

# An overview of cervical cancer

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The control of cervical cancer in New Zealand: Achievements and future prospects

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**bode<sup>3</sup>**

Burden of Disease Epidemiology, Equity and Cost-Effectiveness Programme (BODE<sup>3</sup>)



# The cause of cervical cancer

- Virtually all cervical cancers result from a persistent infection with certain high-risk types of human papillomavirus (HPV)
- 12 types of HPV now consistently classified as high-risk
- 8 other types of HPV considered likely to be high-risk
  
- HPV infections very common – lifetime risk ~80%
- But, cervical cancer is a rare complication
- Most infections clear without causing abnormalities

**Sources:** Steenbergen RDM, *et al.* Clinical implications of (epi)genetic changes in HPV-induced cervical precancerous lesions. *Nat Rev Cancer* 2014; 14: 395-405. Walboomers JM, *et al.* Human papillomavirus is a necessary cause of invasive cervical cancer worldwide. *J Pathol* 1999; 189: 12-19. Baseman JG & Koutsky LA. The epidemiology of human papillomavirus infections. *J Clin Virol* 2005; 32 (Suppl 1): S16-S24.

# Cervical cancer around the world

In 2012, worldwide:

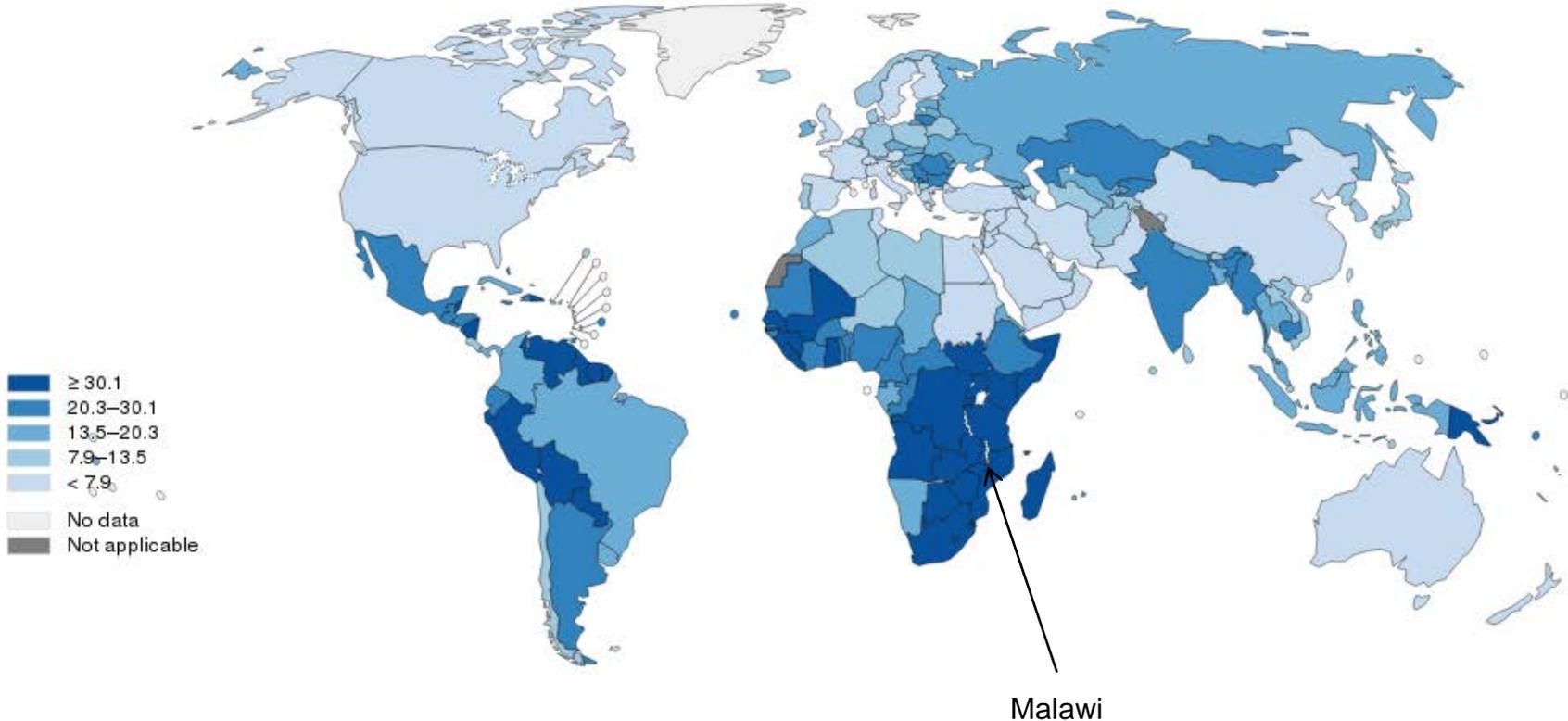
- Estimated 528,000 new cases of cervical cancer
- Cervical cancer was fourth most common cancer in women
- Seventh most common cancer overall

In 2012, worldwide:

- 266,000 deaths due to cervical cancer
- 7.5% of all female cancer deaths

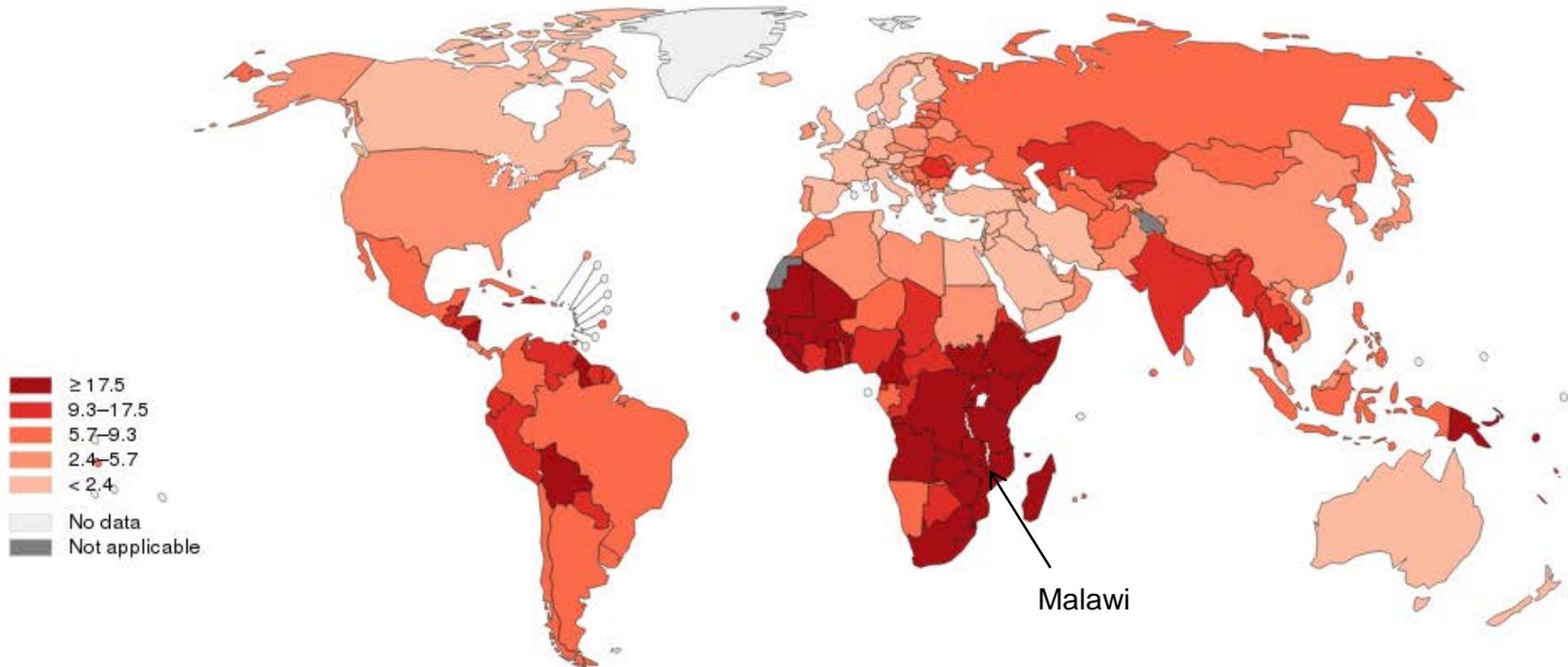
**Source:** Cancer Today, IARC (<http://gco.iarc.fr/today/fact-sheets-cancers?cancer=16&type=0&sex=2>).

# Estimated age-standardized rates (World) of incidence cases, females, cervical cancer, worldwide in 2012



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# Estimated age-standardized rates (World) of deaths, females, cervical cancer, worldwide in 2012



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Data source: GLOBOCAN 2012  
Graph production: Cancer Today  
(<http://gco.iarc.fr/today>)  
World Health Organization



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# Cervical cancer in New Zealand

In 2012:

- Cervical cancer 11<sup>th</sup> most common cancer in women
- 21<sup>st</sup> most common cancer overall
  
- 19<sup>th</sup> most common cause of cancer death in women
- 23<sup>rd</sup> most common cause of cancer death overall

**Source:** Ministry of Health. *Cancer: New registrations and deaths 2012*. Wellington: Ministry of Health. 2015.

# Cervical cancer in New Zealand continued

In 2014:

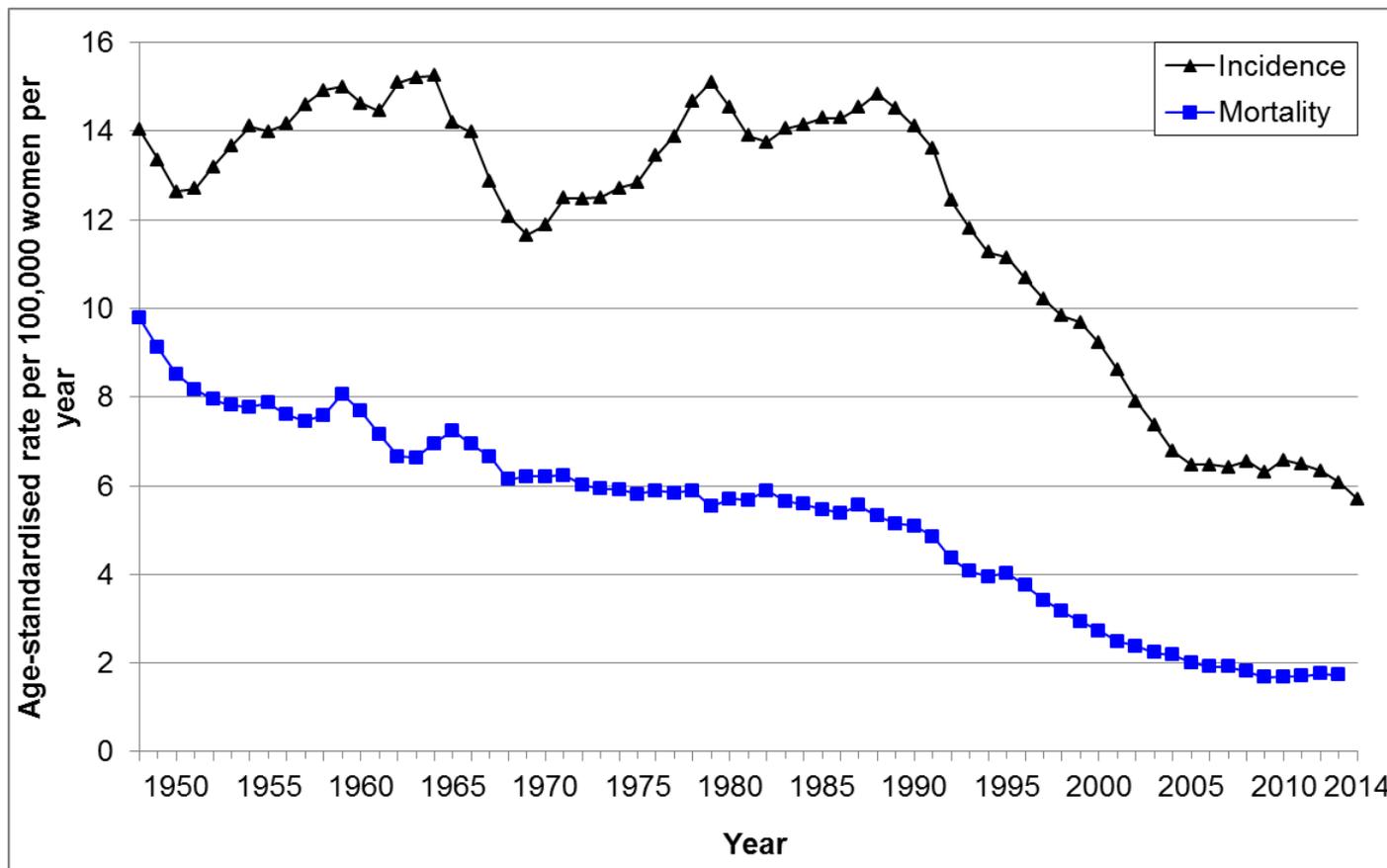
- 142 new cases of cervical cancer
  - Age-standardised incidence rate:
    - 4.6 per 100,000 non-Māori women
    - 11.5 per 100,000 Māori women

In 2013:

- 54 deaths from cervical cancer
  - Age-standardised mortality rate:
    - 1.4 per 100,000 non-Māori women
    - 4.0 per 100,000 Māori women

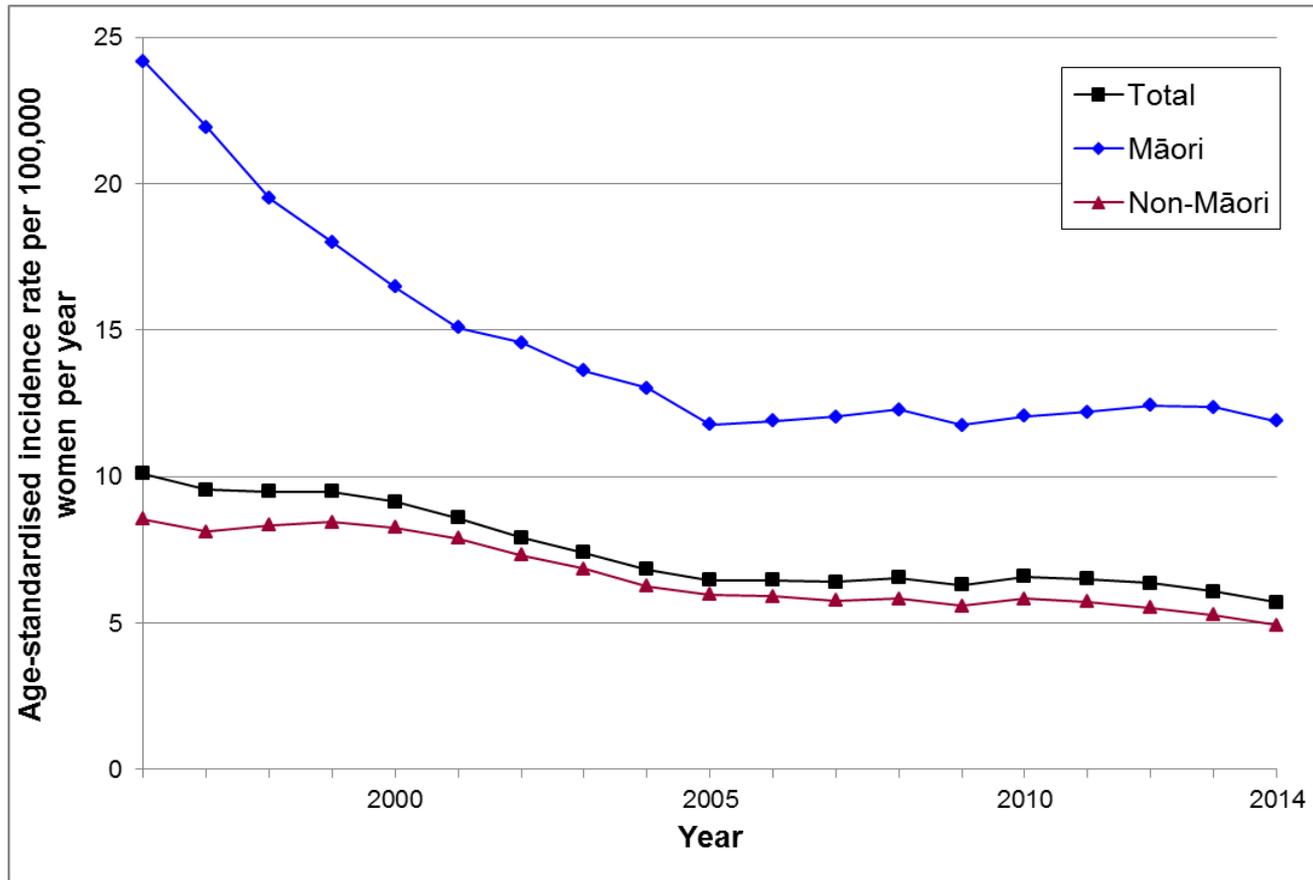
**Sources:** Ministry of Health. *Selected cancers 2012, 2013, 2014*. Wellington: Ministry of Health. 2015.  
Ministry of Health. *Mortality 2013: Online tables (provisional)*. Wellington: Ministry of Health. 2015.

# Historical summary



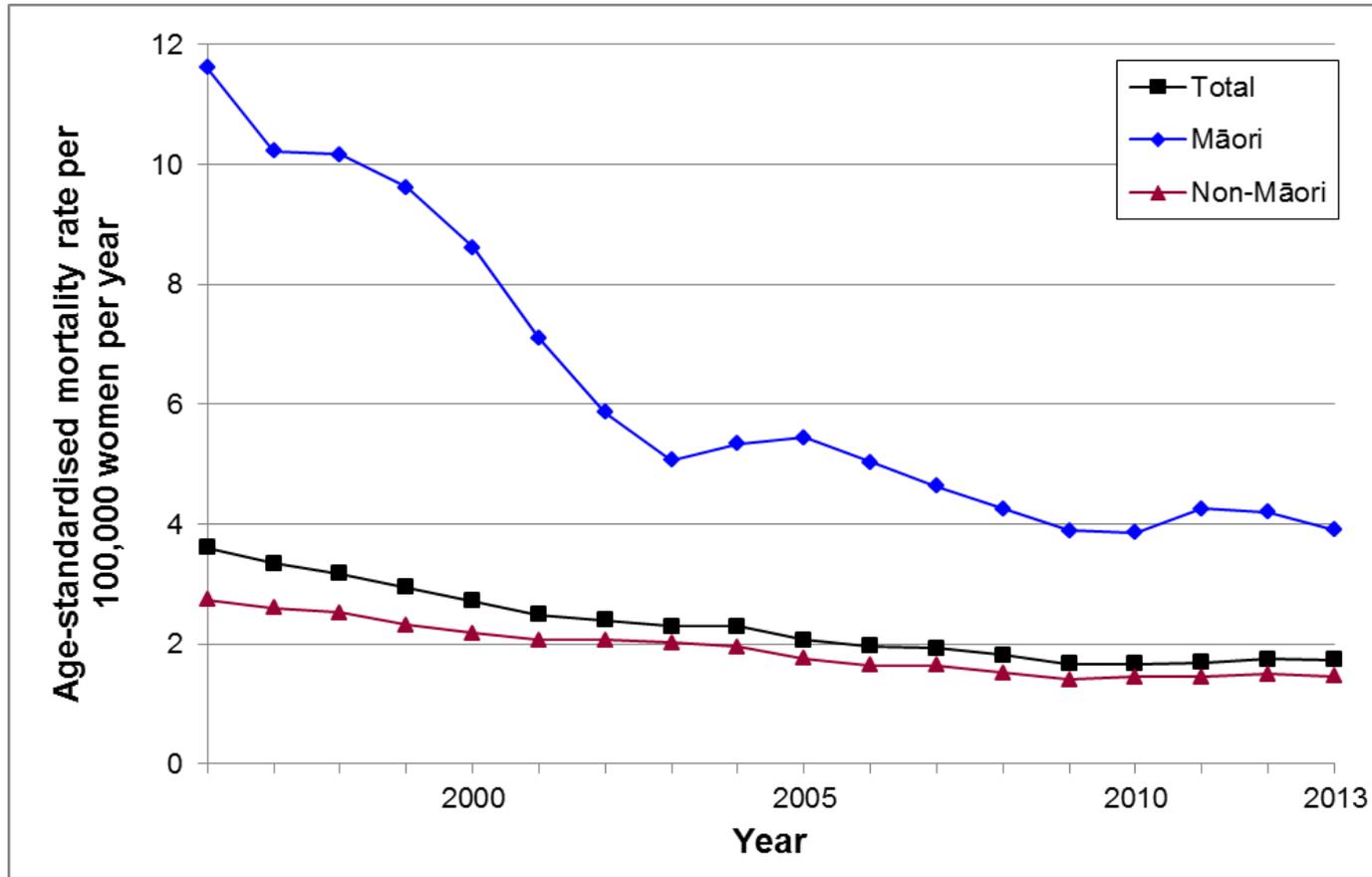
Five-year moving average. Age-standardised to WHO world standard population.  
**Source:** Figure prepared by author using data provided by the Ministry of Health.

# Incidence by ethnicity



Five-year moving average. Age-standardised to WHO world standard population.  
**Source:** Figure prepared by author using data provided by the Ministry of Health.

# Mortality by ethnicity



Five-year moving average. Age-standardised to WHO world standard population.  
**Source:** Figure prepared by author using data provided by the Ministry of Health.

# Some possible explanations

- Screening history
- Stage at diagnosis
- Comorbid conditions
- Treatment

**Source:** Epidemiological studies of cervical cancer survival in New Zealand: a thesis presented in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Epidemiology at Massey University, Wellington Campus, New Zealand. Brewer, Naomi. 2011

# Prevention

- Immunisation
  - the HPV vaccine (Gardasil<sup>®</sup> used in NZ)
- Smear test (cytology screening)
  - cytology with high-risk HPV triage in women  $\geq 30$  years to help assess risk of progression
- HPV with cytology triage
  - self-sampling for HPV testing

# Conclusion

- Cervical cancer is gradually becoming less common & fewer women dying from cervical cancer in NZ
- But, the decreases are not evenly distributed across the population
- Effective methods for the prevention of cervical cancer now exist and work is continuing to improve these methods

**Thank you!**

bode<sup>3</sup>



W E L L I N G T O N