

HEALTHY HOMES INITIATIVE: INITIAL ANALYSIS OF HEALTH OUTCOMES

An Executive Summary

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SUMMARY HAIKU

Poor quality homes
cause injuries and illness
worth millions each year.



INTRODUCTION

The purpose of this evaluation is to determine whether the Healthy Homes Initiative (HHI) programme has improved health and social outcomes for families who have taken part, and if it offers value for money.

The aim of the HHIs is to increase the number of children living in warm, dry and healthy homes and to reduce avoidable hospitalisations and ill health due to housing-related conditions. The HHIs were established between December 2013 and March 2015 and cover 11 District Health Boards. Initially, the HHIs targeted low-income families with children at risk of rheumatic fever living in crowded households. The programme was expanded in 2016 to focus on warm, dry and healthy housing for low-income families with 0 to 5 year-old children and pregnant women.

METHODOLOGY

The HHI providers identify eligible families, undertake a housing assessment and then work across agencies to facilitate access to a range of interventions to create warmer, drier, healthier homes. At 30 December 2018, 15,330 referrals have been made to the HHIs and over 40,000 interventions have been provided to families.

4,093 referrals were received by HHI providers with a primary client identified in each case. Figure 1 demonstrates how the smaller evaluation sample of 1,608 referrals was selected from these.

Figure 1: Evaluation sample



For each referral, data were used from the two years either side of when the whānau engaged with an HHI provider to improve their home environment. Any events for the referred child within the 'intervention' period (between earliest and latest intervention dates) were excluded. Hence, the results are based on comparing health outcomes for the referred child in the one-year follow-up period to health outcomes in the year prior to the intervention.

These estimations take into account the way that children tend to need fewer medical interventions as they age, as well as the fact the hospitalisations observed for the evaluation sample prior to the HHI intervention are likely to be higher than would otherwise be expected. An eligibility criteria for referrals for two of the HHI target populations is a prior hospitalisation for a housing sensitive hospitalisation. This effect (selection bias) has been accounted for in these estimations.

The evaluation is co-funded by the Ministry of Health, Housing New Zealand and the Ministry of Housing and Urban Development. The results and opinions expressed in this study are the work of the authors.

This evaluation only includes a one-year follow-up period for the referred child after the HHI referral and after all interventions have been completed. The next phase will use more detailed data, a bigger sample size of referrals, additional methodologies to capture benefits for the four target populations, and longer follow-up periods.

SAMPLE POPULATION

The evaluation sample population was young, with over 40% of the children aged 2 to 5. They were more likely to be Māori (55.2%) or Pacific (36.6%) than the general population. Nearly half of the households lived in Housing New Zealand homes and 38% lived in private rentals.

RESULTS: HOSPITALISATIONS

Based on this analysis, it is estimated that there were 160.78 fewer hospitalisations in the sample population using only the year immediately following each referral's intervention period. Extrapolating to all of those involved in HHI, there were 1,533 prevented hospitalisations directly attributable to the programme.

On average, hospitalisations in the year after the intervention were less costly and shorter in duration than those prior. After adjusting for age and selection bias, the average hospitalisation post-intervention was 0.69 nights shorter and \$541 less costly.

RESULTS: GP VISITS AND PHARMACEUTICAL DISPENSINGS

After controlling for age, it is estimated that there were 990.17 fewer GP visits in the sample population and 9,443.28 prevented GP visits directly attributable to the programme.

It is also estimated that there were 921.17 fewer pharmaceutical dispensings in the sample population and 8,784.09 fewer dispensings directly attributable to the programme after controlling for age. The age effect in this analysis was considerable.

RESULTS: COSTS AND BENEFITS

The costs for this initial analysis are primarily related to staffing costs for delivering the programme. These costs are estimated by the Ministry of Health at \$1205 per family. As at 30 Dec 2018 - there were 15,330 eligible referrals received, and 10,326 families had been assessed and completed a housing intervention plan. The total programme cost was \$19,173,581. This does not include the costs of providing some interventions (e.g., the cost of providing heaters or installing insulation) due to a lack of data.

Using the average cost of a hospitalisation at the time, the 1,533 hospitalisations prevented in the year after the HHIs would have cost approximately \$6.3 million. Moreover, the reduction in severity of the hospitalisation is estimated to avert costs of \$3.3 million in the earliest year post-intervention. The total averted hospitalisation costs attributable to the HHI is therefore \$9.9 million.

Using the cost per visit from Treasury's CBAX Tool of \$80, the expected costs averted is \$755,440 for the 9,443 GP visits prevented by the programme.

For prescription dispensings, the costs averted are estimated at \$8.45, which amounts to costs averted of approximately \$74,225 in the earliest year post-intervention.




Table 1: Health Care Costs Averted by the Healthy Homes Initiative

Types of Costs Averted	#	Cost per Unit	Years Post-Intervention			Total Years 1-3
			Year 1	Year 2	Year 3	
Hospitalisations	1,533	4,090	6,269,579	5,914,697	5,579,903	17,764,178
Hospitalisations - Reduced Severity	6,101	541	3,302,906	3,115,949	2,939,575	9,358,431
GP Visits	9,443	80	755,440	712,679	672,339	2,140,458
Prescription Dispensings	8,784	8	74,225	70,023	66,060	210,308
Total			10,402,150	9,813,349	9,257,876	29,473,374

Note: All costs are extrapolated out using prevented healthcare events in a single year after intervention.

In total, the HHI programme is expected to avert approximately \$30 million in costs over a 3-year period. Using the programme cost of approximately \$18.5 million, the expected return on investment would be realised in Year 2 of the programme.

This analysis only includes the direct medical costs averted for the referral child and does not include other potential benefits. For example, it is expected that these children would be absent from school less often and that their parents would also be absent from work less often.

FUTURE RESEARCH

For the second phase of this HHI Outcomes Evaluation, the analysis will control for specific interventions received by individual referrals. This data will be placed in the Integrated Data Infrastructure (IDI), which will also enable a broader range of outcomes (social, as well as health) to be captured for the primary child referred, as well as other household members.

Use of the IDI will also allow us to identify a control population. This will ensure that a wider range of HHI referrals (including 0-2 year olds) can be included in the evaluation and appropriate adjustments made for effects such as age and selection bias once again. The more detailed extension to this evaluation of the HHIs will capture a broader range of outcomes across a more representative sample of referrals that will inform future developments in the delivery of housing and health interventions.

CONCLUSION

As at December 2018, the Healthy Homes Initiative (HHI) programme has received 15,330 eligible referrals and delivered over 40,000 interventions to low-income households. These are estimated to have resulted in 1,533 fewer hospitalisations, 9,443 fewer GP visits and 8,784 fewer filled prescriptions in the first year after the programme's intervention.

The savings to the health care system due to these reductions are estimated to be approximately \$10.4 million. In total, the HHI programme is expected to avert approximately \$30 million in health care costs over a 3-year period. The return on investment is expected to be less than two years.

This initial analysis is based only on outcomes from the first year after intervention and only for the referred child. In reality, the benefits will be realised by all household members, and are likely to be long term. Restricting ourselves to just the major health effects for one child per household underestimates the effects of the HHIs.

