

# Rural residents in Aotearoa die at higher rates than those in urban centers

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People living in rural areas of Aotearoa (the Māori-language name for New Zealand) die at higher rates than those living in main urban centers, new research led by the University of Otago shows.

The results—which contradict existing data, are the strongest evidence yet that New Zealanders who live in rural areas have poorer health outcomes, researchers say.

Lead author Professor Garry Nixon, of the University of Otago, says the study—published in the *Journal of Epidemiology and Community Health*—is the first to show a consistent pattern of higher [mortality rates](#) for rural populations.

"We believe this study is more accurate than others—it uses recent data, it uses a definition of rural that was developed with health in mind and validated for that purpose, and importantly, it considers each age group separately," Nixon remarks.

The research used the newly developed five-level Geographical Classification for Health. The classification was developed by the same research team from the Universities of Otago and Waikato, and uses population and drive-time thresholds to classify all of New Zealand's land area into five categories, two urban and three rural, ranked from most rural to most urban in a way that makes sense for [health policy](#) and research.

Using [mortality data](#) from the Ministry of Health and Statistics New Zealand, the study analyzed the age, sex, ethnicity and cause of 160,179 deaths registered in New Zealand between 2014 and 2018. Deaths were categorized into five outcomes; all-cause, amenable (those that are potentially avoidable if given effective and timely health care), cardiovascular, cancer and injury.

Mortality rates are higher in rural areas than in major urban areas across all groups aged under 60. The largest disparities were most apparent among those aged under 30 in the most rural communities where the [mortality](#) rates were double that of the most urban centers—599 deaths

in urban areas per 100,000 compared with 1,085 in rural areas.

The disparities are most evident for injury and amenable death, but still present for cardiovascular disease. For cancer deaths, the disparities are overall smaller and evident in only some age categories.

Co-author Professor Sue Crengle, of the University of Otago, says although both rural Māori and rural non-Māori have higher mortality rates than their urban peers, the consequence for Māori are greater.

Rurality compounds the already high Māori mortality rate such that the all-case age standardized mortality rate for Māori living in the most rural area is 4,018 per 100,000 compared with 3,055 per 100,000 for non-Māori.

In addition Māori are more likely to live in rural and remote areas and are more likely to be in the younger age groups where rurality has the most impact on mortality.

The [disparity](#) was reversed in those aged over 75, with older rural non-Māori having slightly lower mortality rates, and older rural Māori very similar mortality rates, when compared to their urban peers.

"However, it should not be assumed that this finding provides evidence of a healthier older rural population; the migration of rural people when they become elderly and frail, often to access residential care and be closer to health services, might be a more plausible explanation," Professor Crengle says.

The reasons for the disparities were not analyzed in the study, but Professor Crengle says they are likely to be "multiple and complex," and health care is likely to be only one factor. It is not yet understood how much of these disparities can be accounted for by socioeconomic

factors.

The results suggest Aotearoa aligns more closely with the likes of Australia, Canada and the United States, where higher mortality rates in [rural areas](#) are frequently observed, she says.

"This has important health policy implications in a country where rural health outcomes have been assumed to be as good, if not better, than those in [urban areas](#).

"Because amenable mortality is an indicator for the coverage and quality of health care, the presence of rural:urban disparities in this category has implications for the delivery of equitable health care to rural population."

The new data should not necessarily be viewed as negative, she says.

"Understanding these differences exist in New Zealand means we have an opportunity to develop strategies and [health](#) service interventions that are targeted."

The results will help inform the Rural Health Strategy being developed by Te Whatu Ora and Te Aka Whai Ora, she says.

**More information:** Garry Nixon et al, Comparison of urban and rural mortality rates across the lifespan in Aotearoa/New Zealand: a population-level study, *Journal of Epidemiology and Community Health* (2023). [DOI: 10.1136/jech-2023-220337](https://doi.org/10.1136/jech-2023-220337)

Provided by University of Otago

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