver, 335 stomach final cohorts
- Equal number Māori and non-Māori
- Detailed data on patient, tumour and treatment factors
- Small sample sizes, so most results should be considered indicative only





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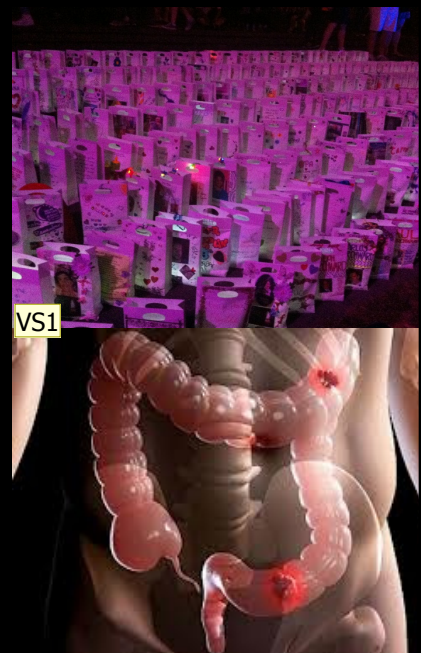
Rectal Cancer

Assoc Prof Diana Sarfati



In New Zealand ...

- Around 3000 CRC every year of which about **a third** are rectal cancers in New Zealand
- Incidence decreasing but rates between Māori and non-Māori **converging**
- Colorectal cancer is the **second highest** cause of cancer death in New Zealand
- About **300** people died of rectal cancer alone in 2009 in New Zealand



Slide 4

VS1

I have left one slide in each describing the cancer's incidence/etc and inequity. This may be too wordy for you

Virginia Signal, 31/03/2014

Rectal cancer: The patients...

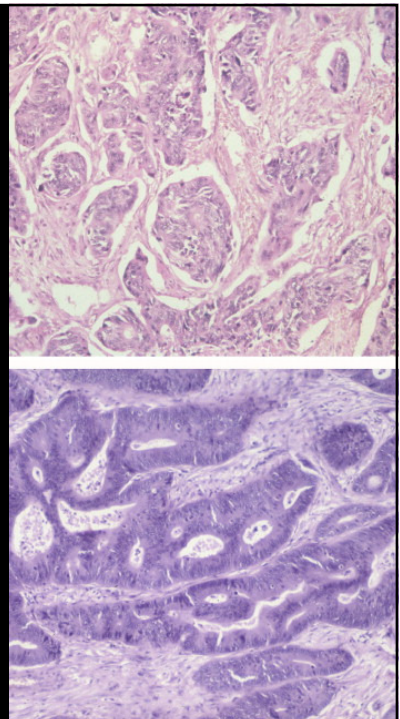
- Two-thirds of patients were **male**
- Nearly half Māori patients were **under 65 yrs** (46%), compared with a third of non-Māori (32%)
- Māori patients somewhat more likely to have **comorbidity** compared with non-Māori



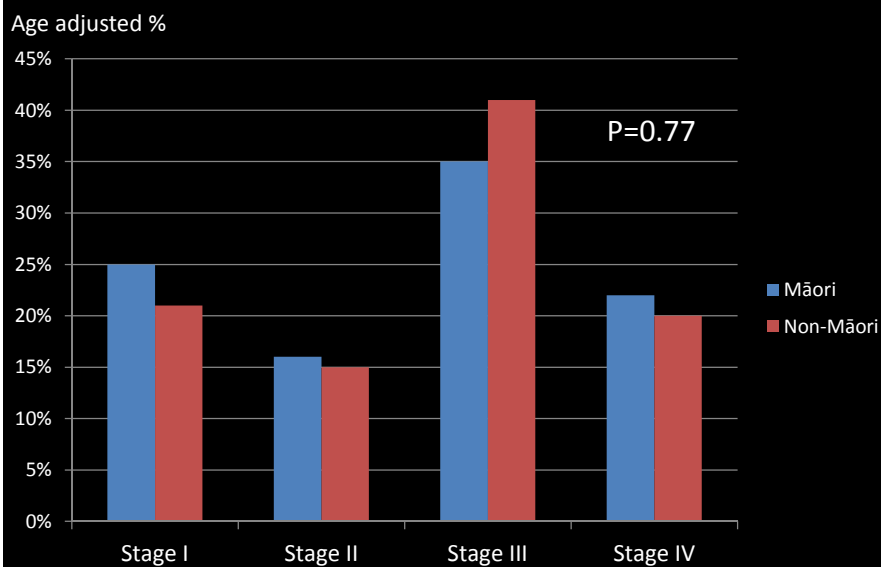
Rectal cancer: Some things looked very similar...

Tumour characteristics and rates of surgery were similar

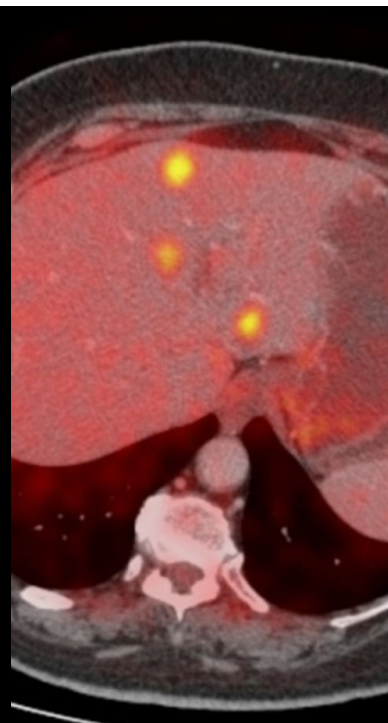
- No significant difference between Māori and non-Māori in terms of **grade**, **size** or **stage** of tumour
- 97% of patients underwent definitive **surgery**
- Two-thirds of all patients treated by **CR surgeons**



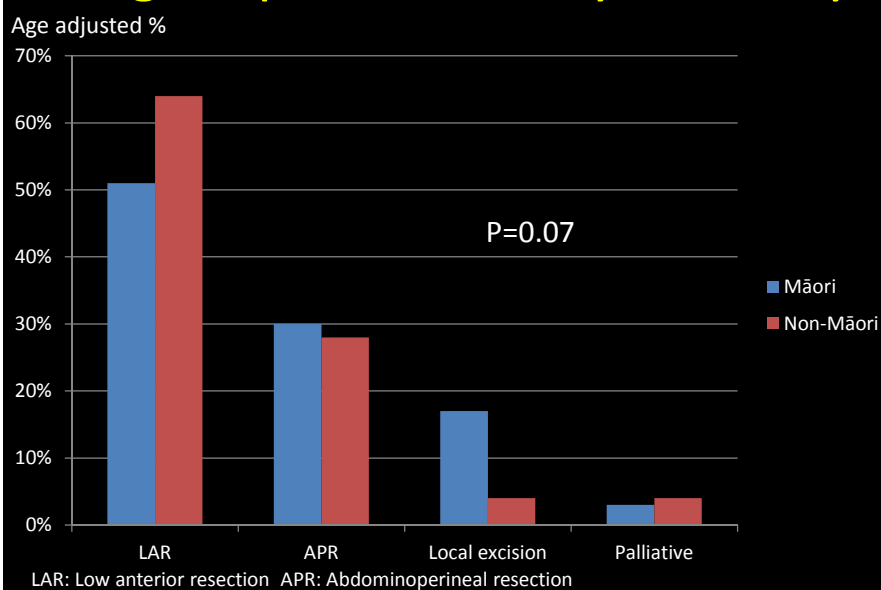
Stage at diagnosis by ethnicity



Swart E; Sarfati D; Cunningham R; Dennett E et al. NZ Med J (2013)



Surgical procedures by ethnicity

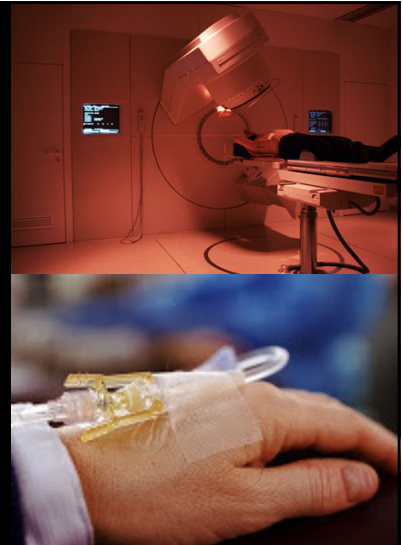


Swart E; Sarfati D; Cunningham R; Dennett E et al. NZ Med J (2013)



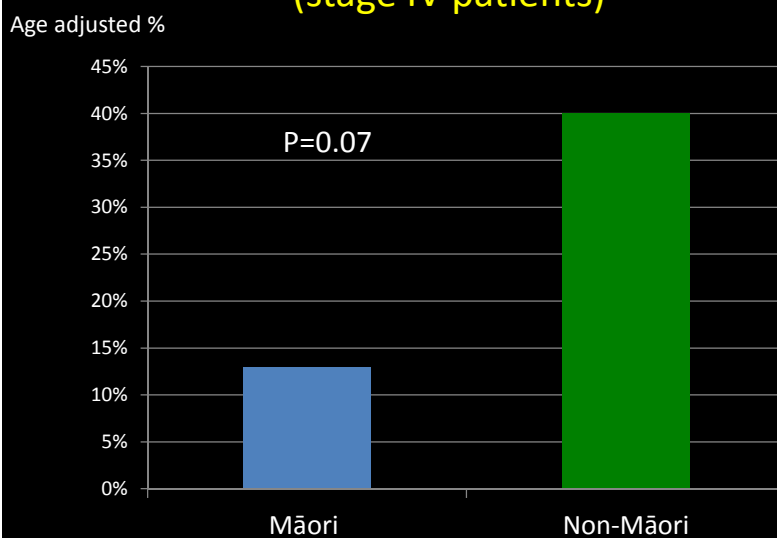
Neoadjuvant and adjuvant therapies

- Similar proportions of Māori and non-Māori receiving pre/post op **chemo** and **radiotherapy**
- **Waiting times** similar between diagnosis and first treatment (37 days)
- Māori waited longer between diagnosis and referral to oncology:
 - 40 vs 33 days for med onc ($p=0.03$)
 - 27 vs 19 days for rad onc ($p=0.26$)



Swart E; Sarfati D; Cunningham R; Dennett E et al. NZ Med J (2013)

Referral to palliative care (stage IV patients)

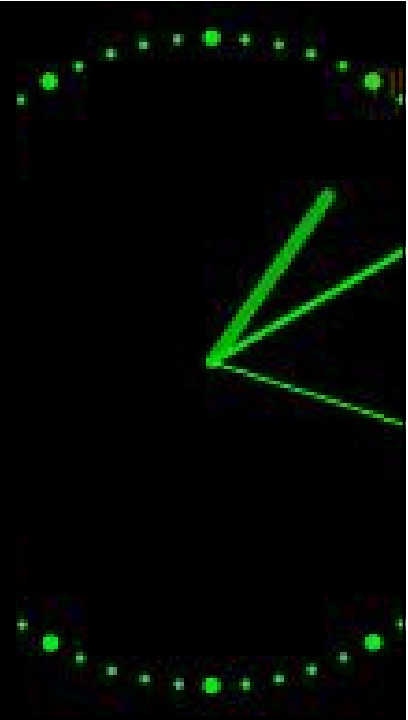


Swart E; Sarfati D; Cunningham R; Dennett E et al. NZ Med J (2013)



Rectal Cancer: Survival^{VS2}

- Imprecise estimation of survival disparity
- HR 1.24; 95% CI 0.65 - 2.35
 - (age, stage, grade adjusted)



In a nutshell...

- Māori patients younger at diagnosis, and higher comorbidity
- Similar disease characteristics between Māori and non-Māori patients
- Many similarities in care for Māori and non-Māori patients
- Possible differences in:
 - Type of surgical procedure
 - Waiting time to referral for adjuvant care
 - Palliative services



Slide 11

VS2

Added this slide in - this was on a methods slide at the start of rectal cancer
Virginia Signal, 31/03/2014



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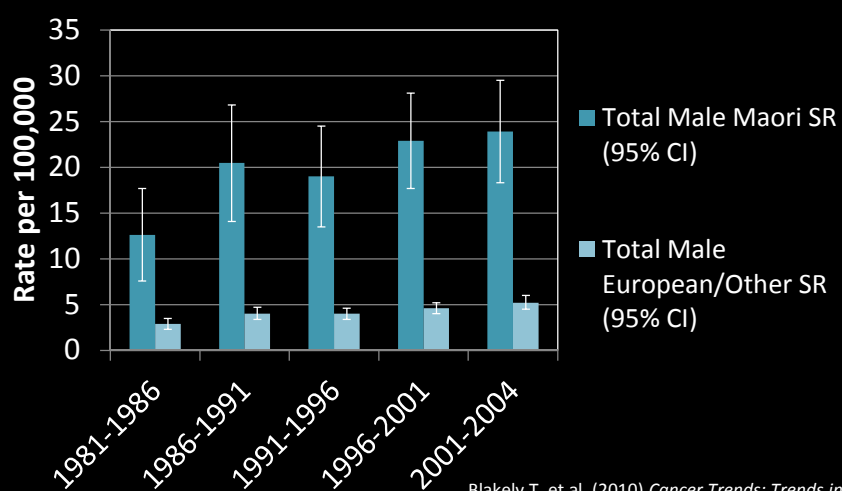
Liver Cancer

Ruth Cunningham

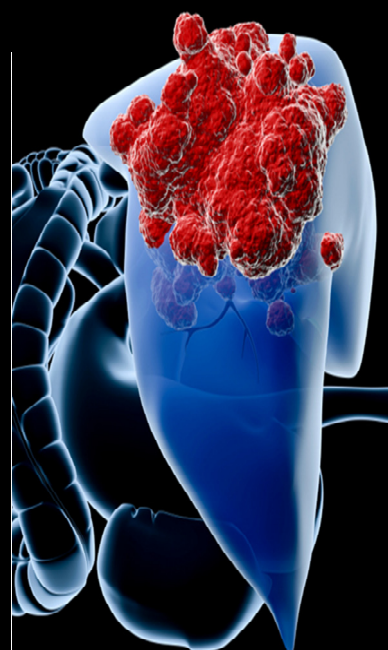


In New Zealand ...

Standardised incidence rates for 25+ year-old males



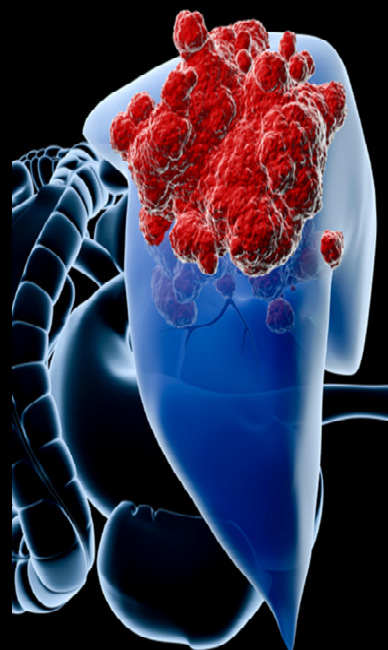
Blakely T, et al. (2010) *Cancer Trends: Trends in Incidence by Ethnic and Socioeconomic Group, New Zealand 1981–2004*. Wellington



Liver cancer: The patients

- 97 Māori, 92 non-Māori
- 80% male
- Average age 62
 - Māori 59, non-Māori 65
- 2/3rds had stage 3 or 4 (late stage) disease at presentation

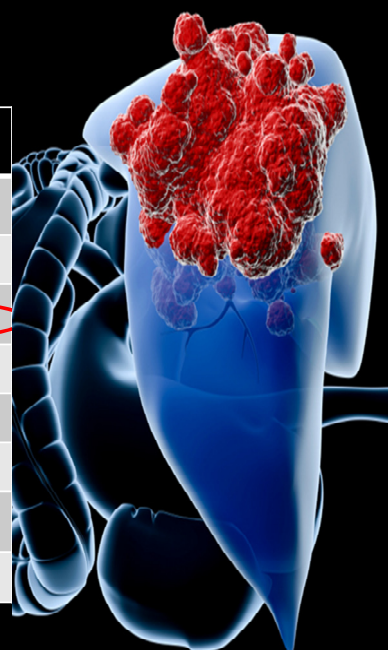
Chamberlain, J. et al. Incidence and management of hepatocellular carcinoma among Maori and non-Maori New Zealanders (ANZJPH 2013).



Comorbidity and risk factors

	Total (n=189)		Māori (n=97)			Non-Māori (n=92)			
	n	%*a	n	%*b	%*c	N	%*b	%*c	P value*d
Comorbid conditions									
Cirrhosis	103	57%	45	46%	41%	58	63%	62%	<0.01
Heavy alcohol use	74	40%	36	37%	35%	38	41%	39%	0.40
Hypertension	67	33%	42	43%	51%	25	27%	25%	<0.01
Diabetes	64	33%	34	35%	38%	30	33%	31%	0.36
Congestive Heart Failure	22	12%	11	11%	17%	11	12%	11%	0.31
Chronic Pulmonary Dis	24	13%	12	12%	17%	12	13%	13%	0.36

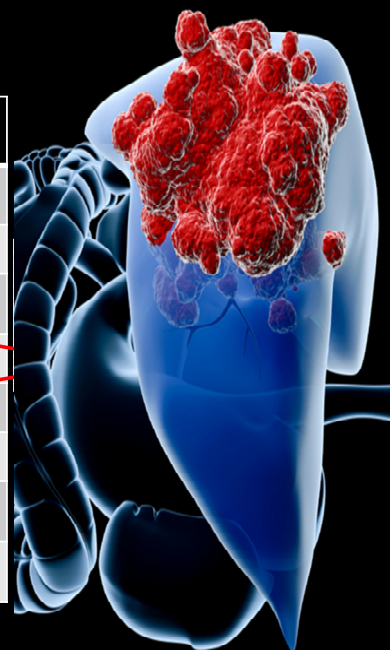
Notes: *a Weighted *b crude *c Age Adjusted *d Chi square



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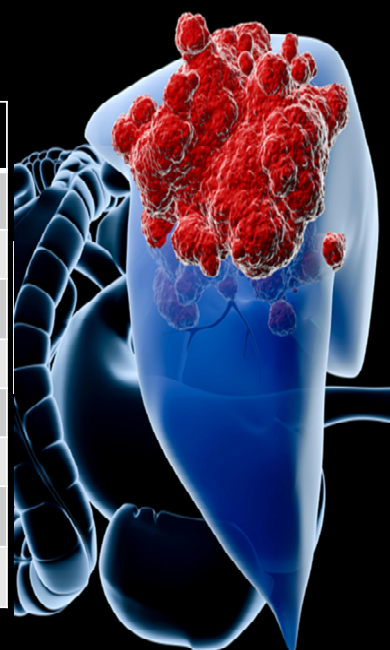
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Comorbidity and risk factors

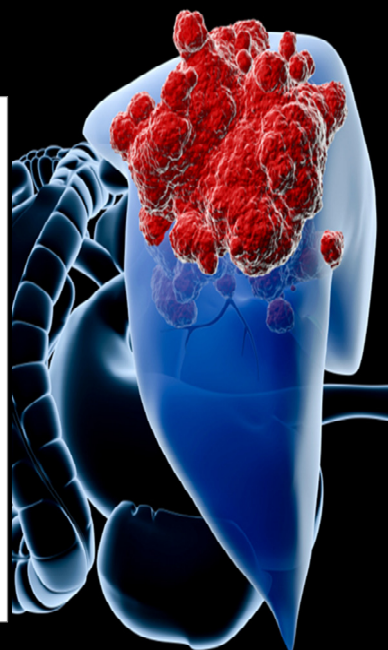
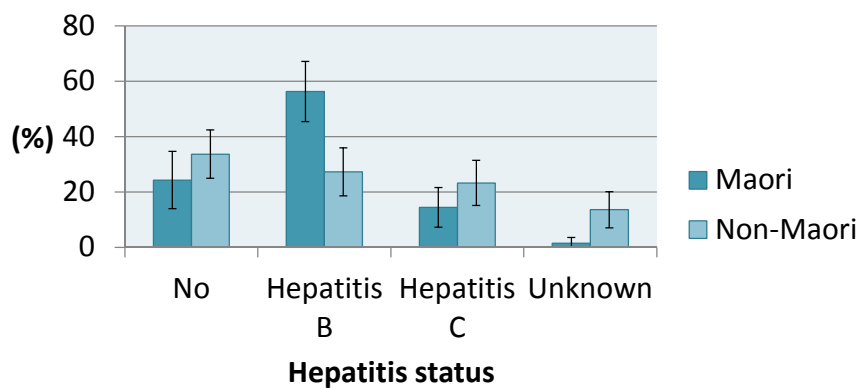
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Risk Factors

Age standardised percentage of patients with viral hepatitis (95% CI)

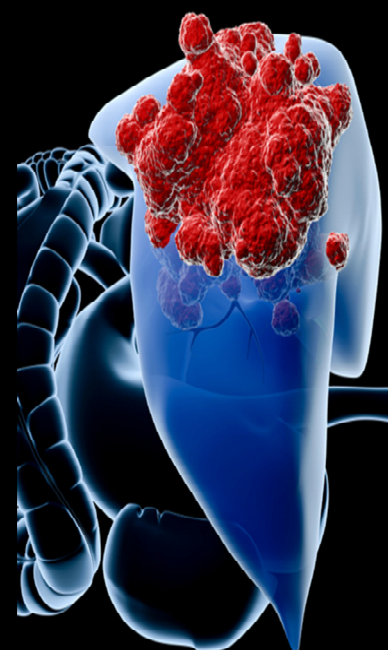


Surveillance

Surveillance Status of those with Hepatitis B, C or no hepatitis

	Total		Māori		Non-Māori		P value*c
	n	% *a	n	%*b	n	%*b	
On surveillance	62						
Hepatitis B	32	38%	23	37%	9	39%	0.95
Hepatitis C	21	59%	7	41%	14	67%	0.17
No hepatitis	9	19%	0	0%	9	28%	0.007

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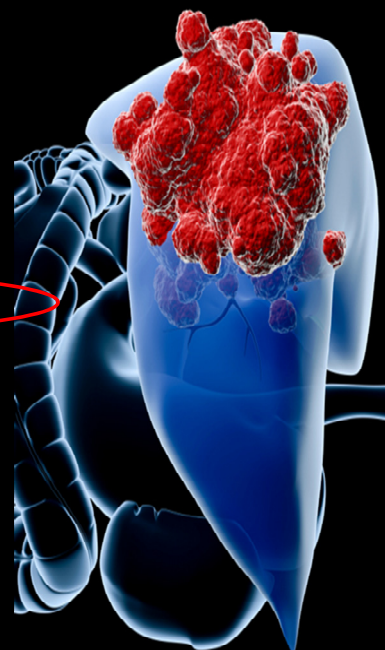


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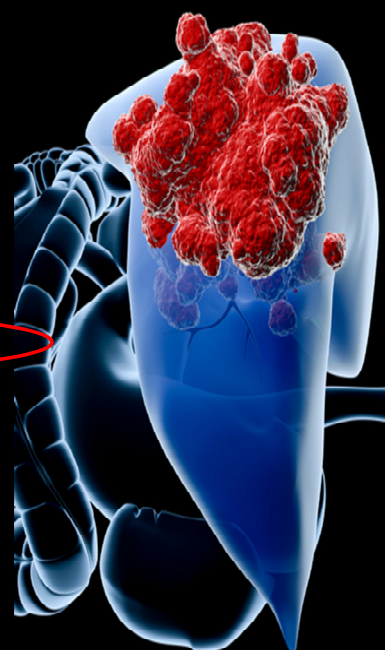


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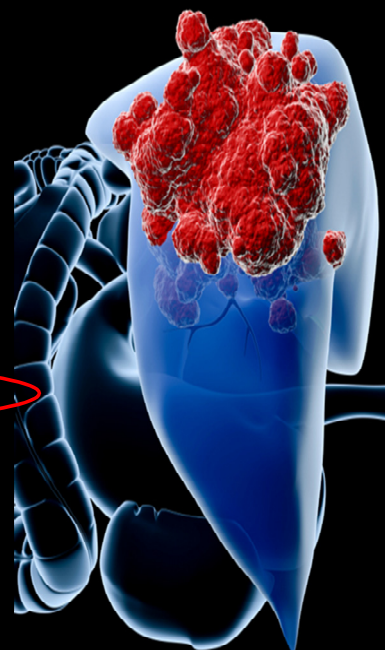


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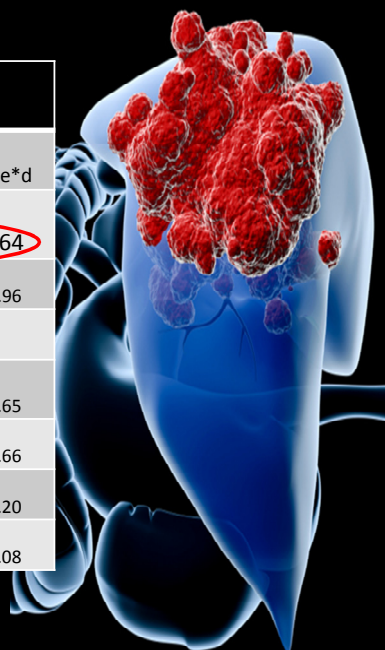
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Treatment

	Total (n=189)			Māori (n=97)			Non-Māori (n=92)			P value*d
	n	%*a		n	%*b	%*c	N	%*b	%*c	
Definitive surgery	43	22%		24	25%	21%	19	21%	21%	0.64
Palliative care referral	120	64%		61	63%	62%	59	64%	64%	0.96
Adjuvant treatment										
TACE	38	21%		18	19%	23%	20	22%	21%	0.65
Radiation	12	7%		5	5%	4%	7	8%	7%	0.66
Portal Vein Embolisation	6	4%		2	2%	1%	4	4%	5%	0.20
Palliative Chemo	2	1%		0	0%	0%	2	2%	2%	0.08

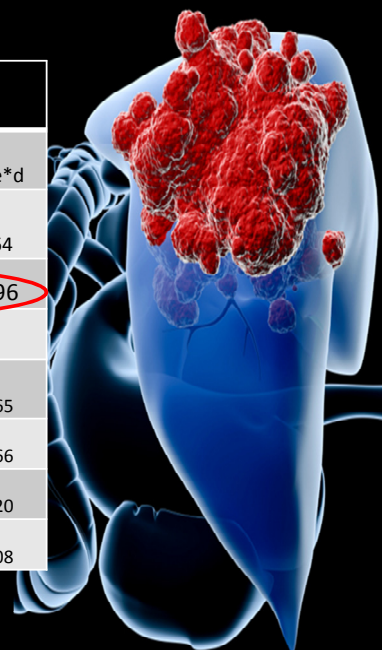
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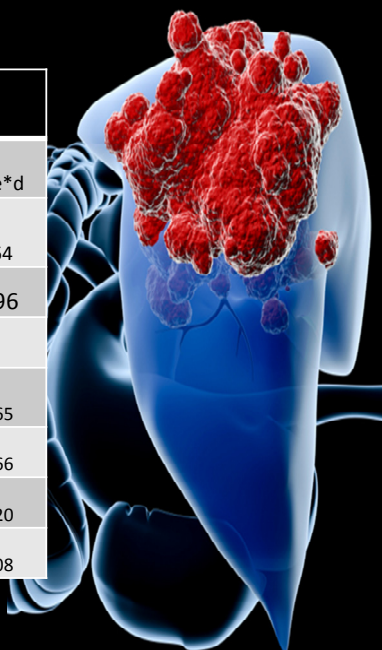
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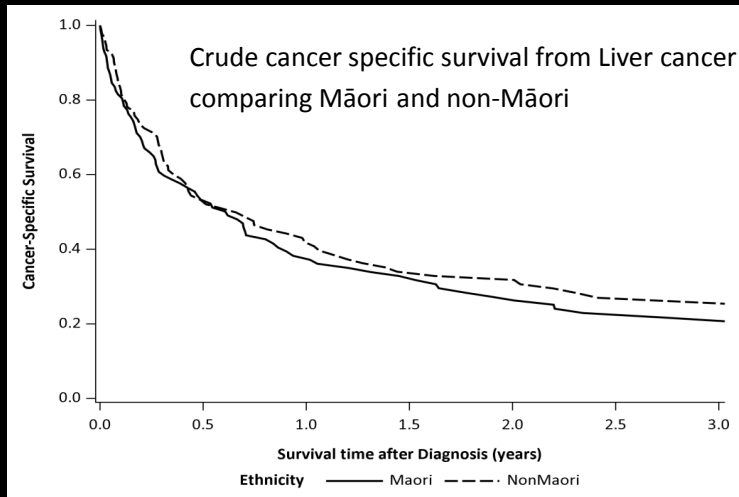
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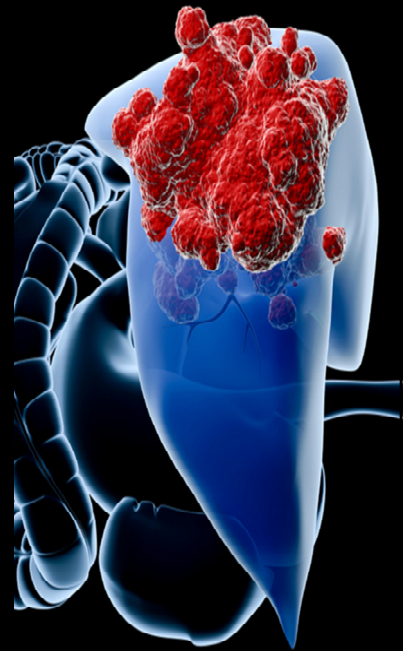
Notes: *a Weighted *b crude *c Age Adjusted *d Chi square
TACE = Transarterial chemoembolisation



Survival

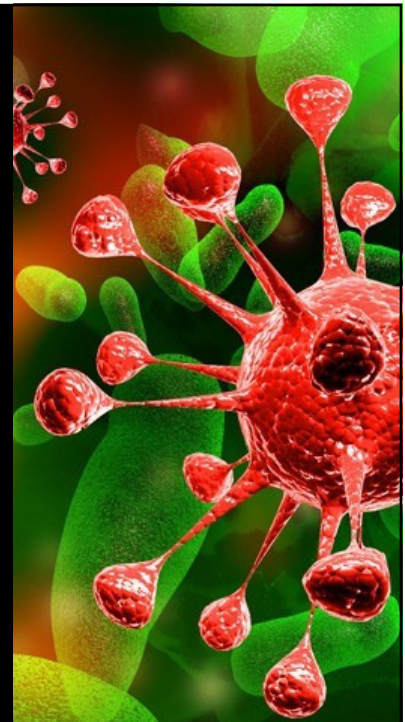


Mortality hazard ratio, adjusted for age, sex and stage
= **1.36** (0.96-1.92)



Liver Cancer: Conclusions

- Incidence is the main driver of inequalities
 - Hepatitis vaccination, screening and surveillance important
- Management does not appear to be different
- Survival may be poorer for Maori





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Stomach Cancer

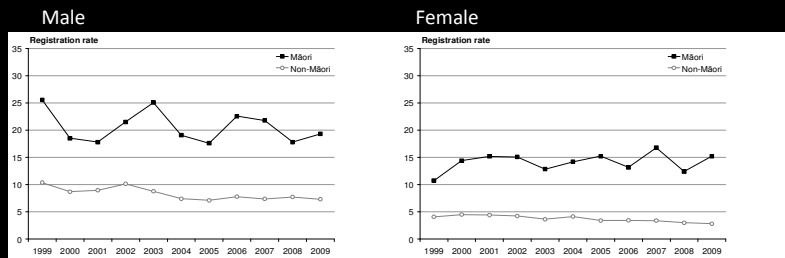
Virginia Signal



In New Zealand ...

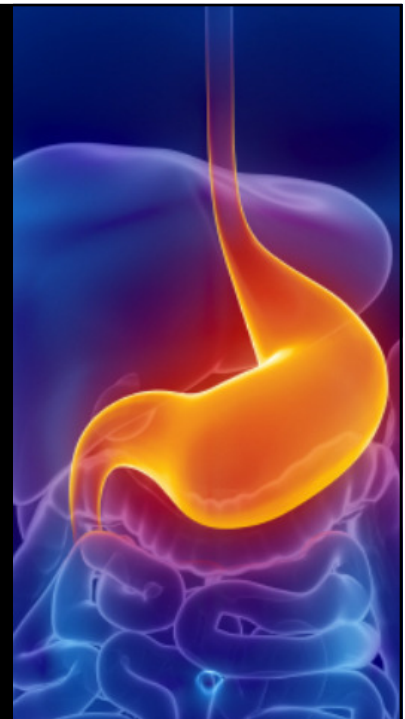
Compared to non- Māori, Māori have

- Much higher **incidence**



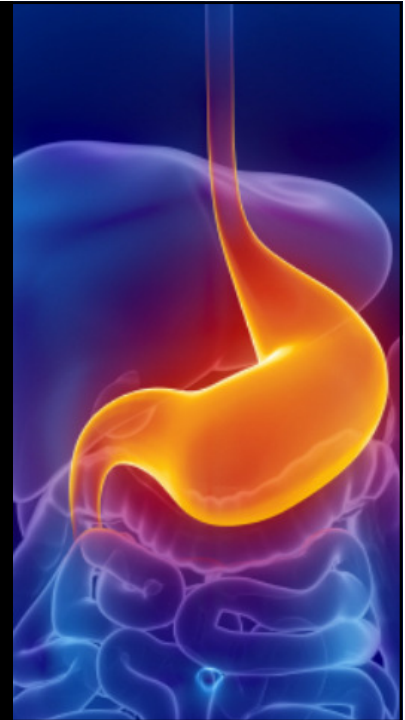
(registration by ethnicity, 1999–2009, NZHIS, 2012)

- Worse mortality
- and **Poorer Survival**



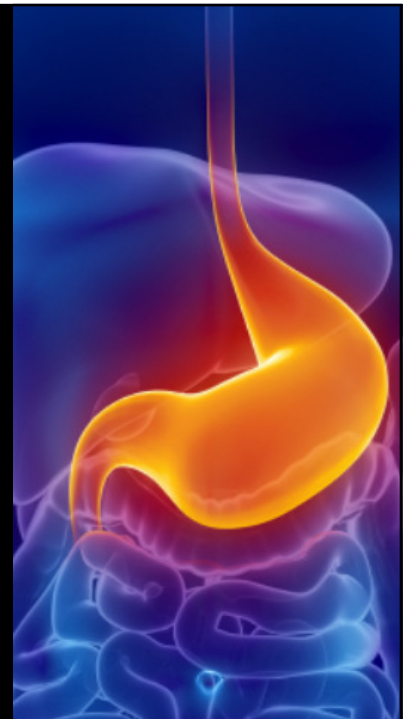
Stomach Cancer: The Patients

- On average **Māori** 10 years **younger**
 - 60 vs 70 years
- Overall 38% female
 - 1/2 of Māori patients were female vs 1/3 of non-Māori
- **Comorbidity**
 - Overall 70% had 1 or more comorbidity
 - Māori more likely to have comorbidity
 - congestive heart failure ($p=0.003$)
 - renal failure ($p=0.005$)
 - diabetes ($p=0.09$)
 - Māori appeared more likely to have 3 or more comorbid conditions ($P=0.11$)



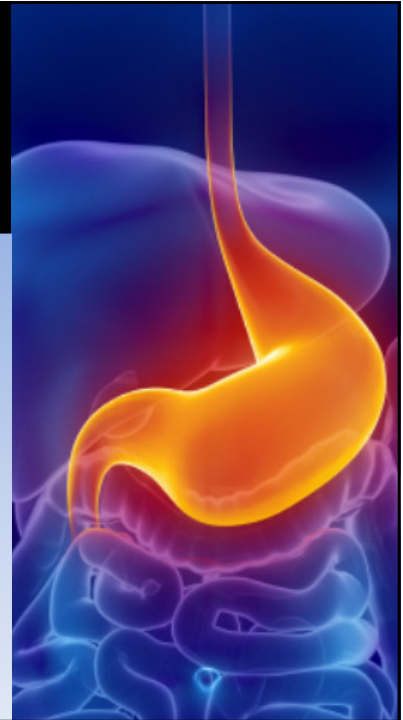
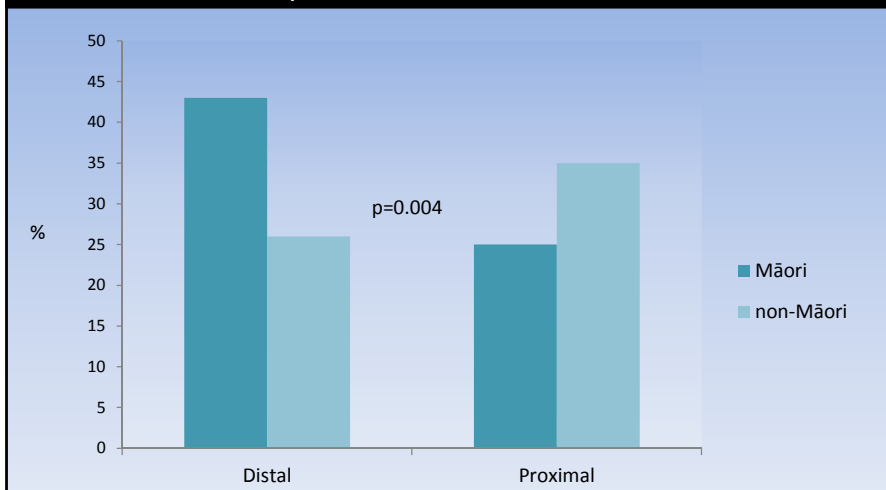
Results: Some things looked similar

- **Stage** or **Grade**
 - No significant difference at diagnosis
- **Waiting times** through the pathway
 - Similar times
- **Curative surgery** for stage I – III patients
 - Similar proportions
- **Chemo** pre/post operative for stage I – III patients
 - Similar proportions
- BUT few received chemo overall - 15% pre-op /25% post-op
- Radiotherapy palliative only



.... some things looked **very** different

- **Tumour site** (age and sex adjusted)
 - Driven by risk factors



..... other things looked **very** different

- **Surgery**
 - Overall two-thirds of stage I – III had definitive surgery (n=119)
- Māori more likely to:
 - Have partial gastrectomy (59% vs 49%, p=0.14)
- Māori less likely to:
 - Have **specialist** upper GI **surgeon** (38% vs 79%, p<0.01)
 - Have surgery in a **main centre** (43% vs 83%, p<0.01)
 - This remained when stratified by surgery type

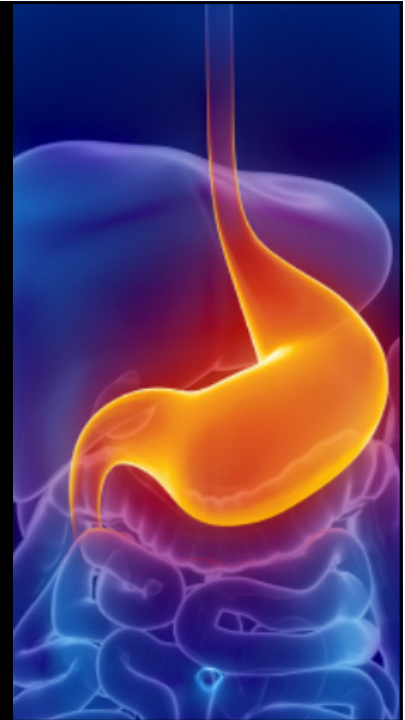


Survival also looked different

- Stomach **cancer specific** mortality in Māori versus non-Māori cohorts – Stage I - IV

<u>Adjusted for:</u>	<u>Hazard Ratio</u>	<u>95% CI</u>
Unadjusted	1.02	0.79 to 1.31
Age	1.10	0.84 to 1.43
Gender	1.08	0.82 to 1.41
Stage	1.21	0.92 to 1.58
Tumour site	1.26	0.95 to 1.67
Comorbid Top 12 ^(a)	1.25	0.94 to 1.66

a) 12 most common comorbid conditions in this study



In a nutshell...

- Similar
 - Stage and grade between Māori and non-Māori
- Differences in
 - Age, comorbidity, **tumour site** and gender
 - Access to specialised surgical care**
 - And ... possibly in survival

