

Indigenous Health 1

Indigenous health in Australia, New Zealand, and the Pacific

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We survey Indigenous health issues across the Pacific with a case study approach that focuses on Australia, New Zealand, Hawai'i, and US Associated Micronesia. For each case study, we provide an overview of the Indigenous population, its colonial history, and current health and social outcomes. In the discussion that follows, we flag some of the key policy initiatives that have been developed to address Indigenous health disadvantage, albeit within the context of continuing debates about Indigenous rights and policy.

Introduction

The Pacific Ocean covers roughly 28% of the globe. This ocean is larger than the total land area of the world, and stretches between the Southern Ocean, Asia, Australia, and North and South America.¹ Thousands of islands are spread across this expanse, which adds to the region's considerable geographical, cultural, and linguistic diversity. This vast expanse provides the backdrop to our survey of Indigenous health.

There is some debate about the definition of Indigenous people.² Some definitions emphasise the political subordination of Indigenous peoples by the colonising nations. Others focus on the sociocultural characteristics of Indigenous societies (being, for example, small scale and decentralised) that have made them vulnerable to political domination and exploitation. This debate notwithstanding, colonial processes have, since the 18th century, had a pervasive influence on the lives of Indigenous peoples across the Pacific region.

During the 18th and 19th centuries, in particular, the colonisation of the Pacific by European imperial powers was pivotal to this history. Here we only hint at the complexity of this process and the devastation and havoc it caused Indigenous societies. All the Indigenous peoples we discuss experienced steep declines in population during the initial phase of colonisation as a result of the combined effect of dispossession, social change, and introduced epidemic diseases.^{3–10}

For many Indigenous societies in the Pacific, colonisation has been a multilayered process, with Indigenous lives entangled in the shifting fortunes of European and, in some instances, non-European powers. US Associated Micronesia, for instance, had been under Spanish, German (1899–1914), and Japanese (1914–43) control before the USA assumed responsibility after World War II for the strategic UN-mandated trust. During the 20th century, some European powers maintained their status as external colonial powers, such as the French in French Polynesia. Others, such as Britain, withdrew to create self-governing dominions in Australia (from 1901) and New Zealand (1852). Importantly, the role of the USA as a colonial power increased over this period, as we discuss in the history of Hawai'i and US Associated Micronesia.

Approach

In view of both the size and diversity of the Pacific region, a comprehensive analysis of Indigenous health is beyond the scope of this review. The health of Indigenous people in Asia and the Americas is taken up elsewhere in the series. Here we present a set of case studies focusing on Australia, New Zealand, Hawai'i, and US Associated Micronesia. Such an approach enables us to provide some of the historical and social context for contemporary Indigenous disadvantage in health. This contextual understanding is a crucial underpinning to the analysis of both contemporary Indigenous health policy and continuing debates about Indigenous rights in the region.

The different case study sites also illustrate some of the diversity of context to Indigenous health across this region. Each site has its own distinct cultural and political history. Australia, New Zealand, and Hawai'i are so-called settler colonial states, in which the settler population is in the majority and settler institutions dominate. Despite this broad similarity, there are substantial differences between these settler states in the management of Indigenous affairs. By contrast with these examples, the Indigenous population of US Associated Micronesia remain in the majority. US Associated Micronesia has an economy that relies on external aid, and its relationship with its most recent colonial power (USA) is now managed through a series of treaties, called the Compacts of Free Association.

The analysis of Indigenous health worldwide is limited by the availability of good-quality health data,¹¹ which substantially limits the extent to which we are able to provide a detailed comparative analysis across these four sites. US Associated Micronesia has little capacity for the

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This is the first in a [Series](#) of four articles about indigenous health

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Search strategy

The data we present here are drawn from both published (indexed) academic work and government publications. A search of PubMed was done with search terms such as "Indigenous", "Aborigin*", "Torres Strait Islander", "Pacific Islander", "Micronesia*", "Native Hawaiian", "Kanaka Maoli", with "Health Outcomes" and/or "Mortality" and/or "Morbidity". This information was supplemented by Indigenous health and social data published by governments and statistical agencies in the different jurisdictions.

	Australia	New Zealand	Hawai'i	Federated States of Micronesia	Republic of Marshall Islands
Life expectancy (years)					
Men	59.4 (76.6)*	66.3 (75.7)†	71.48 (75.90)‡	68.00 (75)§	60 (75)§
Women	64.8 (82.0)*	71.0 (80.8)†	77.20 (82.06)‡	71.00 (80)§	63 (80)§
Infant mortality rates (per 1000 livebirths)	15 (5)¶	8.6 (4)	7.0 (7.0)**	21.0 (7.0)††	37 (7.0)‡‡
Low birthweight (% total births under 2500 g)	12.9% (6.1%)§§	7.9% (6.1%)¶¶	8.0% (8.1%)	..	12.39% (7.8%)***
Unemployment rate (% labour force)	20.3% (5.8%)†††	9.1% (3.4%)‡‡‡	9.8% (6.3%)§§§	22% (5.1%)¶¶¶	30% (5.1%)¶¶¶
Relative income (various measures)	AUD\$394 per week (\$665)	NZD\$14 800 (\$18 500)****	US\$14 199 (\$21 525)††††	US\$1990 (\$41 400)‡‡‡‡	US\$2370 (\$41 400)‡‡‡‡
<p>Benchmark values^{15,44,76,94-108} (shown in parentheses unless stated otherwise) are for the following reference populations and year(s): Australia=total Australian population; New Zealand=non-Māori, non-Pacific population; Native Hawaiians=total population resident in the State of Hawai'i; Republic of Marshall Islands and Federated States of Micronesia=total US population. AUD\$=US\$0.7; NZD\$=US\$0.6. *Years 1996-2000. †1996-99. ‡1990. §2003. ¶1999-2003. 2001. **2000. ††2003. ‡‡1999; benchmark the total US population 2002. §§2000-02. ¶¶2001-02. 2001. ****2004; benchmark the total US population 2002. †††2002. ‡‡‡2005; benchmark the total New Zealand population. §§2000. ¶¶¶2000; benchmark the total US population 2005. 2002; measure mean equivalised household income. ****2001; measure total personal income. ††††1999; measure per capita income. ‡‡‡‡2004; measure per capita gross national income.</p>					
Table 1: Headline Indigenous health and social indicators					

routine collection, analysis, and reporting of health and related data. In Australia, New Zealand, and Hawaii the extent to which Indigenous status is reported and recorded in census, health survey programmes, and administrative data sets vary, as does the approach to recording and reporting of the ethnicity of people with mixed ancestry. Native Hawaiian data are frequently aggregated with other ethnic groups (such as Asians or other Pacific Islanders). Consequently, the latest life expectancy data available for reporting here comes from 1990 (table 1). In Australia, mortality data are of reportable quality for only 60% of the Indigenous population.¹² In New Zealand, investigators in studies linking mortality information and the census databases estimated that routine mortality statistics underestimated Māori deaths by between a quarter and a third for 1980s and early 1990s, although since 1995 this proportion has decreased to about 5%.^{13,14}

The Aboriginal and Torres Strait Islander peoples of Australia

Population

Aboriginal peoples have occupied Australia for at least 60 000 years. Today, there are two main groups of Indigenous Australians: Aboriginal people from the Australian continent and the island state of Tasmania, and Torres Strait Islanders. In 2001, these two groups combined made up 2.4% of the total Australian population (492 700 people).¹⁵ Of this total, 90% described themselves as Aboriginal, 6% as Torres Strait Islander, and 4% as both Aboriginal and Torres Strait Islander.¹² Compared with the total Australian population, the Indigenous Australian population is young. In the 2001 Census of Population and Housing, half the Indigenous population was younger than 20.5 years (compared with 36 years for the non-Indigenous population).¹² The geographical distribution of the Aboriginal and Torres Strait Islander people is also distinct. Although 30% of Aboriginal and Torres Strait Islander people live in major Australian

cities (where they constitute about 1% of the population) and 43% reside in large regional areas, one in four (27%) live in remote and very remote regions (constituting 45% of the population in very remote areas).^{12,15}

Colonial history

The Australian colonies federated in 1901 under a constitutional arrangement that restricted the role of the Commonwealth of Australia in Aboriginal affairs. Responsibility for Aboriginal affairs, in effect, remained with the former colonies, which became State governments after federation.¹⁶ The institutional development of the Australian state, for the next 50–60 years, was anchored by the idea of a white Australia, indicating the desire of most settler Australians for a British cultural enclave in the Asian region, and the belief that Aboriginal people were a dying race.¹⁷

Within this context, civil rights of Aboriginals and Torres Strait Islanders were substantially restricted. For example Aboriginal people were denied the right to vote under Commonwealth legislation passed in 1902 and again in 1918.¹⁶ From 1908 to 1944, the Commonwealth Government developed a refined social welfare programme that included invalid and old age pensions, maternity allowances, child endowment, widow's pension, and unemployment and sickness benefits. However, access to these benefits was racially rationed, with Aboriginal people (variously defined) being excluded.¹⁶

In the decades after World War II, reform of Commonwealth and State legislation removed several barriers to Aboriginal and Torres Strait Islander civil rights.¹⁶ For example, in 1949 Aboriginal returned servicemen were given the right to vote in Commonwealth elections. This right was eventually extended to all Aboriginal adults in 1962, although voting was not compulsory for Aboriginal Australians (unlike other Australians) until 1984.¹⁶ In 1966, a landmark decision by the Conciliation and Arbitration Commission gave

Aboriginal employees in the Northern Territory the same terms and conditions as non-Aboriginal employees.^{18,19} Finally, a national referendum in 1967 removed the constitutional barriers to formal involvement of the Commonwealth in Aboriginal affairs.²⁰

Coincident with this period of reform, an Aboriginal political movement emerged that, by the end of the 1960s, was increasingly focused on Indigenous rights, such as land rights, Aboriginal sovereignty, and community control.^{18,21} These rights, which were seen to be consequent on the status of Indigenous Australians as colonised peoples, have received only some recognition, such as in Commonwealth and State land rights legislation, and with the acceptance of Aboriginal management of some Indigenous-specific programmes delivered by Aboriginal community controlled cooperatives and health services. These community organisations have been developed from models of comprehensive primary-health care, indicating in part a worldwide trend in primary-health development that was crystallised in WHO's 1978 Alma-Ata Declaration on Primary Health Care.²² In 1999–2000, there were around 120 such services funded by the Commonwealth across Australia.²³

Health and social outcomes

Life expectancy at birth for Aboriginal and Torres Strait Islander people is about 20 years younger than that for the total Australian population (table 1).¹² In 2001, the age-standardised rates of death for Indigenous Australians were between two to four times that of non-Indigenous Australians.¹² The 2002 data show that age-specific death rate ratios are higher for Indigenous people across all age groups, but rate ratios are particularly high for young to middle-aged adults (for example, the rate ratios for the 30–34 year age group was 4·5 for Indigenous men and 7·0 for Indigenous women).²⁴ Mortality outcomes vary between different jurisdictions. For example, in 2003 the median age of death for Indigenous men ranged from 46·3 years (Northern Territory) to 56·8 years (New South Wales), and for Indigenous women ranged from 50·0 years (South Australia) to 62·1 years (Queensland).²⁴

The extent to which mortality varies between urban, rural, and remote regions is uncertain, which indicates the difficulties with data quality.

Circulatory system disease (which includes heart disease and stroke) was the leading cause of death for Indigenous men and women for the period 2002–03, with standardised mortality rate ratios 3·2 and 2·8 times those of men and women, respectively, in the total Australian population.²⁴ For Indigenous men, the next most frequent causes of death were injuries (rate ratio 3·0), malignant neoplasia (1·3), respiratory disease (3·9), and, endocrine, nutritional, and metabolic disorders (mainly diabetes; 7·3).²⁴ For Indigenous women, the most frequent causes of death after circulatory system disease were malignant neoplasia (1·6), endocrine, nutritional, and metabolic disorders (11·7), injuries (2·9), and respiratory system disease (3·6).²⁴

Indigenous Australians also have substantial disadvantage in other key social outcomes. Table 1 shows the differences in rates of employment and income. Educational outcomes are also poorer for Indigenous Australians, who are twice as likely as non-Indigenous people to have left school before completing year 10 (age 16 years) and half as likely to have completed year 12 (age 18 years) according to the 2001 census.²⁵ In 2002, only 30% of Indigenous households were in homes owned by or being purchased by their occupants, compared with 71% of other Australian households.^{15,26}

The Māori of Aotearoa (New Zealand)

The Māori population

Māori people came to Aotearoa (New Zealand) in a series of epic canoe voyages from eastern Polynesia between 1200 and 700 years ago.²⁷ According to the 2001 census, there were 526 281 Māori in New Zealand, constituting 14·7% of the total population.²⁸ At this time, the median age of Māori was 21·9 years compared with 34·8 years for the total New Zealand population.²⁸ Children younger than 15 years make up 37·3% of the Māori population and 20% of the non-Māori population.²⁹

Colonial history

The first recorded contact between Māori and Europeans was in 1642, when the Dutch explorer Abel Tasman and his crew encountered tribes in the northern part of South Island. No further contact was recorded until the arrival of James Cook in 1769, triggering the first wave of imperialism and the subsequent arrival of sealers, traders, and whalers.²⁷ British colonisation led to both the usurpation and re-distribution of Māori power and resources⁹ through a range of strategies, including land purchase, warfare, land confiscation, legislation, religion, and the imposition of non-Māori cultural and social practices.²⁷ Colonial policies (such as assimilation policy) and broader social change (urbanisation) and the economic and social reforms pursued as a part of the New Right agenda of the 1980s resulted in the continuing social marginalisation of



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Māori through the 20th century. The sum effect of these historical processes was the repression of Māori cultural practices, language, and institutions, socioeconomic deprivation, unequal access to society's resources such as education and employment, and poorer health status.^{9,27,30,31} Although there has been a substantial Māori cultural and political renaissance since the 1970s, it has yet to completely ameliorate the effect of this longer history.

In 1840, the Treaty of Waitangi was created as a contract between Māori and the Crown. Two versions of this document were made at the time, one in Māori and the other in English. There are substantive differences between the two language versions of the Treaty, which has given rise to different interpretations with respect to the nature and extent of Crown obligations and Māori rights. The Waitangi Tribunal was established in 1975 to hear claims about breaches of the Treaty, and to make non-binding recommendations to the Government about the resolution of claims upheld by the Tribunal. Substantial progress has been made in resolving both historical and contemporary issues relating to the Treaty. Although recognised as the founding document of New Zealand, the Treaty is not used as the basis of government policy-making. Three principles, derived from the Treaty by the Royal Commission on Social Policy,³² have been used to guide government responses. The principles are partnership between Māori and the government or its agencies, participation by Māori, and protection of Māori interests (equity between Māori and non-Māori). These principles have been expressed in various government documents including The New Zealand Public Health and Disability Act,³³ The New Zealand Health Strategy,³⁴ and *He Korowai Oranga: Māori Health Strategy*.³⁵ Several publications provide more detailed information on the Treaty in general,^{27,36,37} and its relation to health.³⁸

Health and social outcomes

Māori have poorer health and social outcomes than the New Zealand benchmarks (table 1). Measures of socioeconomic deprivation clearly highlight the over-representation of Māori in deprived geographical areas.^{39,40}

Education outcomes for Māori are poor. In 2001, 43·6% of Māori adults did not have a school qualification compared with 23·6% of the total population.⁴¹ At the time of the 2001 census, the median annual income was NZ\$18 600 for Māori adult men (\$24 900 for total population of adult men) and \$13 200 for Māori women (\$14 500 for total population of adult women; table 1).⁴¹ Māori are also less likely to own their homes, with 31·7% of Māori households owning their dwellings, compared with 67·8% of the total population.⁴¹

Substantial improvements in life expectancy and associated reductions in the disparity between Māori and non-Māori life expectancy were recorded between the 1950s and mid-1980s.^{10,42} Non-Māori life expectancy has continued to increase since the mid-1980s. However, little improvement has been seen in Māori life expectancy,

with the gap between these two population groups increasing, and serious disparities remaining (table 1).^{43,44} For the years 1980–99, the change in all-cause mortality for the Māori population was modest despite pronounced reductions in standardised all-cause mortality rates for the non-Māori, non-Pacific population.^{43,44} As a result, the disparity in all-cause mortality rates has increased for both sexes and in all age groups.⁴³

Cardiovascular disease, cancer, respiratory disease, and injury are the major causes of death for both Māori and non-Māori.³¹ However, there are substantial disparities between Māori and the non-Māori, non-Pacific ethnic group in cause-specific mortality rates. Between 1980 and 1999, age and sex standardised mortality rates from cancer fell for the non-Māori, non-Pacific ethnic group but increased for Māori.^{43,44} Over the same time, similarly standardised mortality rates from cardiovascular disease declined for both populations, but the reduction was smaller in the Māori ethnic group, resulting in an increase in the disparity between Māori and non-Māori, non-Pacific peoples. Although Māori had higher mortality from ischaemic heart disease,^{43,44} coronary artery revascularisation procedures were more common in the non-Māori, non-Pacific ethnic group.⁴⁵

Other evidence for disparities in access to care is emerging. For example, significantly higher proportions of Māori women than of non-Māori women reported unmet needs for general practitioner care in the 2002/03 New Zealand Health Survey.⁴⁶ Evidence for ethnicity-related differences in the quality of care is also emerging. For example, preliminary analysis of data from the National Primary Medical Care Survey showed that age-specific rates of ordering blood lipid and glucose tests for Māori were lower than those for non-Māori in the 35–44, 45–54, and 55–64 year age groups.⁴⁷

The Kanaka Maoli of Hawai'i

The Kanaka Maoli population

Kanaka Maoli (Native Hawaiians) settled the isolated Hawaiian archipelago via voyaging canoes over 1500 years ago from what is now French Polynesia.⁴⁸ Hawai'i has a population of 1·2 million.⁴⁹ In the 2000 US census, which allowed for single race and mixed race categories, Native Hawaiians (single and mixed race) constituted 19·8% of the population. Other major ethnic groups were: white (29·3%) Asian (58%, which includes Japanese [24·5%]), Chinese (14·1%), and Filipino (22·8%).⁴⁹

Colonial history

In 1778, Captain James Cook was the first documented European to land on the shores of the Hawaiian Islands. For the next few decades, contact with Europeans was limited to a few sailors. In 1820, the first group of American missionaries arrived, one year after the Hawaiian Regent, Kaahumanu, herself a devout Christian convert, initiated the end of the *Kapu* system.⁵⁰ Christianity quickly filled the void left by the loss of the

Kapu system, which for hundreds of years delineated the rules by which all *Kanaka Maoli* lived. These “laws guided daily life and behaviours, including interactions amongst people, between people and nature and between people and the gods”.⁵¹ The profound changes in social structure and lifestyle that resulted, and the changes in diet and depopulation due to foreign introduced diseases, was to have a serious effect on the health of *Kanaka Maoli*.⁵²

In the decades that followed, important changes took place within the Hawaiian economy, with increasing integration with the capitalist economy worldwide replacing the traditional island subsistence-sharing economy with a for-profit barter and later money economy.⁵³ New industries developed, such as sandalwood lumbering, whaling, cattle-ranching, and sugar growing. Foreign economic and political control increased with the rise of these industries.⁵³ The most important change over this time was in land tenure. Although the western notion of individual land ownership was foreign to Native Hawaiians, strong pressure was exerted on the monarchy to adopt the new system. In the 1840s, the lands were divided into three groups: Crown Lands, Government Lands, and lands for the chiefs. Although some commoners received 1% of the land, 80% of the *Kanaka Maoli* population became landless.^{50,54,55}

Despite the importance of these economic developments, the pinnacle of heavy-handed western influence in Hawai‘i did not arrive until the last decade of the 19th century. When Queen Liliuokalani attempted to increase the power of the monarchy by proposing a new constitution, early in 1893, she was overthrown by a group of white revolutionaries.⁵⁴ The revolutionaries claimed the islands for the USA. The queen did not resist, hoping that US President Cleveland would move to reinstate her after this illegal overthrow.⁵⁶ Cleveland did indeed order that the monarchy be re-established; however, the leaders of the revolution did not comply. Since the USA was not ready to use force to reinstate the queen, the temporary Provisional Government became the Republic of Hawai‘i in 1894.⁵⁴ With the onset of the Spanish-American war, the strategic location of Hawai‘i in the Pacific gave the newly elected President McKinley further reason to annex the Hawaiian Islands in 1898. Strong objections by Native Hawaiians were ignored. 2 years later, in 1900, Hawai‘i became a territory. By this time, the *Kanaka Maoli* population was at its nadir of 37 656, having decreased 87·5% since 1778, whereas the population of other ethnic groups had grown (61 111 Japanese, 25 767 Chinese, and 28 819 white). *Kanaka Maoli* were now minorities in their own homeland—a situation that persists today.⁴⁸

Health and social outcomes

Today, *Kanaka Maoli* have the highest incidence per head of morbidity and mortality,^{57,58} and the highest age-adjusted mortality of any ethnic group in Hawai‘i.⁵⁹ Native Hawaiian life expectancy continues to be the lowest of all

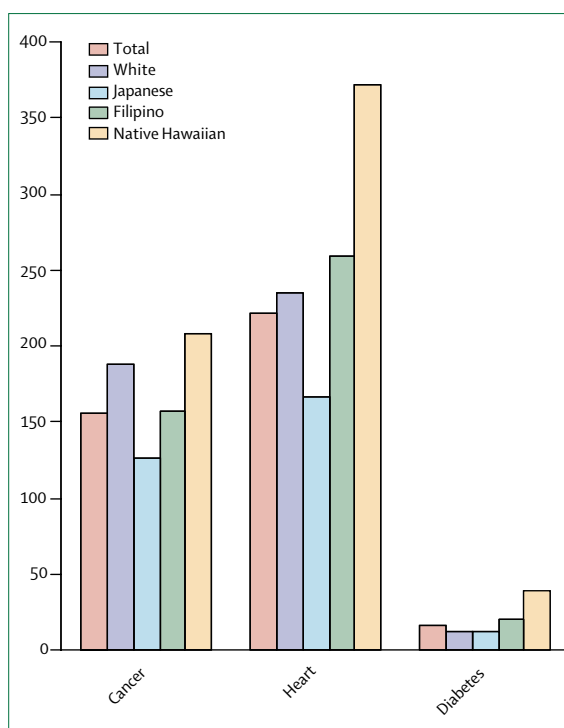


Figure: Age-adjusted deaths rates per 1000 population in Hawai‘i by ethnicity and cause of death, 2000⁶¹

groups in Hawai‘i, whereas steady longevity gains are seen in other ethnic groups (table 1).^{57,58} Although infant mortality rates have dropped for Native Hawaiians from 11·1 per 1000 in 1980 to 7 per 1000 in 2000 (almost equal to the state average), the percentage of low-birthweight babies is increasing.⁶⁰

Based on 2000 data, *Kanaka Maoli* have the highest age-adjusted mortality from heart disease, diabetes, and cancer (figure). Age-adjusted morbidity rate for Native Hawaiians for hypertension is 171·6 per 1000 population compared with white people at 109·9 per 1000, and the state overall of 144·1 per 1000. The age-adjusted morbidity rate for Native Hawaiians with diabetes is 74·6 per 1000 compared with white people at 23 per 1000 and the state overall of 45·9 per 1000.^{59,61}

31% of Native Hawaiians are current smokers compared with the state’s overall rate of 19·7%.⁶² Native Hawaiian women are almost 2·5 times more likely to smoke during pregnancy.⁶² Obesity rates are also very high in Native Hawaiians, with the overweight and obesity (body-mass index ≥ 25) prevalence rates of 69·3% in Native Hawaiians compared with 49·3% in white people.⁶³ Native Hawaiians have the highest incidence rates of breast and lung cancer and the highest mortality rates of breast, lung, and colon cancer (table 2).⁶²

Although mental-health data for Native Hawaiians are scarce, suicide data reveal that Native Hawaiians aged 25–44 years have a suicide rate of 92 per 100 000, compared with the overall rate of 76 per 100 000.⁶⁰ Native Hawaiian

	White	Chinese	Filipino	Native Hawaiian	Japanese
Breast					
Women	25.4	14.9	14.2	31.0	12.2
Colon and Rectum					
Men	18.0	11.3	15.6	24.0	20.8
Women	11.9	11.2	8.9	14.0	12.3
Lung and Bronchus					
Men	54.3	49.7	54.1	75.9	38.5
Women	33.7	22.6	20.4	48.2	14.4

*Rates are average annual per 100 000 population and are age-adjusted to the 2000 US standard population. Hawaii Tumour Registry, Cancer Research Center of Hawaii, University of Hawaii, 1995-2000.⁶²

Table 2: Average yearly cancer mortality rates* by site and ethnicity, Hawai'i, 1995-2000

adolescents have a higher rate of suicide attempts (12.9%) than non-Native Hawaiians (9.6%).⁶⁴ Additionally, a Department of Health survey reported that twice as many Native Hawaiians as white people had been victims of domestic violence or sexual abuse in the past 12 months.⁶⁵

In 1999, 16% of *Kanaka Maoli* individuals were below the poverty threshold (compared with 10.7% for the Hawai'i state total).^{63,66,67} Native Hawaiian families are nearly twice as likely to live in poverty as the average family in Hawai'i. Half of Native Hawaiian families with children aged under 5 years, and whose head of household is a single female, live in poverty, compared with the 37% average for this state. Also, Native Hawaiian grandparents are twice as likely as non-Native Hawaiian grandparents to be the main caregivers for their grandchildren.⁶⁰ In 2002, 11.6% of Native Hawaiian adults did not have health insurance (compared with 8.2% of the Hawai'i State total and 8.6% of white people). The unemployment rate for Native Hawaiians in 2000 was 9.8% of the labour force, whereas the rate for the Hawai'i State total was 6.3% and for white people 5.5%. About 8.3% of Native Hawaiians do not graduate or receive a General Education Diploma,⁶⁷ compared with a state-wide rate of 7.7%. Only 12.6% of Native Hawaiians complete college, and 3.2% have a graduate or professional degree.⁶⁰

US Associated Micronesia Population

US Associated Micronesia is the name commonly used to describe the Republic of the Marshall Islands, the Federated States of Micronesia, the Republic of Palau (Belau), Guam, and the Commonwealth of the Northern Mariana Islands. Micronesians are descended from seafarers who sailed from Asia and Polynesia, arriving at the island atolls between 2000 BC and 500 BC. The Republic of the Marshall Islands has a population of 50 840 (1999 census) and the Federated States of Micronesia (which includes the States of Chuuk, Kosrae, Pohnpei, and Yap) has a population of 107 008 (2000 census).⁶⁸

Colonial history

After World War II, the USA managed Micronesia as a strategic trust under a UN mandate. The Trust Territory of the Pacific Islands included the Republic of the Marshall Islands, Federated States of Micronesia, the Republic of Palau, and the Commonwealth of the Northern Marianas.⁶⁸ Under the UN mandate, the USA was responsible for the health, education, and welfare of the Indigenous people of this region. Subsequent US defence and economic policies have had substantial regional health effects.

In 1946, the USA began testing nuclear weapons in the Marshall Islands. In all, 67 thermonuclear devices were detonated between 1946 and 1958, the equivalent in tonnage to 7200 Hiroshima blasts. Most of these were atmospheric explosions, which account for almost 80% of the total atmospheric tonnage detonated in the history of US testing. In 1954, the Bravo hydrogen bomb exposed about 250 Marshallese from the Rongelap, Utirik, and Ailinginae atolls to acute radioactive fallout, with most of those exposed on Rongelap developing acute radiation sickness. A higher rate of thyroid cancers has been documented for those who were exposed on Rongelap and Utirik.⁶⁹ This programme also had major social and economic consequences for the Marshallese. Exposure to radiation forced the evacuation of Islanders from Rongelap, Bikini, and Utirik. Although the USA has subsequently declared Utirik to be habitable, attempts to resettle other populations have faced serious problems. The people of Rongelap were resettled to their atoll in 1958, but were moved again in 1985 because the atoll was still contaminated. Bikini islanders who were resettled on Kili were forced to rely on shipments of western style foods, since the island was unable to provide adequate local food and did not have a lagoon with safe boat access to support traditional fishing practices.^{70,71}

In 1986, a nuclear testing compensation agreement was negotiated as part of the Compact of Free Association between the USA and the Republic of the Marshall Islands. This agreement included a medical programme for displaced islanders and the creation of the Marshall Islands Nuclear Claims Tribunal to "render final determination upon all claims past, present and future" related to US nuclear testing in the Marshall Islands.⁶⁹ The Nuclear Claims Tribunal provides compensation to Marshallese diagnosed with 36 conditions, most commonly cancers of the lung, thyroid, breast, and ovary, and leukaemia and lymphoma.⁶⁹ However, the USA has not fully funded all the reparations recommended through the Tribunal, and the prospect of adequate future compensation remains uncertain. In 2000, the Republic of the Marshall Islands petitioned the US Congress to negotiate additional nuclear compensation, taking into account current data and estimates about the effect of this programme. The changed circumstances petition has been forwarded to the US Senate for further hearings without apparent success.⁷²

Since the 1960s, profound changes have happened in US Associated Micronesia, a consequence of substantial and rapid increases in US funding and local independence movements. The Northern Mariana Islands became a US Commonwealth in 1978. The next year, the Marshall Islands and the Federated States of Micronesia became self-governing. The Republic of Palau gained independence in 1994. The continuing financial, political, and strategic relationships between the USA and these newly independent nations have been defined in legal instruments called the Compacts of Free Association. These Compacts provide Islanders with economic assistance, immigration, and employment rights in the USA, and security agreements that maintain the exclusive strategic presence by the USA in the region. The Republic of the Marshall Islands and the Federated States of Micronesia negotiated a 15-year Compact with the USA in 1986 and the Republic of Palau negotiated a 50-year agreement in 1994.⁷³

Since the 1960s, the region has seen dramatic social, economic, and cultural changes with increasing salaries, the growth of a cash economy, urbanisation, the fraying of traditional extended family structures, increasing adoption of motorised land and sea transportation, and the influx of processed foods from the USA, along with a decrease in traditional fishing and local agriculture.⁵ This shift has contributed to a change in the health profile of Islanders, with chronic diseases such as diabetes, cancer, and cardiovascular disease assuming greater importance.⁵

Health and social outcomes

Key health indicators, such as life expectancy, infant mortality rates, and the percentage of babies with low birthweight highlight the disparities that exist between the USA, the Republic of the Marshall Islands, and the Federated States of Micronesia (table 1). Mortality data also highlight the rising burden of non-communicable disease and the continuing challenges of infectious diseases. In 2004, the Ministry of Health of the Republic of the Marshall Islands reported the top five causes of mortality as sepsis, cancer, myocardial infarction, pneumonia, and suicide.⁷⁴ For Pohnpei State, the leading causes of death for 1998–2002 were reported as heart disease, stroke, cancer, chronic obstructive pulmonary disease, and sepsis.⁷⁵

The growing concern about cancer mortality in the Pacific has resulted in several studies to assess its burden, risk profile, and intervention.⁷⁶ A review of medical records in most of the Micronesian jurisdictions (1998–99) revealed a complex pattern of cancer prevalence by site and cause. On the one hand, some sites had a high prevalence of gastric, cervical, and liver cancers, indicating a developing world pattern of disease (in which up to a quarter of cancers are associated with infectious agents).⁷⁷ On the other, some sites had a high prevalence of cancers that were commonly associated with the developed world, including cancers of the prostate, breast, and lung. A high prevalence of radiation-associated cancers was also documented in the Marshall



Nancy Stephen, health worker researching pregnancy and smoking in Indigenous women

Islands, in which the prevalence of thyroid cancer was 28·6 cases per 100 000 people.⁷⁷

In 2004, a study by the US National Cancer Institute estimated that nuclear testing by the USA will be responsible for 530 excess cancers above the natural baseline (a 9% increase in the total number of cancers in the Republic of the Marshall Islands).⁷¹ Half of these projected cancers are thought to have yet to happen because of latency periods. In particular, the prevalence of thyroid cancers has been estimated to have increased by 200% above the baseline.⁷¹ Further, undiagnosed or undeveloped stomach and colon cancers are projected to result in future increase in prevalence of 85% and 80%, respectively.⁷¹ Although most of the cancers attributable to radiation were projected to arise in the northern atolls closest to the test sites, several cases were also projected in atolls outside the area previously acknowledged by the USA to be at risk.⁷¹

Headline indicators, such as unemployment rates, relative income, and medical expenditure per head also point to important disparities in social outcomes between US Associated Micronesia relative to US benchmarks (table 1). In the Federated States of Micronesia, 32·3% of the population aged 25 or older (2000) had graduated from high school, compared with 80·4% of the same age group (1994–2004) in the USA.^{78,79}

Discussion

Current debates about Indigenous Policy and Rights

The Indigenous social movements that emerged across the world from the late 1960s have resulted in the greater recognition of the civil rights of Indigenous people in the Pacific region, and in some cases the recognition of specific Indigenous rights. In settler states, these political debates have been between Indigenous people and settler institutions. For US Associated Micronesia, the various independence movements have realigned relations with

its former colonial power. Despite this recognition, there are continuing political debates about Indigenous policy and rights across the region.

In Australia, for example, the current Commonwealth Howard Coalition Government (elected in 1996) has radically transformed the landscape of Indigenous affairs.^{80,81} Senior government leaders have made clear their opposition to a policy framework in Indigenous affairs that is based on self-determination and declared their disavowal of a rights-based agenda in Aboriginal affairs, in favour of an approach that they call practical reconciliation. In this context, the Commonwealth government abolished the Aboriginal and Torres Strait Islander Commission in 2004, replacing the elected representative advisory structure with a government-appointed National Indigenous Council.⁸² Rather than an approach to Indigenous affairs based on so-called self-determination, this government frames its strategies in terms of mutual obligation.⁸¹ According to the Office of Indigenous Policy Coordination, the policy of self-determination resulted in “services...delivered in ways that increase dependence on government and welfare, rather than building on the creativity and self-reliance of Indigenous people.”⁸³

Although the past 30 years have also seen substantial recognition of Indigenous rights in New Zealand, Māori rights are said to have been diminished by legislation such as the Foreshore and Seabed Act (2004) and reviews of targeted policies and programmes; and although the New Zealand government contends that the Foreshore and Seabed Act provides for Crown ownership of the public foreshore and seabed, on behalf of all New Zealanders, its critics argue that it “amounts to an outright extinguishment of customary rights in the coastal marine area in a manner fundamentally at odds with the principles the Treaty of Waitangi”.^{84,85}

In the 1970s, *Kanaka Maoli* underwent their most important cultural and political renaissance since annexation, with a renewed interest in Hawaiian language, arts, land rights, and sovereignty issues. In November, 1993, a formal apology was issued by the US Congress and President Clinton, acknowledging the role of the USA in the 1893 “illegal overthrow of the Hawaiian monarchy...the deprivation of the rights of Native Hawaiians to self-determination...the indigenous Hawaiian people never directly relinquished their claims to their inherent sovereignty as a people or over their national lands to the United States”.⁸⁶ Yet, despite this apology, *Kanaka Maoli* still have no formal relationship with the USA. Efforts are underway at the federal level to extend self-determination and self-governance to Native Hawaiians. However, concern has been raised that current efforts might compromise the future attainment of full political autonomy for Native Hawaiians.^{87,88}

Despite the major developments in US Associated Micronesia during the initial Compact period, the goals of self-sufficiency for the Republic of the Marshall Islands

and the Federated States of Micronesia were not realised. In 2004, amended Compact agreements were negotiated to provide continued assistance to these two countries through to 2023, and Compact II incorporates new restrictions on the use of funds. Along with fixed allocations to specific sectors and the establishment of trust funds, strict requirements for fiscal auditing are in place to maintain continued funding—a substantial challenge for countries such as the Republic of the Marshall Islands and the Federated States of Micronesia, which do not have robust auditing capacity.

Indigenous health policy

Over previous decades, recognition has been growing of Indigenous health issues as a policy priority in the different jurisdictions across the Pacific. Specific health policies have been developed that variously focus on the development of health-care systems (especially primary-health care), workforce capacity, improved quality of care, and intersectoral strategies to improve Indigenous health.

In Australia, for example, the Commonwealth and State or Territory governments agreed to the first National Aboriginal Health Strategy in 1989 (although a 1994 review concluded that this strategy was never effectively implemented⁸⁹). This strategy was an important



Kaylene Ferguson, Aboriginal doctor at the Wuchopperen Health Service In Queensland, Australia

development for the Australian federal health system, in which responsibilities were split between the different levels of government. This landmark health strategy was revised and released as the National Strategic Framework for Aboriginal and Torres Strait Islander Health.⁹⁰ There has been an increasing focus in Australia, since the National Aboriginal Health Strategy, on improving the capacity of Indigenous primary-health services—particularly through improved health financing and health workforce development.⁹¹

In New Zealand, the policy priority placed on Indigenous health is evident with *He Korowai Oranga: Māori Health Strategy*.³⁵ One of the most important developments over the past decade has been the development of Māori providers. Before 1992, few Māori organisations took part in the provision of health services, whereas today around 240 Māori providers are estimated to be involved. These organisations deliver a range of primary care and health promotion activities; however, only around 40 are estimated to provide services for primary medical care. Nevertheless, a substantial proportion of Māori still use mainstream primary-care providers, and the secondary-care system is only mainstream. Consequently, issues of cultural safety (cultural appropriateness) and responsiveness of the mainstream health services is as important, in current policy, as development of service providers for Māori health.

In Hawai'i, the 1985 E Ola Mau Health Needs Study increased the pressure on the US Congress to address the health issues for *Kanaka Maoli*. Consequently, the Native Hawaiian Health Care Improvement Act was authorised in 1988.⁵² Through this Act, Native Hawaiian Health Care Systems were organised to focus on improving Native Hawaiian health through health promotion, disease prevention, and the recognition of the role of traditional healers and culture. Federal education programmes, such as the Native Hawaiian Health Professions Scholarships, aimed to increase the numbers of Native Hawaiian healthcare workers. According to *Ahahui o na kauka* (the association of Native Hawaiian Physicians) in 1975 “four Native Hawaiians graduated in the University of Hawai'i's John A Burn School of Medicine first graduating class. They joined seven other Hawaiian physicians known to be in practice”. Today the association is aware of more than 225 Native Hawaiian physicians worldwide.⁹²

Health and health-care capacity has been one focus of the negotiated Compacts between US associated Micronesia and the USA. The Compacts (and increased foreign aid) have facilitated the development of major improvements in health-care infrastructure in the region. However, although such improvements have enabled the development of western-style medical systems with an emphasis on hospitals and acute care services, primary care and preventative services for public health remain underfunded. As in developed nations that have similar health care models, the region remains ill-equipped to

address and prevent the rising challenges to health from preventable lifestyle-related illnesses such as diabetes, cancer, and cardiovascular disease.⁹³

Despite some documented improvements in Indigenous outcomes in all the case studies that we reviewed here, there continue to be disparities in health and social outcomes for Indigenous people relative to benchmark populations. Despite the common experience of colonisation, all the Indigenous peoples that we have discussed have particular and distinct histories that give rise to differences in their current social and political context. All the jurisdictions that we reviewed have increasingly developed a policy focus on Indigenous health, but we note that this improvement has taken place within a context in which there are continuing debates about Indigenous rights and policy. Developments in Indigenous health need continued monitoring, and these issues present a challenge to policy-makers, health practitioners, and researchers in Australia, New Zealand, Hawai'i, and US Associated Micronesia, and across the Pacific more generally.

Conflict of interest

We declare that we have no conflict of interest.

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