

International Journal of Population Data Science

Journal Website: www.ijpds.org



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Prifysgol Abertawe

The Housing Regeneration and Health Study

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Objectives

A social housing regeneration programme, delivered by one Welsh local authority, has invested £204M (US\$308M) to upgrade its housing stock in order to meet a national housing quality standard; the Welsh Housing Quality Standard (WHQS). Homes may receive new bathrooms, kitchens, heating, windows and doors, and insulation. Our objective is to evaluate the effect of implementing the concentrated WHQS investment policy on the physical and mental health of the residents compared to the standard ‘business as usual’ policy of housing stock maintenance.

Approach

Data for all children who had had a PICU admission in the UK between 1st Jan 2004 and 31st March 2015 were identified from the PICANet dataset. Using housing and regeneration data from the Local Authority and an anonymised databank (Secure Anonymised Information Linkage, SAIL) we have established a residence-based cohort. The primary outcome is a relative change in emergency hospital admissions (injuries, cardiovascular and respiratory conditions) following housing improvements; secondary outcomes include health care utilisation costs, primary care mental health conditions and deaths. Different comparator groups will be used to adjust for trends over time.

Results

We have linked housing data to individuals and their health data using a novel data linkage system. There are about 32 000 residents in the intervention group, 49 000 in a social housing comparator group; and 231 000 in a large general comparator group. Residents who migrate within the social housing cohort are retained using data linkage methods. Records relating to res-

piratory and cardiovascular conditions as well as falls and burns were obtained retrospectively for each individual, from 2005 to 2015, with measurements captured in 123 monthly time intervals. We are using a three-level negative binomial model, in which time is nested within individuals within properties, to examine the effects of the housing improvements on the mean number of emergency hospital admissions, whilst adjusting for individual-level explanatory variables such as gender, age and comorbidities.

Conclusion

We discuss the challenges and benefits of linking routine housing and health data to evaluate a natural experiment. We have identified differences between residents in the study area and the comparator groups to evaluate the health benefits of a targeted housing improvement program to implement the WHQS.

The evaluation was funded by the National Institute for Health Research, Public Health Research Programme, United Kingdom. (<http://www.nets.nihr.ac.uk/projects/phr/09300602>).

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