

Household crowding key cause of hospital admissions, research finds

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One in 10 admissions to hospital in New Zealand to treat infectious diseases such as pneumonia, meningococcal disease and tuberculosis are the direct result of household crowding a new study has found. For Māori and Pacific Island peoples, the figure jumps to one in five.

Released today by the University of Otago, Wellington, the Ministry of Health funded study includes a world-first systematic review and analysis of global literature on crowding and infectious disease. These findings were combined with housing data from the 1991, 1996, 2001 and 2006 Censuses, and previous Health Research Council funded University research showing a dramatic jump in admissions to New Zealand hospitals for infectious diseases over the last two decades.

The review started with almost 10,000 published studies from which researchers selected the most relevant and highest quality 350 reports. Lead investigator Professor Michael Baker, who was assisted by Dr Andrea McDonald and He Kainga Oranga colleagues, says these studies provide consistent evidence that household crowding is an important risk factor for nine major categories of infectious disease—gastroenteritis, hepatitis A, [Helicobacter pylori](#) infection, pneumonia and [lower respiratory infections](#), [upper respiratory infections](#), Haemophilus influenzae disease, [bronchiolitis](#), meningococcal disease and tuberculosis.

Across these diseases, household crowding is estimated to cause more than 1300 [hospital admissions](#) a year in New Zealand, along with some

deaths.

The study highlights large ethnic inequalities and is particularly relevant to child health, Professor Baker says.

"Most of the diseases in the study have especially high rates in children. Children are more susceptible to meningococcal disease, gastroenteritis, pneumonia and most other infectious diseases, and our analysis shows that their risk is strongly associated with exposure to household crowding."

In terms of ethnicity, the research shows that for European/Others, exposure to household crowding is estimated to cause 5 per cent of hospital admissions (in the nine disease groups examined). For Asian peoples, the figure is 13 per cent. For Māori the estimated contribution rises to 17 per cent, and for Pacific peoples it rises to 25 per cent.

"This study is a significant step forward in understanding these huge ethnic inequalities," Professor Baker says. "Fundamentally what it reveals is a very real and urgent need to lower household crowding as a first step to reducing these serious diseases among our most vulnerable populations."

Professor Baker says interventions such as Housing New Zealand's Healthy Housing Programme in Auckland, Northland and Wellington, which focuses on reducing crowding, improving housing conditions and linking households to health and social services, is successfully lowering hospitalisation rates for children in those areas.

The budget announcement to add 3000 new state house bedrooms and 500 new homes is promising, but considerably more social housing will be needed to have a significance impact on infectious diseases, he says.

"New Zealand faces a severe shortage of affordable housing. The proportion of children exposed to household crowding has been rising in New Zealand. About 45 per cent of Pacific children and 28 per cent of Maori children are living in crowded houses, compared with 8 per cent of European/Other children. New Zealand needs a large scale programme to construct thousands of additional social and affordable houses if it wants to reduce household crowding and prevent many cases of serious infectious disease."

Professor Baker says this study has underestimated the likely contribution of household crowding to serious infectious diseases. Due to a lack of high quality published studies, several important [infectious diseases](#), notably skin infections and rheumatic fever, could not be included.

"Although household crowding is likely to be important for such diseases as rheumatic fever and skin infections, we cannot currently put a figure on the likely number of cases of these diseases caused by this exposure."

The paper is titled "[Infectious diseases attributable to household crowding in New Zealand: A systematic review and burden of disease estimate](#)."

Provided by University of Otago

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