

# Relatively High Mortality for Māori and Pacific Peoples in the 2009 Influenza Pandemic and Comparisons with Previous Pandemics

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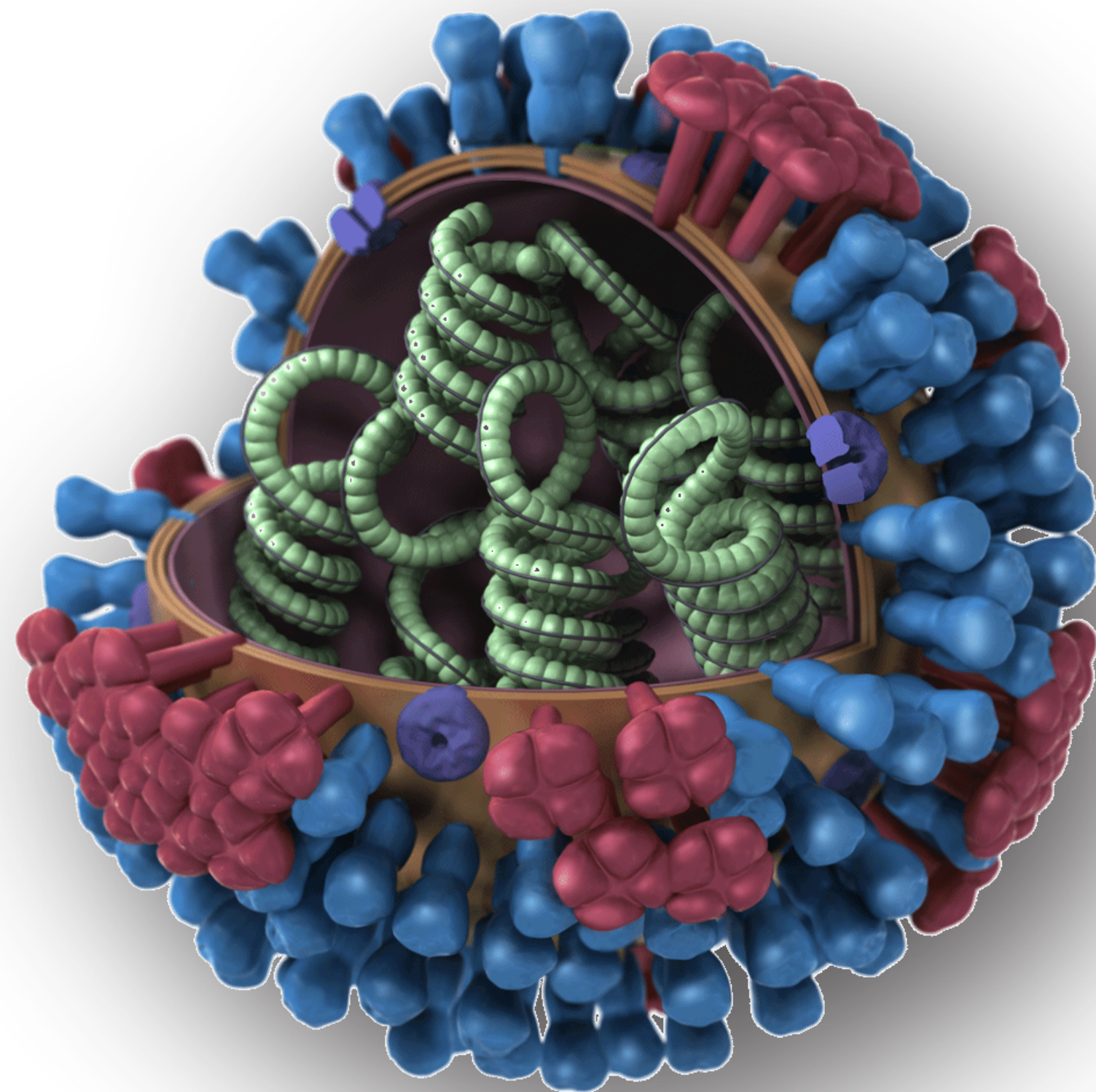
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## Background

There is evidence that indigenous peoples suffered disproportionately in the 2009 influenza pandemic, and we aimed to examine such patterns for Māori and Pacific peoples in New Zealand (NZ). Historically, the “Spanish influenza” pandemic (1918-20) resulted in elevated mortality rate ratios (RR) for indigenous peoples relative to European populations in North America (RR=3.2–191.5), for the Sami in Nordic countries (RR=4.8–16.9), indigenous Australians (RR=172.4); and indigenous Pacific peoples in: Guam (RR=3.2), Fiji (4.8), Tonga (2.6–5.3), Samoa (16.5), Nauru (11.2), Tahiti (10.9) and Hawaii (4.1).<sup>1</sup>

## Methods

We analysed data from a national Mortality Review Group for the 2009 pandemic and three historic datasets covering the 1918 and 1957 influenza pandemic periods.



## Results

In the 2009 pandemic the Māori mortality rate (2/100,000) was higher than the European New Zealander rate (2.6 times) (Table). Pacific peoples in NZ had a higher mortality rate (5/100,000) which was significantly higher than that for European New Zealanders (5.8 times). These mortality differentials for the 2009 pandemic were consistent with those seen for hospital and intensive care admissions.

By comparison, the Māori mortality rate in the 1918 pandemic (4230/100,000 population) was 7.3 times the European settler rate (Table). For NZ military personnel we estimated the mortality rate for Māori was 2.3 times the European rate and the rate for Pacific personnel also appeared to be higher. In the 1957 pandemic the Māori mortality rate (40/100,000) was 6.2 times the European rate.

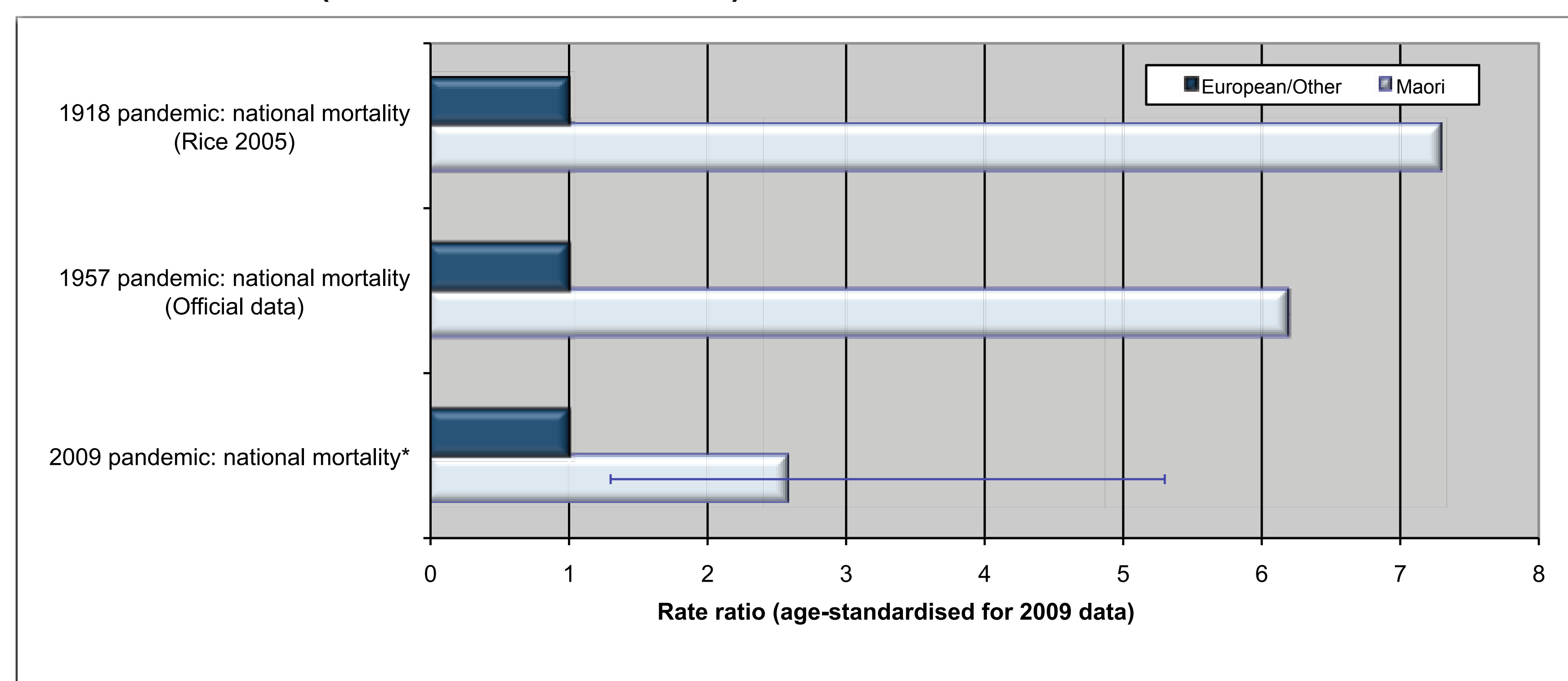
## Conclusions

Mortality rates in the 2009 influenza pandemic for Māori and Pacific peoples were elevated compared to other New Zealanders. This pattern is consistent with previous pandemics, albeit with evidence for some decline in relative ethnic health inequalities over the past century. Nevertheless, the persistence of such inequalities in 2009 (as for a number of other infectious diseases in NZ) highlights the need for improved societal and public health responses.

**Table: Mortality for Māori and non-Māori/European New Zealanders from three influenza pandemics**

Data source / pandemic	Māori	Non-Māori	Ratio Māori / non-Māori (95% CI)	Comments
<b>1918/19 pandemic</b>				
National mortality data (2 <sup>nd</sup> wave) <sup>2</sup>	4230 per 100,000 popn.	580 per 100,000 popn. (European)	7.3	Probably an underestimate of Māori mortality due to under-reporting.
Mortality in NZ military personnel (2 <sup>nd</sup> and 3 <sup>rd</sup> waves)	2501 per 100,000 popn.	1103 per 100,000 popn. (European/Other)	2.3 (1.6–3.1)	NZ military personnel of Pacific peoples ethnicity also had a raised mortality rate.
<b>1957 pandemic</b>				
National mortality data for the “Asian influenza” pandemic of 1957 (Official Report) <sup>3</sup>	39.6 per 100,000 popn.	6.4 per 100,000 popn. (European)	6.2	Ethnicity coding was still not robust at this time.
Individual mortality data in the Births Deaths & Marriages database (selected surnames) <sup>4</sup>	49.0% increase in deaths for August/September 1957 (compared to the same period in 1956 & 1958)	Whole NZ popn.: 20.3% increase	2.4 (Māori vs total popn.)	This method has various limitations and may under-estimate relative Māori mortality.
<b>2009 pandemic</b> (June to September 2009) cumulative age-standardised mortality rates per 100,000 population, Māori vs “Other” New Zealanders (non-Māori and non-Pacific, mainly European)				
All cases identified by the Mortality Review Group <sup>5</sup> as having H1N1 as their primary cause of death (n=49)	2.0 (0.8–3.1)	0.8 (0.5–1.1)	2.6 (1.3–5.3)	For Pacific peoples in NZ, rate = 4.6 (2.0–7.2). Results all age-standardised to the Māori population.

**Figure: Mortality rate ratios for three influenza pandemics for Māori vs European/Other New Zealanders (non-Māori/non Pacific)**



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