



*Equity of Colonoscopy Provision and Quality in  
Māori and New Zealand Europeans: A  
Comparative Retrospective Study*

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**NZAGS 2021 ASM**

**EQUITY OF COLONOSCOPY PROVISION AND  
QUALITY IN MĀORI AND NEW ZEALAND  
EUROPEANS: A COMPARATIVE STUDY**

**Sameer Bhat**

**CO-AUTHORS:** Matt Donachie, Mike Whiley, Wiremu MacFater, Prof. Ian Bissett

**SUPERVISOR:** Dr Marianne Lill



**MEDICAL AND  
HEALTH SCIENCES**  
SCHOOL OF MEDICINE



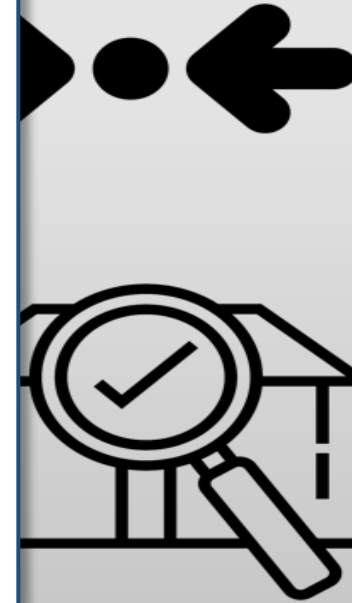
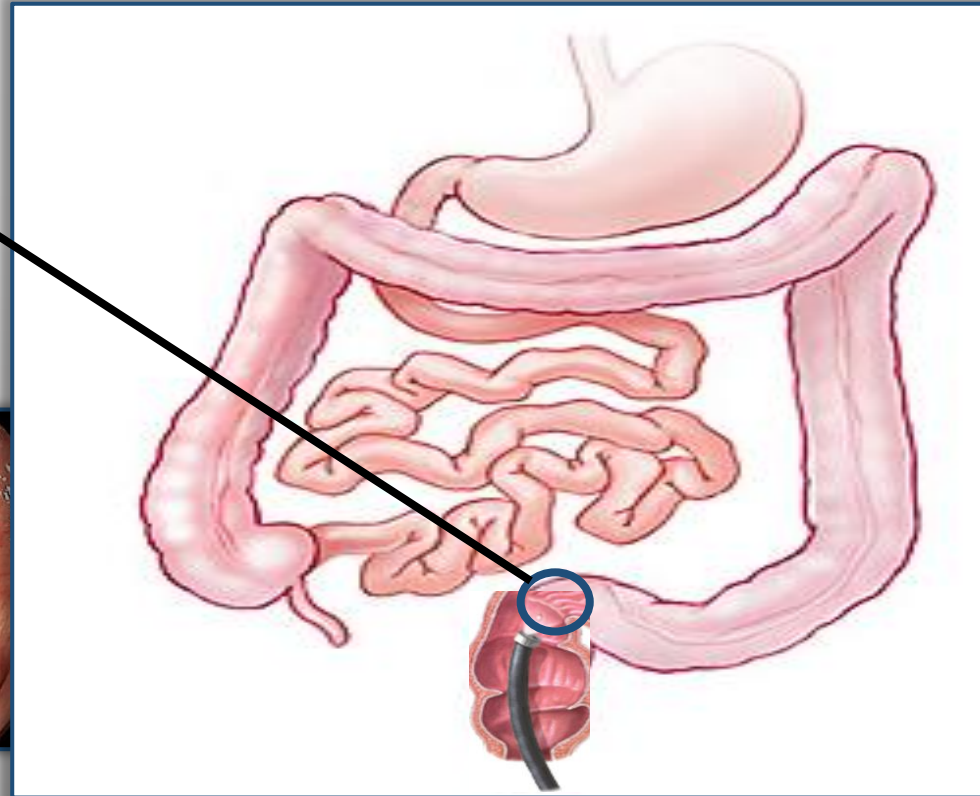
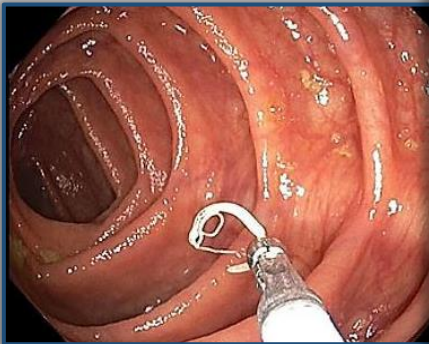
# Declaration of Interests

- No personal disclosures

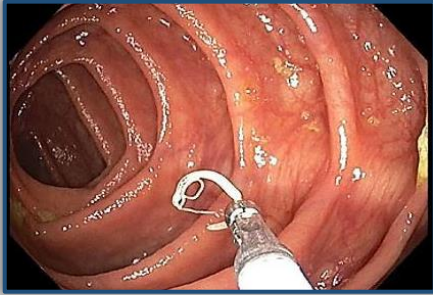


# Colorectal cancer

- 3<sup>rd</sup> most common cancer in NZ
- >3,000 new diagnoses/year



# Rationale

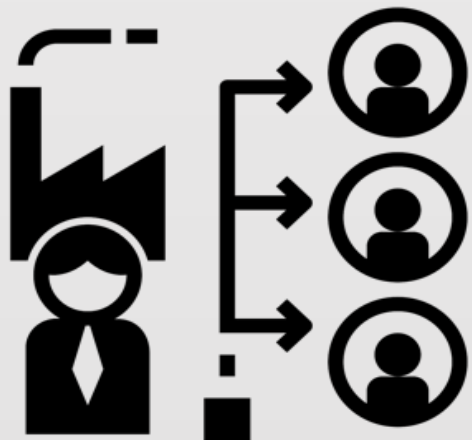


Colonoscopy provision

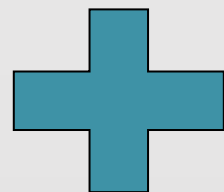


Colonoscopy quality

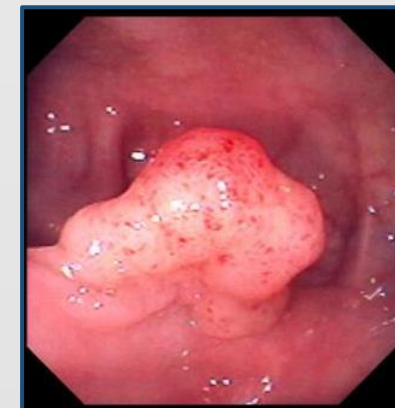
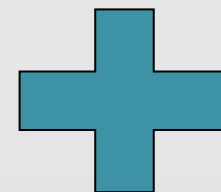
# Aims



*Rates of colonoscopy provision*



*Colonoscopy quality indicators*



*Adenoma prevalence*



Māori

*vs.*

NZ European

# Methods: Study setting

- Clinical board ethics approval granted in consultation with local Iwi

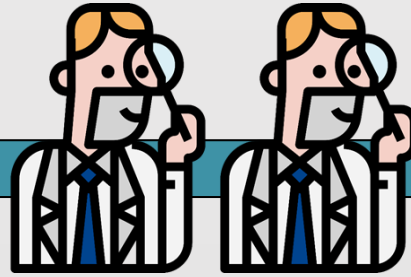


Whanganui Hospital  
(Whanganui, NZ)



# Methods: Patient selection

September 2016



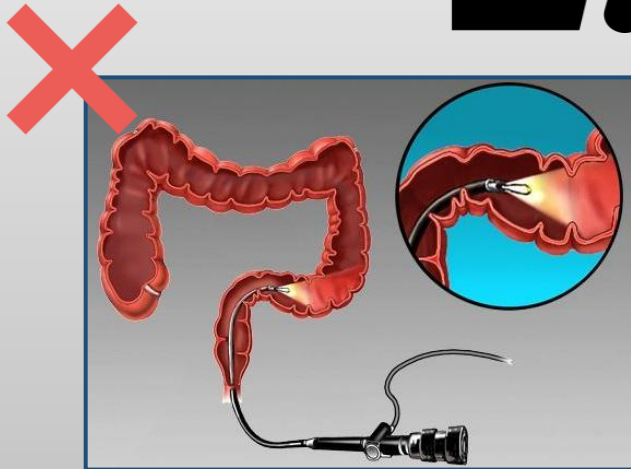
March 2020



*Symptomatic  
colonoscopy*



*Surveillance  
colonoscopy*



*Flexible sigmoidoscopy*



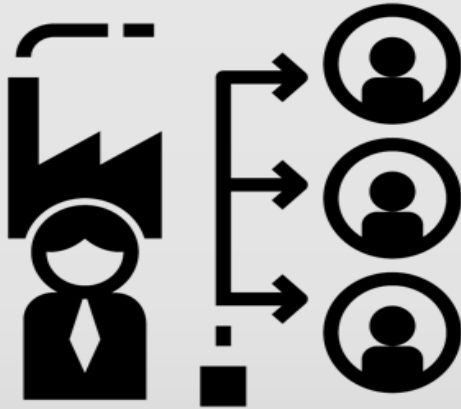
*Oral mechanical  
bowel preparation*



*Screening  
colonoscopies*



# Methods: Primary outcome



**Age-adjusted** rate of colonoscopy  
provision for the population



**Number of colonoscopies  
performed over study period**

**Mean average local population  
size**



# Methods: Secondary outcomes

|                                     |   |  |
|-------------------------------------|---|--|
| • Colonoscopy completion rate (CCR) | → | <b>Colonoscopies reaching the caecum or terminal ileum (complete colonoscopies)</b>      |
|                                     |   | <hr/>  |
|                                     |   | <b>Total colonoscopies performed</b>   |
| • Colonoscopy withdrawal time (CWT) | → | <b>Withdrawal time from caecum to anus</b>   |
| • Polyp detection rate (PDR)        | → | <b>Complete colonoscopies (≥50y) with polypectomy</b>                                    |
|                                     |   | <hr/>  |
|                                     |   | <b>Total complete colonoscopies performed (≥50y) with adenomatous polyp on histology</b> |
| • Adenoma detection rate (ADR)      | → | <hr/>  |
|                                     |   | <b>Total complete colonoscopies performed</b>  |

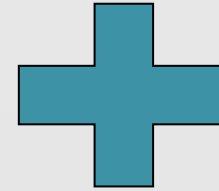
# Methods: Subgroup analysis



Adenoma prevalence



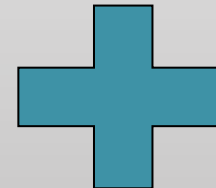
Symptomatic colonoscopy



Suspicious colonic imaging



Surveillance colonoscopy



Multiple ( $\geq 2$ ) complete colonoscopies



# Methods: Statistical analysis



Māori

NZ European

**CATEGORICAL**

**V1**

*vs.*

**V1**

$\chi^2$

**CONTINUOUS**

**V2**

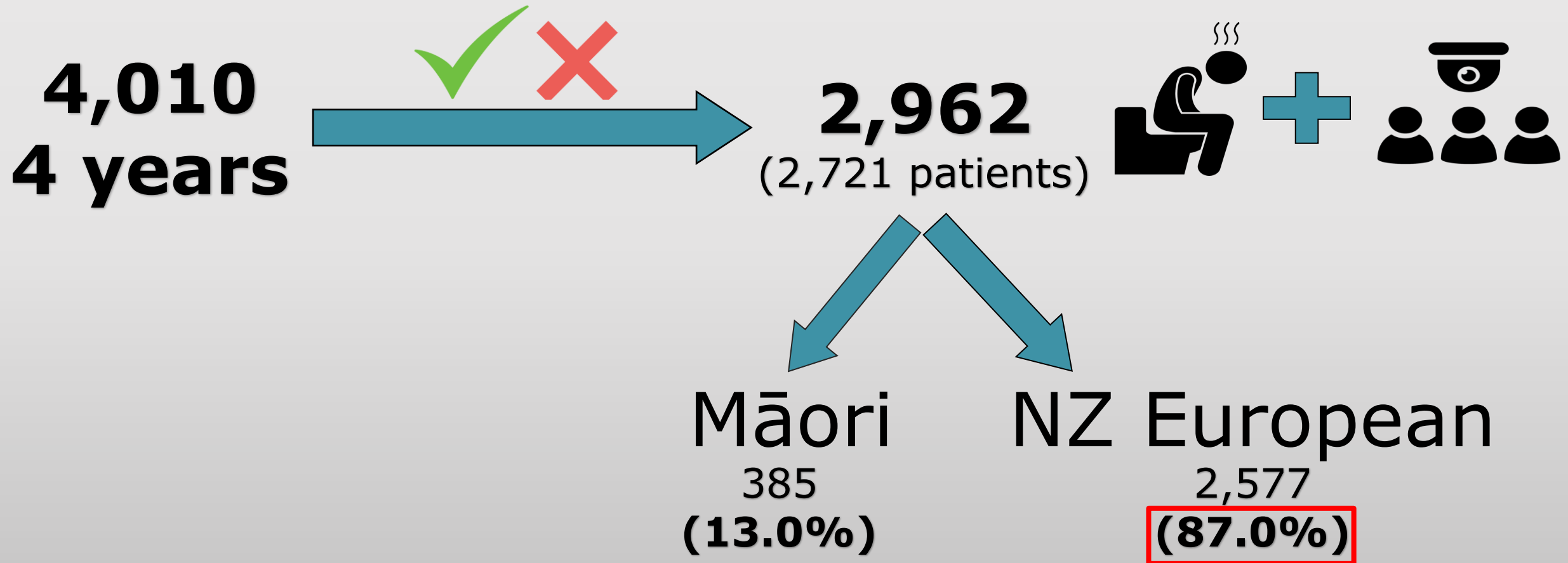
*vs.*

**V2**

*t-test*

$p < 0.05$

# Results: Patient flow

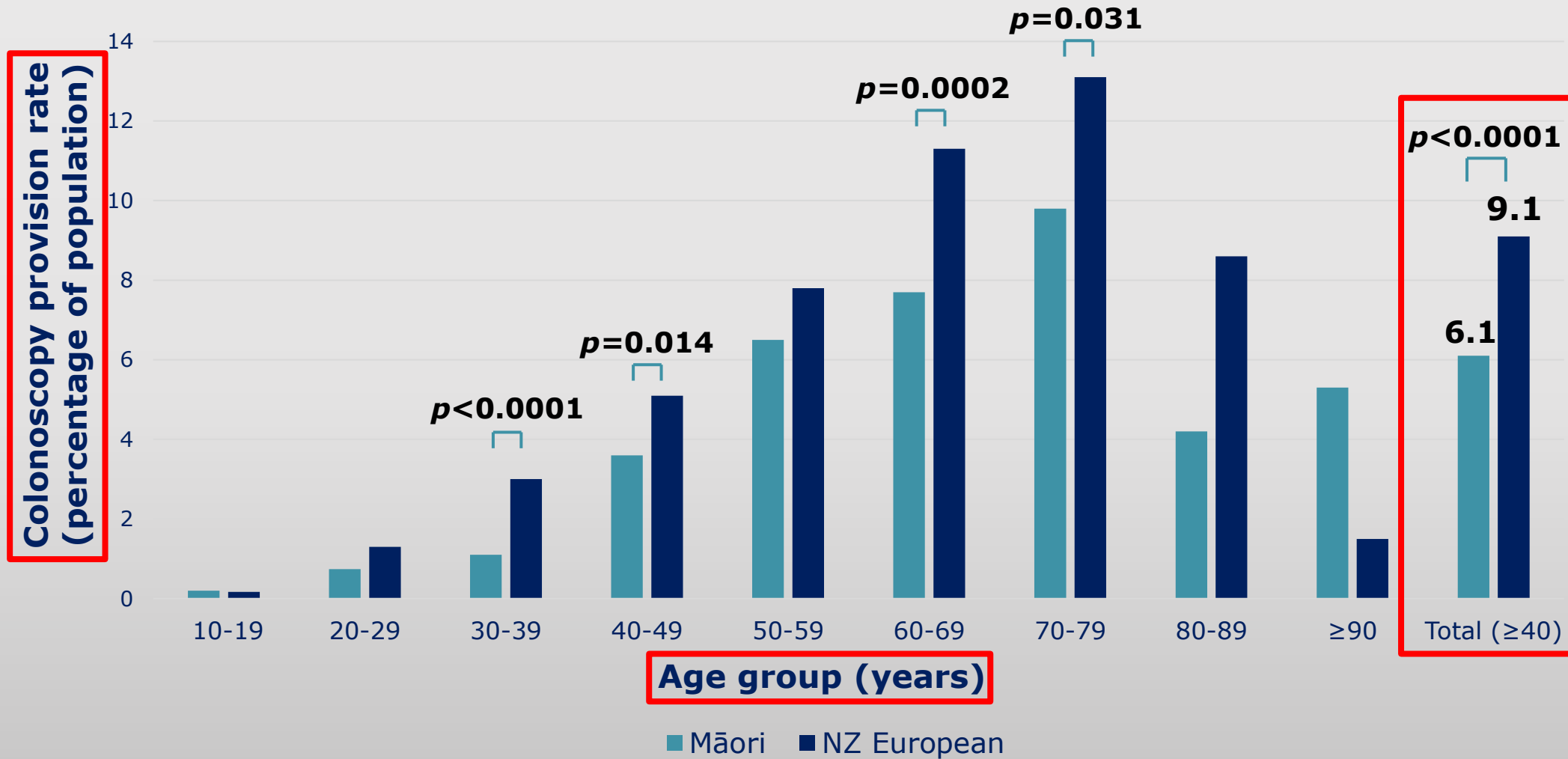


# Results: Patient demographics

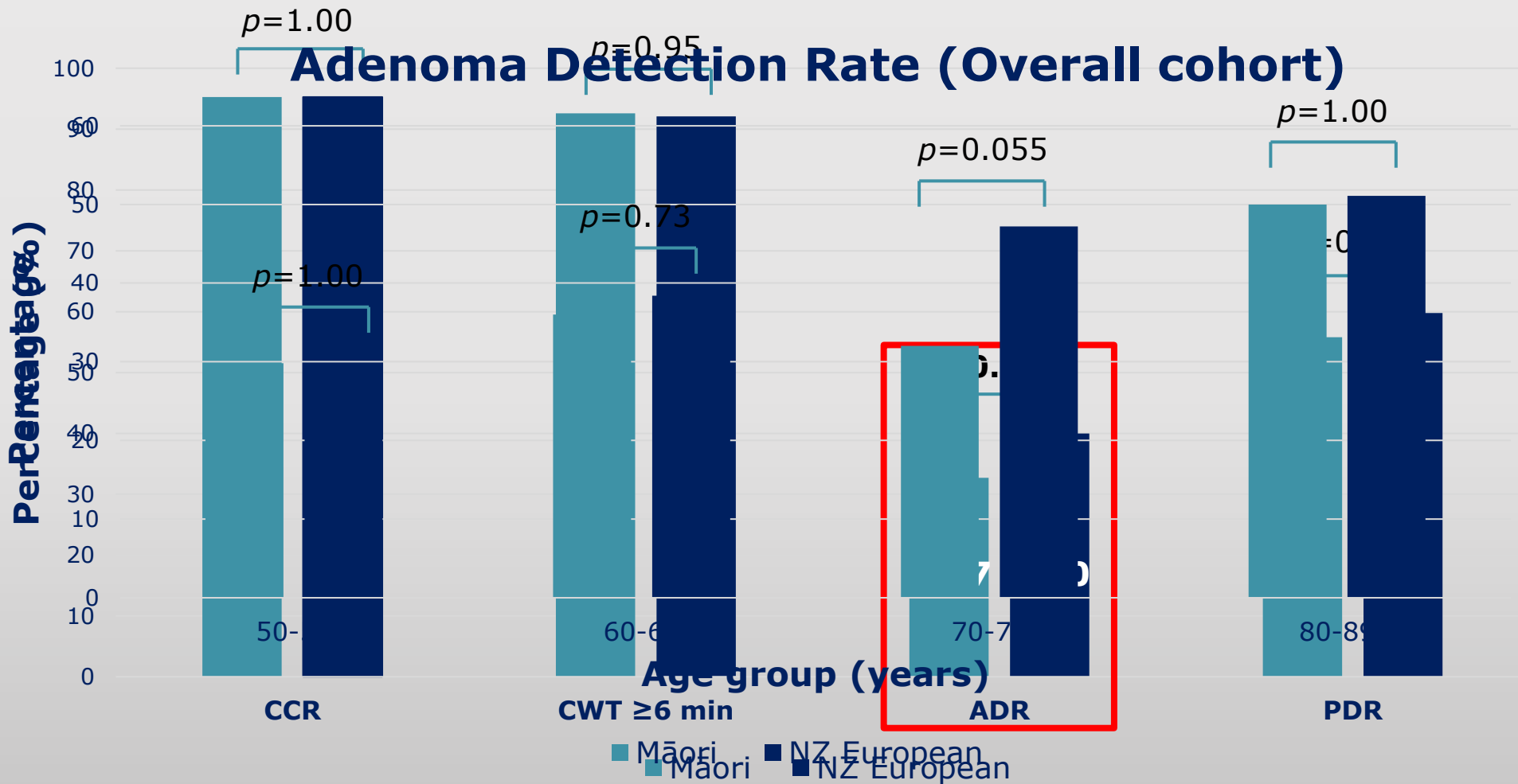
| Variable                          | Māori     | NZ European | <i>p</i> -value   |
|-----------------------------------|-----------|-------------|-------------------|
| <b>Age (mean±SD)</b>              | 55.7±14.0 | 62.5±13.8   | <b>&lt;0.0001</b> |
| <b>Gender (%)</b>                 |           |             | 0.95              |
| Female                            | 54.8      | 54.5        |                   |
| Male                              | 45.2      | 45.5        |                   |
| <b>Colonoscopy indication (%)</b> |           |             | 0.30              |
| Symptomatic                       | 65.5      | 62.6        |                   |
| Surveillance                      | 34.5      | 37.4        |                   |



# Results: Colonoscopy provision

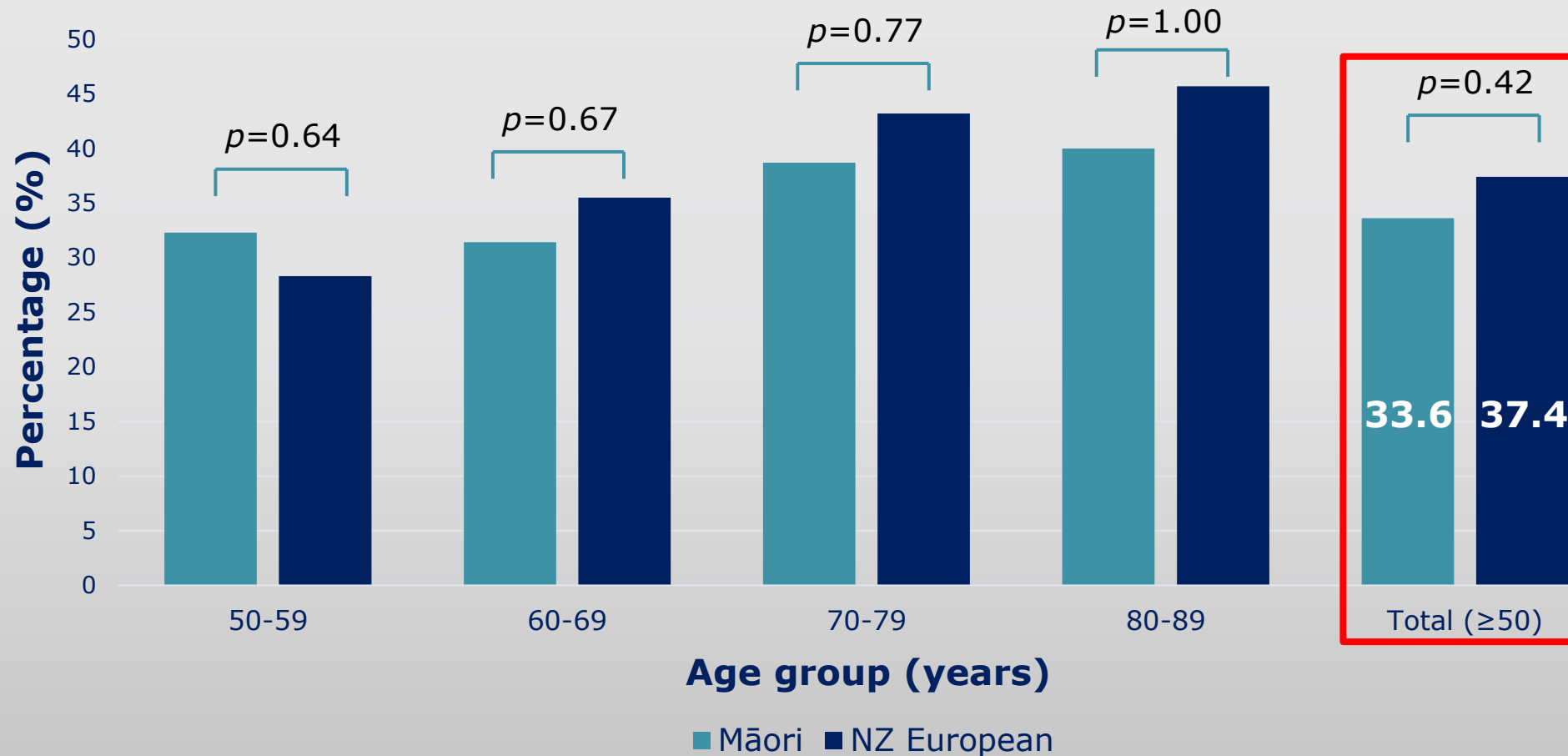


# Results: Colonoscopy quality



# Results: Index symptomatic colonoscopy

## Adenoma Detection Rate (Subgroup)

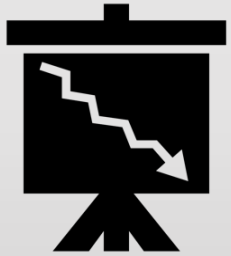




# Conclusions



- Inequitable access to colonoscopy services for Māori compared to NZ Europeans



- Māori were younger and had a lower adenoma detection rate



- No differences in adenoma detection rate or other quality indicators after age stratification

# What next??

- Mandatory reporting of colonoscopy provision rates & other quality indicators by ethnicity
- Developing clear strategies to improve access to colonoscopy services for Māori

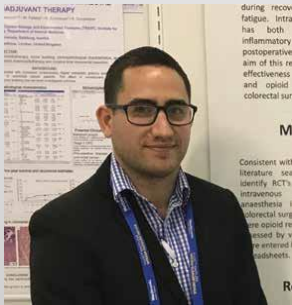


- Qualitative assessment of barriers to colonoscopy access

# Acknowledgements



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**Whanganui DHB**



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**House Officer**  
**Whanganui DHB**



**Prof. Ian Bissett**  
**Professor of Surgery**  
**The University of Auckland**



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ORIGINAL ARTICLE

## Equity of colonoscopy provision and quality in Māori and New Zealand Europeans: a comparative retrospective study

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# Questions?