

Towards the construction of a Remoteness Index for New Zealand (RINZ)

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ABSTRACT

Models of geographical accessibility are an important component of the access equation to health services, and are a basis by which health care policy may be developed. Towards the construction of such models, there has been increasing use of GIS-derived measures of travel time and travel distance estimated between point locations of demand (population) and supply (health services) via an interconnecting transportation network. The research reported in this paper builds on the GIS-based models of geographical access to individual health services constructed by the Ministry of Health in conjunction with the University of Waikato, with the aim of constructing a Remoteness Index for New Zealand (RINZ). Two indices are developed. The first is a more general index based on the methodology used in the Accessibility/Remoteness Index of Australia (ARIA) but modified for a New Zealand context. Here the RINZ model is based upon times/distances calculated from populated locations through a road network to the nearest location for each category in a hierarchy of service centres. In this index, population centres of different sizes are used as a proxy for a service supply. The second RINZ model is based on a combination of health service-population location time/distance accessibility models for a bundle of specific primary, secondary and tertiary health services across New Zealand. A comparison is made between the derived indices as well as with other indicators of disadvantage such as deprivation (NZDep96) which are alternative tools for policy development.