The Healthy Housing Programme: Report of the Outcomes Evaluation (year three)

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Aims

This report provides findings from the final year of a three year outcomes evaluation of the Healthy Housing programme. The aims of the 2007 evaluation are to identify and critically review:

- The evidence that the Healthy Housing programme continues to make a difference in the risk and rate of housing related diseases, conditions and injuries, and improved wellbeing.
- The sustainability of the effect of interventions on the households.
- Any obstacles to the achievement of expected and unexpected outcomes for the Healthy Housing programme.

The evaluation assesses the extent to which the programme has contributed to:

- The effectiveness and efficiency of the collaboration between Housing New Zealand Corporation (Housing New Zealand) and district health boards in assessing and meeting housing and social needs.
- Wellbeing and social outcomes (such as sense of comfort in the house, perceived reductions in housing-related illness and accident, income, employment, community participation) for tenants involved with the programme.
- Improved quality of Housing New Zealand's housing stock.
- The effectiveness of the utilisation of housing stock.
- Any reduction in unmet housing need.
- Reduction in inequalities in housing.

Methodology

The evaluation methodology draws on the philosophy and culture of the programme: a strengths-based, solution-focused and collaborative approach. An approach known as the Success Case Methodology is adapted to determine 'what success looks like' based on a review of programme documentation and the literature around housing and wellbeing. The expansion of the evaluation methodology in this phase (for example, a greater degree of cultural matching between interviewers and households) has contributed to enhanced quality, reliability, and interpretation of the data.

Outcomes

As a consequence of this evaluation we are able to update the Pathway to Success model.

The occupancy numbers of most households remained the same as the previous year, only four households had more people living in the house. Three of the four cases of increased household occupancy was a result of natural birth[1]. Of these four households, three had an initial intervention to reduce overcrowding. The households remain extremely positive despite the difficult circumstances many find themselves experiencing such as financial hardship and health problems. It is evident that the impact of Healthy Housing on

[1] We are unable to establish whether this makes the house technically overcrowded.

the households continues to benefit the families on a day-to-day basis. A large number of households remained in the evaluation for the third year. They continue to experience better health than before the interventions were introduced and many still attribute this improvement to the Healthy Housing intervention. The added space enables the households to have privacy, group functions and function better as a family. Some households appear to be adopting healthier lifestyles and eating habits.

The key obstacles to success mentioned by the households revolved around maintenance. These maintenance issues are outside the scope of the Healthy Housing programme as the responsibility lies with the maintenance team of Housing New Zealand. There was variation in the households understanding of the purpose and use of interventions such bathroom fans, ventilation strips and range hoods and in the understanding of the causes of mould; for example there is recurring mould in two households that didn't appear to be prevented. Another problem expressed by a number of families was that children are out-growing the additional space provided by the initial intervention. One of these houses had an initial intervention to alleviate overcrowding.

The providers remained passionately involved in the programme and provided many examples from their perspectives of success for the households including improved health, provision of appropriate living space for people with disability. They did however note that some members of the community were not happy that not everyone received the intervention. Reasons for this include the initial selection process of Healthy Housing homes, households choosing not to participate in the programme or houses receiving different types of interventions.

There are many positive outcomes for providers such as a raised profile publicly, and sharing of the lessons learnt so other projects can benefit. The value of the expertise of the team members and the support and involvement of management cannot be underestimated. This is an important concept for 'outsiders'[2] to consider because the ease with which the programme appears to function is a reflection of the partnership, teamwork, clinical expertise, and process integrity that is not readily apparent. The programme is experiencing a few limitations and strategies are being investigated to better work out funding for people with disabilities through *access*able[3].

The programme continues to adapt and this is apparent in the way some meetings have been refined and the housing interventions are made more durable and appropriate for future housing needs. The Healthy Housing programme has now been mainstreamed within the Counties Manukau District Health Board and seen as an important programme for the outcomes it is achieving.

Collaboration between the two key partners in the Healthy Housing programme has a positive impact on the outcomes. Continued programme adaptation positively contributes to the intervention for the households. The positive benefits of the intervention effects contribute to the sustainability of the intervention for households.

The third year of the evaluation provides compelling evidence from the householders and programme staff of the continuing positive impact on housing-related diseases, conditions and wellbeing. It appears that there has been continuing success of the Healthy Housing programme and the Pathways to Success model has been able to confirm this over the three years of the outcomes evaluation.

[2] Outsiders in this instance are any providers not involved in the direct Healthy Housing team.
[3] *access*able offers services such as Ministry of Health applications for the provision of housing alterations that enhance independent lifestyles.

Abbreviations

DHB	District Health Board
RENTEL	Database of Housing New Zealand's tenants
SCM	Success case method
Work and Income	Work and Income New Zealand

1 Introduction

1.1 Rationale and aims of the outcomes evaluation (year three)

Evaluation is a means of assessing the merit, value, and effectiveness of programmes in the light of their objectives. Housing New Zealand's Statement of Intent requires that all programmes be evaluated (HNZC, 2004c) and, in particular, Housing New Zealand has been required to undertake an outcomes evaluation of the Healthy Housing programme. An outcomes evaluation assesses the quality and significance of programme outcomes, both positive and negative (Stufflebeam, 1983).

This evaluation aims to identify and critically review:

- the evidence that Healthy Housing has made a difference in the risk and rate of housing related diseases, conditions and injuries and improved well-being
- the outcomes that have been achieved for Healthy Housing
- any barriers to the achievement of expected and unexpected outcomes for the Healthy Housing programme.

1.2 Methodology

The evaluation methodology draws on the philosophy and culture of the programme: a strengths-based, solution-focused and collaborative approach. It adapts an approach known as the Success Case Methodology (SCM) to determine 'what success looks like' based on a review of programme documentation and the literature around housing and wellbeing. Evaluation questions were developed directly from the programme logic (see page 13). The evaluation questions were further refined in collaboration with Healthy Housing programme providers. Because of the complexity of this evaluation, an Evaluation Crosswalk has been used to structure and categorise the evaluation questions, and indicate proposed data sources for addressing each evaluation question. The expansion of the evaluation methodology in year two (for example, a greater degree of cultural matching between interviewers and households) contributed to enhanced quality, reliability, and interpretation of the data. In the third year of the evaluation, the Evaluation Crosswalk has been further refined and questions for the third year of interviews have been developed accordingly. The evaluation methodology is described in more detail in Appendix A of the report.

1.3 The connection between housing and health: research background

The purpose of this section is to provide a brief overview of the key evidence supporting the relationship between housing and health.

The home environment can prove detrimental to health. According to several review papers, cold, damp, and mouldy homes contribute to ill health (Breysse, Farr, Galke, Lanphear, Morley, & Bergofsky, 2004; Krieger & Higgins, 2002; Krieger, Takaro, Allen, Song, Weaver, Chai et al., 2002). Cold interior temperatures are an independent factor in morbidity and mortality. There is some evidence that cold interior temperature (below 15ºC) is a risk factor in increasing asthma severity and Chronic Obstructive Pulmonary Disease. Mould and interior moisture provide a nurturing environment for mites, roaches, respiratory viruses, and bacteria; all of which play a role in the development and maintenance of asthma and other chronic respiratory diseases (Breysse et al., 2004;

Howden-Chapman, 2004; Krieger & Higgins, 2002). A case-control study investigating housing, heating and health, found that installing insulation and effective heating increased the indoor temperature of the house and significantly improved the self reported health status of the intervention group (Housing heating and health research team, 2007).

Insufficient ventilation increases moisture in the home, as well as indoor air pollutants such as tobacco smoke and nitrogen dioxide from inadequately vented or poorly functioning combustion appliances, and can contribute to asthma (Breysse et al., 2004; Krieger & Higgins, 2002; Krieger et al., 2002).

Overcrowding supports interior moisture as well as increases the transmission of a number of infectious diseases, particularly those spread by respiratory means and direct contact, and may also contribute to transmission of skin infections (Baker, Milosevic, Blakely, & Howden-Chapman, 2004). A large case-control study of meningococcal disease in Auckland schoolchildren showed that household crowding was the most important risk factor for this disease (Baker, McNicholas, Garrett, Jones, Stewart, Koberstein et al., 2000).

Structural deficits can have more obvious effects on households. Falls are the primary source of residential injury for children. Lack of safety devices, such as grab bars, safety gates, or window guards, and insufficient lighting on stairs and other areas, are the leading hazards associated with injurious falls (Breysse et al., 2004).

Substandard housing, particularly dampness and crowding, have been linked to poorer mental health and psychological distress (Butler, Williams, Tukuitonga, & Paterson, 2003; Krieger & Higgins, 2002). Furthermore, occupants of substandard housing may be reluctant to invite guests into their homes, leading to social isolation, a condition associated with mortality (Krieger & Higgins, 2002). On a larger scale, housing type influences the quality and quantity of interactions within neighbourhoods, affecting social cohesion, trust, and a collective sense of belonging (Kearns, 2004).

1.4 Description of the Healthy Housing programme

1.4.1 Origins

The Healthy Housing programme is a collaborative initiative involving Housing New Zealand and three district health boards: Counties Manukau District Health Board (Counties Manukau DHB), Auckland District Health Board (Auckland DHB), and Northland District Health Board (Northland DHB).

In December 2000, Housing New Zealand, Auckland Regional Public Health Service (a regional public health service operated by Auckland DHB) and South Auckland Health (now Counties Manukau DHB), initiated the programme with the primary aim of reducing the risk of infectious diseases, particularly meningococcal disease, among families residing in Housing New Zealand's properties. Since then, almost 5000 families have had a combined health and housing intervention at a cost of $60 million (mainly capital investment) aimed at improving access to health services and reducing risks to health from their housing environment.

The evaluation carried out by Auckland UniServices for the pilot phase of Healthy Housing (January 2001–June 2002) showed that the intervention was associated with a reduction of 33 percent in hospital admissions in the intervention group compared with a geographically-matched comparison group (Auckland UniServices Ltd, 2003). Allied with this was an increase in emergency room and outpatients clinic attendances in the

intervention group compared with controls. These findings together point to an increase in early care-seeking - a desirable result for Housing New Zealand's households, who generally underutilise healthcare services given their level of ill health. Healthy Housing has led to a decrease in hospital admissions (Auckland UniServices Ltd, 2003; Jackson, Woolston, & Papa, 2006).

Over time, the programme's scope broadened to encompass objectives around improving the health and welfare of Housing New Zealand households living in identified areas of extreme health risk and/or crowded conditions through collaborative activities with district health boards and social service agencies. The programme has four aims:

1. improved health outcomes for Housing New Zealand's households
2. improved welfare outcomes for Housing New Zealand's households
3. reduction in the risk of housing related health problems
4. improved availability and quality of state housing for larger families.

To achieve these aims, the programme has a number of intervention levels.

- A housing intervention by Housing New Zealand aimed at reducing the risk of housing related diseases, conditions, and injuries.
- A specific housing intervention designed to reduce overcrowding.
- A health intervention by district health board public health nurses aimed at improving household access to primary health care services, and household knowledge and behaviour to improve health outcomes.
- A joint intervention that identifies social wellbeing and support issues, and provides linking and facilitation to the appropriate government and social service agencies.

Another intervention level is the development of household action plans to promote sustainability initiated by Housing New Zealand as required for households whose houses are extended or who move into new houses. This is a housing services intervention and not strictly a key element of Healthy Housing.

The programme has also been implemented in other areas of Counties Manukau DHB and Auckland DHB. A partnership has also been established with Northland DHB, and the Healthy Housing programme commenced operation in Whangarei, Kaitaia and Kaikohe in Northland. The programme has been acclaimed as a health innovation, winning the supreme 2005 New Zealand Health Innovations Award.

1.4.2 Intervention area and household selection

House selection covers all Housing New Zealand households in an area. Initially Healthy Housing selection was based on individual houses with higher occupancy rates. Intervention area selection is currently based on a ranking exercise in which census area units are scored and ranked according to a combination of criteria. These include:

- crowding data derived from the population census
- deprivation score (NZDep2001)
- hospital discharge data on communicable diseases with a known association with household crowding
- high concentrations of Housing New Zealand houses in the census area unit.

1.4.3 Household assessment

A joint assessment tool is used to identify health risks and unmet housing needs of households and is administered by a public health nurse and Housing New Zealand Area Coordinator in conjunction with participating families.

The area coordinator focuses on:

- property
- suitability of the house for the family given its size
- age and sex composition of family
- outstanding maintenance needs
- the presence and condition of 'health hardware' (such as the toilet, laundry, and kitchen appliances)
- the presence of mould and dampness
- adequacy of fencing on the property.

The public health nurse focus is on the health (including mental health and disability) of the family and their linkage with appropriate health and social support services.

1.4.4 Household interventions

The following table describes the different interventions that are administered by the Healthy Housing programme.

Healthy Housing interventions

Intervention	**Description**
Healthy environments (ventilation, insulation, heating)	Installation of ventilation and insulation and upgrading of heating sources.
Design improvements (modernisation, design improvements)	Improve quality of and the addition of property facilities, especially kitchens and bathrooms.
Extensions (wing attachment, relocatable units, building extensions)	Increase the availability of living space to a household.
Transfers – existing	Reduce crowding by changing the number of inhabitants in a house.
Transfers – new (new build, purchase of new property)	Reduce crowding by changing the number of inhabitants in a house.

Source:(Laing, Bernacchi, Baker, & McDonald, 2006)

1.4.5 Action plans

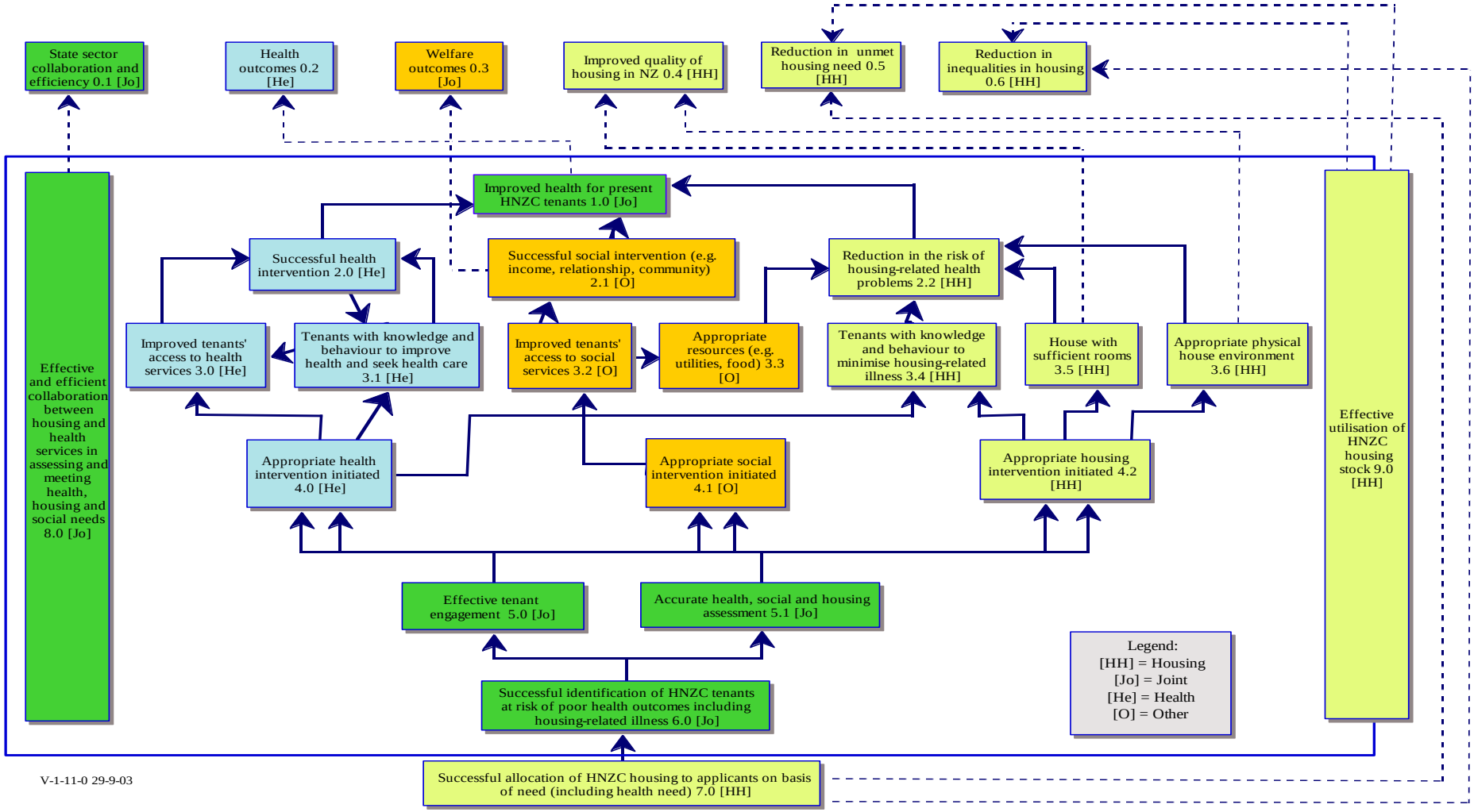
A joint action plan is developed in consultation with team members, tenancy managers and the households. An individualised household management plan is developed and, on

completion of the intervention, the household is revisited to ensure familiarity with the new features of the house and maintenance of a healthy indoor environment.

1.4.6 The programme logic

The diagram on the following page (Figure 1) presents the programme logic that underpins this programme. It was developed collaboratively with the Healthy Housing management team in 2003. It provides a model of how the Healthy Housing programme works and incorporates the links between the agencies and expected outcomes.

Figure 1 *Programme logic for Healthy Housing*



2 Household stories

The following selection of household stories are provided as a means for the reader to gain a more complete understanding of the households involved in the evaluation and the types of changes they have experienced. Pseudonyms have been used in the household stories to protect the identity of the participants.

Interviewers were asked to provide a summary story of each household they interviewed. The following stories illustrate the different changes that have occurred in households from the interviewers' perspective. After Healthy Housing some households experienced significant ongoing change, and other households remained stable in their initial positive changes.

2.1 Story One

Year of joint assessment: 2003
Intervention: Modernisation

Story from interview in 2006

Before moving into this house, June said that she was a home-owner. However, due to personal circumstances she had to sell her house and apply for a Housing New Zealand property. She said that the reason why she got involved with Healthy Housing was because her mother was very ill and needed somewhere urgently to stay. June's mother is now deceased and June now only lives with her two sons.

Her oldest son is blind and also suffers from type 2 diabetes. His blindness started a year after they moved into this house. In 2005, the son got his leg amputated due to bad circulation. June says it's because of the diabetes. The son now uses an artificial leg and wheel chair to get around. June says that her son has benefited from the walk in shower that was intentionally put in for her deceased mother [as part of the Healthy Housing intervention]. However, recent complications of his legs and poor circulation due to his diabetes, are causing problems. She feels the house requires re-inspection.

June is a very cheerful single mother of two, who enjoys caring for her sons and going to church. Taking care of her sons keeps her busy but she still makes time for herself, visiting her friends or going to the market just down the road from the house.

Story from interview in 2007

Nothing much has change since the last visit regarding June's situation.

Her elder son's diabetes is still very much her main responsibility. Taking him for regular check ups and dialysis requires her full time commitment. Age is very much catching up to her and she is now not as active as she would like to be. Her chronic coughing and chest pains are giving her problems and preventing her from doing what she loves to do most; doing outside work on the lawn and her garden. She now hires someone to help her.

June is a very busy outspoken lady who is very committed to her son's needs and aware of her own frailty, yet still finds time and the energy to visit friends, go to church, have family over and at the same time keeping her home very cosy and comfortable.

2.2 Story Two

Year of joint assessment: 2005
Intervention: Design improvements (ramp, level access shower and hand rail), Modernisation

Story from interview in 2006

This family of two consisting of the mother who is 72 years old and her daughter (Sally) who is 46 years of age who is also her caregiver live in a two bedroom Housing New Zealand home which was modified by Healthy Housing in July of 2005.

Sally said that her mum suffers from multiple conditions. The house needed alteration because of the mother's health condition and because she's confined to a wheelchair. Sally said that the design of the house was made accessible for her mum's wheelchair and it had made a big difference for them but especially for her. She said the house is easier to clean and it's a bit warmer now compared to their previous home. Sally said that her mum is happier and healthier apart from her cancer and diabetes. "I don't feel tired like before because there are times I had to half carry mum to the bathroom and around the house but now everything is easily access[ed]".

However there are parts of the house that need to be altered to make them more accessible but we are both happy with the overall changes. Sally said that she is very happy that Healthy Housing responded to what they requested and mainly her mother's needs and that she is very thankful.

During my visit to this household Sally looks very happy and relaxed. She was telling us that families and friends admired how clean, warmer and comfortable the house was. She said that "we don't want to leave the house because we feel so comfortable and the atmosphere is marvellous". Sally said that now she felt so confident and relaxed when people come to the house because it's clean, warmer and comfortable. It was obvious that she kept the house clean and tidy and that they are happy in their new home. Overall the interview went really well and the family were very happy with the changes.

Story from interview in 2007

Sally stated that she is impressed with the changes that have been made and that they have made her home a lot nicer and visitors have commented that her home resembles a hotel. The extra storage in the kitchen helps to keep it clean and tidy. The new bathroom makes the surfaces a lot easier to clean. However she expressed concerns with the current state of her two bedrooms, which has now left her sleeping in the living room, due to excess mould on the walls, which she also believes has caused her current health problems, high blood pressure and diabetes.

At times throughout the interview she expressed how the loss of her mother has taken a toll on her and at times has made it hard to come home, but her faith and family have helped her to move on. Up to a couple of weeks before the interview took place her brother, sister-in law, niece and nephew were still living with her, but now reside in their own rental home. This does not faze her as she enjoys helping her family.

Now that she lives by herself she finds that she has a lot more time on her hands, and spends most of it working, or at her brother's residence or at her own home cleaning. She takes great pride in her home, and this is evident throughout the interview, but is disheartened by the lack of response from Housing New Zealand in trying to fix the two bedrooms and the fences on her property [which are not within the scope of the Healthy Housing Programme].

2.3 Story Three

Year of joint assessment: 2002
Intervention: Extension from a four-bedroom to seven-bedroom house

Story from interview in 2005

A Tokelauan family of 10 are living in a house that has been extended by Healthy Housing. Before the changes the whole family experienced poor health – particularly flu, colds and diarrhoea. They had high levels of stress and were unhappy with their house because it was severely overcrowded and the children would always fight. Healthy Housing extended the house and added bedrooms and an extra bathroom and toilet.

They have fewer visits to the GP and no more cases of diarrhoea and feel this is because of the changes that were made to the house. The family as a whole are happier and are involved more in community activities, and they feel more able to open up their home. The children are at home more, rather than just walking the streets and are doing very well in school. The parents have also taken a more active role in their children's education. They are always receiving complements about how nice their house is and have a great sense of pride in their home.

The mother is pregnant with twins and is not working, the father has been unemployed for six months. He stopped working to help his wife with the children and the housework. Money has always been an issue for the family and now that the house has been extended they are paying more in electricity and have been informed that their rent will be increasing in the near future [because of a rent review]. Once the major bills are paid for there is little left for other things such as food, school expenses and other bills.

Even after the extensions on the home, the parents are sleeping in the lounge so that their children can have their own space, considering the twins will be arriving in a few weeks – the house is still not big enough for this soon-to-be family of 12.

Story from interview in 2006

According to the parents after the modification made to the house by Healthy Housing their health and social life has been a lot better than before. The younger children now have infrequent visits to the doctors. The only illness was the flu but apart from that the children have been well and healthy. The older children's education has improved a great deal because they now have their own room which enables them to study without being disturbed by the younger ones. Family visits and functions are more frequent now compared to before because of the large spacious living room and the rest of the house.

The parents were very grateful with the alteration because their living situation has changed and this has been a positive effect on the family in terms of their health and social wellbeing. Although their living situation has been sorted the family is now confronted with financial hardship because they are paying more on electricity bills.

The parents said they are financially struggling but the important matter is that they are able to pay off important bills and buy affordable food for the family. Male parent said "we are struggling and just managing not like other families who are in a more serious situation than we are and I'm thankful that we are ok".

Story from interview in 2007

This family of fourteen all live at this house that has been modified by Healthy Housing. Both the parents are not working and stay at home with their 19 month old twins who are disabled. Both parents assume the full-time care giving responsibility of their disabled children.

According to the parents after the [initial] modification made to the house by Healthy Housing their health and social life has been a lot better compare than before. In the last year, their younger children have not made frequent visits to the doctors such as in the past because of the flu, but have been well and healthy. The older children's education has continued to improve a great deal because they now have their own rooms which enable them to study without being disturbed by the younger ones. Family visits and functions are more frequent now compared to before because of the large space in the living room and the rest of the house.

The parents expressed that they were very satisfied with the alteration to the house because it has changed the household behaviours and the health, especially of their children. Moreover, the parents expressed that they 'feel free' with the knowledge that they have a bigger house for their children, with its additional benefits.

2.4 Story Four

Year of joint assessment: 2002
Intervention: Extension from a three-bedroom to five-bedroom house

Story from interview in 2005

Jenny is a solo mother of Samoan origin who has been residing in New Zealand for around 10 to 15 years but still has limited English and other educational skills. She is currently undertaking courses to increase her educational capabilities and is unemployed. She has five children who all still live at home. Jenny's youngest child (four years) is still at home, is not attending preschool but should be attending primary school in the New Year. The eldest son's partner is at home sharing childcare responsibilities.

Healthy Housing has had a significant impact on the physical, social and psychological wellbeing of the whole family. The family were provided with a larger home that is more spacious with each child having their own bedroom. This meant easier physical movement and airflow through the home thus less crowding and 'lots of fresh air… to breath easier'.

Jenny felt that Healthy Housing was important for the health of all people in the community. The programme encouraged and inspired people to care for their homes and gardens and that 'the programme is useful for big families', like her own Samoan family.

Story from interview in 2006

The household continues to experience positive benefits from the changes made to their home. Jenny is less anxious about the children hurting themselves because of the changes to the house structure and she finds it easier to clean the house and look after the children. The children are actively involved in sport and church activities.

Jenny recognises the importance of having space for everyone and acknowledges that it is good for the health of the family members.

Story from interview in 2007

Compared with previous years Jenny's personal situation in terms of employment and income has not changed. She continues to receive a Domestic Purposes Benefit as a single mother/grandmother, but also remains to play the role of having the main responsibility for the running of the household.

However, the household size and dynamics have changed moderately. Since the last interview (in 2006) another daughter has moved into the home along with her two young children, increasing the household size to 10.

The young children appear to be creating more work (difficult to care for) and stress in the household as they age, becoming more individualistic and competing for space and authority over each other. Due to their increasing age, the children are also more physically active and vociferous with regard to their interaction with each other, and will ‘make for the door’ at any given opportunity. To add to this, one of her other sons (who resides elsewhere) leaves his two young children (ages 1 and 8 years) under her care while he goes to work five days a week.

It was speculated (as suggested by the family doctor) that this change in household dynamics (more people in the house) could be the reason why Jenny currently has high blood pressure, for which she is currently being treated. She had not been diagnosed with high blood pressure in the last interview or prior to that. Apart from this, the rest of the household is healthy in the sense that there has been no ill health, including accidents or injuries, in the family (household members) apart from the youngest children having a cough in the last six months. Further, there have been no changes in regard to relationships between other household members in the last 12 months and relationships are amicable. Jenny has noticed that the adjacent park has been used more frequently by all family members for play and recreation.

For Jenny’s family Healthy Housing has changed their lives in that her children and their families are able to have their own spaces to be in charge of, to care for, and to enjoy in their own time.

3 Household journey

3.1 Overview

The following section covers some of the key themes that have been identified from the household interviews. Many of these themes have been covered in year one and two of the outcomes evaluation. The purpose of this section is to build on these and provide further evidence from the households that the intervention is having a positive impact on the households and their day-to-day functioning. As well as showing that the interventions have proven to be sustainable over time.

3.2 Household participation in the evaluation

Over the three years of the evaluation, a total of 44 households from three different suburbs in the Counties Manukau region have been interviewed. This included 25 households in the first year (2005) made up of 13 households from Otara and 12 from Wiri; 39 households were interviewed in 2006 made up of 20 follow-up interviews from Otara and Wiri and 19 new households from Mangere. In 2006, 36 households agreed to be followed-up in an interview in 2007, of these 36 households 23 households (seven from Otara, eight from Wiri and eight from Mangere) were contacted and successfully interviewed (see Table 1). The majority of the households are Pacific peoples with one Maori household interviewed in 2007.

Table 1 Summary of households interviewed in 2005-2007 by suburb

	Interviewed 2005	**Interviewed 2006**	**Interviewed 2007**
Otara	13	10	7
Wiri	12	10	8
Mangere	N/A	19	8
Total	25	39	23

The households included in the evaluation had a variety of Healthy Housing interventions (see Table 12). Six of the properties had extensions made to the house, five houses had significant changes made to their homes in the form of modernisation or a specific modification for example, the addition of a ramp. Two properties had a part-transfer, where one family unit was shifted to another house to remedy overcrowding, and four households were transferred into houses that were more appropriate for their situation. There were six houses that received only the insulation and ventilation intervention.

Table 2 shows each suburb involved in the evaluation and the year in which the joint assessment took place in the households that were interviewed in 2007. Mangere has had the most recent interventions, where most of the joint assessments were carried out in 2005 and one being carried out in 2004. Wiri had most joint assessments carried out in 2003 and 2004, and Otara had much earlier joint assessments carried out in 2002 and 2003.

Table 2 Household participation in 2007 by date of joint assessment and suburb

Suburb	2002	2003	2004	2005
Otara	3	4		
Wiri		4	4	
Mangere			1	7

3.3 Household perceptions of success

This section focuses on the households' perceptions of success and covers the key themes of household occupancy, living conditions, health, family functioning, finances and employment, food, education, play, accidents and injury, understanding of the intervention, things to improve wellbeing, community impact, and the meaning of home.

3.3.1 Household occupancy

Since the last visit to the households in 2006, most household numbers (12 households) have remained the same. Seven households have fewer people living in the household and four households have more people in the house. For three of the four households with more people living in the house, this increase was a result of natural births. Of the four households that had more people in the house, three of these households had interventions aimed at reducing overcrowding.

Households also made comments about changes in household composition that have occurred throughout the year that are different again to the numbers collected at the time of the interview. This indicates that household occupancy can vary considerably throughout the year.

3.3.2 The house: living conditions

Most of the households that were interviewed noted their improved living conditions and compared them to the poorer living conditions they had previously experienced. Most of the comments focused on their houses having more space or more appropriate space, less dampness, and more warmth. These changes make their day-to-day lives easier.

> It has helped us keep our house very well ventilated and our house now is so much warmer with the Pink Batts[4] and there is no need for us to put the fire on.
>
> New place is easier to clean and maintain also.
>
> The renovations have allowed for her to move around more freely as it is more open and there is more space in the main living area.
>
> The temperature is warmer. It used to be damp with heaps of mould but that has reduced drastically.
>
> This house that we have is smaller than the house we were living in, but very suitable and appropriate to catering for me and my children.
>
> In the previous home she slept in the living room. In the new home she now has her own bedroom and is currently looking for a new bed to help with her health problems.

[4] Pink Batts is thermal insulation that is installed into the floor and ceilings of homes. It can significantly reduce heat loss in winter and heat gain in summer.

In 2007, specific questions were asked around heating and the durability of some of the Healthy Housing interventions.

Keeping the house warm and dry

Seventy percent of the households (16 households) use some form of heating (oil, gas, electric heaters or a fire). Whereas 30 percent of households (seven households) use other forms of keeping warm such as using extra blankets, hot water bottles and using an oven in the kitchen to heat up the rest of the living area (refer to Table 3). Six households (out of 23) mentioned that ventilation and insulation played a part in keeping the house warm and dry. Two households said their houses were warmer because of the intervention and therefore didn't need to use heating as much. Some households that do use heating mentioned that they only use it when it gets really cold, and then it is really only for the children and the elderly occupants of the home.

Table 3 Heating usage in households interviewed in 2007

Heating Usage	**Number of households**
Heating	16
No Heating	7
Total	**23**

Reasons given for not using heating include the use of power and its cost, fear of using a fireplace, fear of using any kind of heater, and fear of getting sick.

> Heater that Housing New Zealand installed in my living room. The house is very warm and this heater is sufficient to warming the whole house. Air vents have also been installed in our windows throughout the house to keep the house dry and fresh air to come in when the windows are closed.
>
> I use a milk bottle as a hot water bottle, extra blankets
>
> We don't use heaters or anything else – heaters make you sick (headaches)

Bathroom fans and range hoods

There were mixed reactions about bathroom fans and range hoods. While the households generally recognised their importance and what they were used for, some households didn't use them at all because they perceived them to use up too much power, others were happy to use them and noticed the reduction in mould and steam.

> The bathroom fan works very well. It was fitted in last year cause of our mould problems. Now I don't clean the walls and ceiling as much.
>
> The bathroom lights and fan she doesn't use as they consume too much power.

Carlielle kitchens and HardiGlaze bathrooms

New Carlielle kitchens and bathrooms that use HardiGlaze materials have been used by Healthy Housing since around 2004. Interviewers were unable to confirm whether the bathrooms and kitchens in the household were Carlielle and HardiGlaze, but households were asked about the condition of their kitchen and bathrooms if they had a new one installed. All households who commented on their bathrooms and kitchens reported them to be in good condition and no problems were mentioned. This shows that the kitchens and bathrooms are holding up well in the busy Healthy Housing households.

3.3.3 Health

In the last year, the self-reported health status of most of the households has remained the same from when the household was interviewed in 2006 (14 households). In the interview, four households reported more improvements in the health status of the household and five households reported the declining health of some household members.

Where there have been changes in health in the household this is mainly due to deteriorating chronic conditions and this has generally been matched with an increase in visits to health professionals. There appears to be a high level of understanding of the conditions experienced in households, medication requirements and reasons for extra doctor's visits.

For some of the households, the chronic conditions experienced continue to impact on the wider family unit.

> What affects them most is the cold weather. This causes the wife a lot of pain as she has very bad arthritis and at times she is unable to get out of bed to take the kids to school. Her husband is needed to stay behind from work and look after her and the other members of the family.

A number of houses reported no changes in health in the last year. There is a continued lack of illness that households attribute to the intervention.

> Less sick. Her granddaughter who has asthma is much better largely in part to the renovations made to the home. It is less dusty and there is more air circulation in the main living area due to the sliding doors and open plan living.
>
> The new carpet in the house saw many changes in her children's health.
>
> We don't get sick anymore we don't get the flu so often and sores, I believe this was because we were cramped in.
>
> In terms of her grandson he is much better especially after the ventilation was installed. The house has become warmer and he does not have asthma as often. He is fit and well and plays sports often when before he couldn't due to his asthma and she is very happy that he attends school regularly now unlike before.
>
> Son suffers from asthma and occasional seizures, but since moving into the new house, his asthma has become much better and they've been able to control his seizures.
>
> Having more space to move around helps. Children don't get as sick because they are not all living in the same small space like in their old house.

A number of households have reported attending educational activities related to their health problems, such as nutrition programmes and diabetes seminars.

> Attending more health promotion information nights especially for diabetes and 'How to look after yourself'.
>
> She is taking part in the Wellness Programme at the local recreation centre. It is a dietary programme that assists people with preparing nutritional meals. Due to her part time course she has not been able to attend so is currently making her own programme that works well for her.

3.3.4 Family functioning

Families continue to be happier as a result of extra space to play and move around. This extra space also provides privacy for family members which is highly valued.

> They've got their own room, they've got their privacy… before there were arguments "get outta there I'm using the room…"
>
> The relationships between family members are much better because they have their own rooms. Before the children had to share so were always fighting because they had to spend much time with each other.
>
> Lounge – a lot better – nice and spacious. Previous house was much smaller – new place is easier to clean and maintain also. Awesome – interviewee and son are much happier, love all the new space in their new house.

More space inside the home means that special family events and other activities can be held there in confidence.

> Moving here and being transferred from our original overcrowded house with my parents has really allowed me to spend more time with my kids. My children are definitely happier as they have more room to play and can be free to move around. It does bring me and my kids a lot closer.
>
> Since her mothers passing she held the funeral at home. They also hold family meetings and gatherings more frequently at her home because it is more spacious.
>
> We've had more visitors from church, daughters friends mothers (socially), other children, and family functions. We don't go out as much as we used to – we socialise at home more often.

Dinner time for a few households continues to be more pleasant because of the extra space provided.

> Kitchen is big enough now for the whole family. She just wants to buy a new dining table to fit the whole family.
>
> More open, the lounge is separated from the dining room, eat dinner together now rather than in separate rooms.
>
> More ovens mean that their food is cooked faster.

Households also talked about being more involved in church activities, and other events taking place in the community.

> A lot more involved with the church activities and services.
>
> More visits from her husband's family and the kids friends come round more often. Church members come round for meetings, bible study and youth programs. They attend the Nazarene church. She is sometimes worried that having all her children's friends' around her house makes her home look like a gang house. Children now attend a Youth community programme on Wednesday and Sunday night.

An increase in space for one household has meant that a member of the household who is sensitive to noise can remove himself from it when he needs to.

> He isn't complaining as much anymore. He is usually unsettled by excess noise in the household, but now that he has his own room he is able to isolate himself from disturbances.

3.3.5 Finances and employment

Most of the households interviewed are still experiencing financial strain. For some this has improved slightly in the last year, for others it has become worse. The financial situation of the household is largely dependent on the employment status of the household members. In the last year most households mentioned some form of employment change, including moving from employment to a benefit.

> Because she is on a sickness benefit she finds this quite hard as she was used to having more money and the benefit is basically nothing to what she was used to.

Running the household in the winter is expensive for households and this was raised as a concern for a number of the households. For example, this season causes the most detriment and financial burden, as more money is invested in purchasing blankets and firewood (for the fire place) to combat the cold.

A number of households mentioned the Easymeter[5] method of paying for electricity and commented on its usefulness as it gives the household more control over their electricity payments.

3.3.6 Food

In 2007, households made further comments about eating healthy and adopting a healthy lifestyle. Changes in food consumption and preparation usually coincide with changes in finances. In many instances healthy eating was talked about along side an acknowledgement of specific health problems, especially diabetes.

> Her family only eat fish and she considers themselves as being vegetarians. Reasons for this are because of the cost of red meat and the need to keep her children healthy.
>
> They rely less on the food grants from social welfare unlike before. They still use the grants but they hardly have in the past year. They eat more fruit, vegetables, and soup, so they are very focused on eating healthy food. They also cook their foods with less fat and oil.

The same household while focusing on healthy eating, has held onto traditional food by eating it as a family meal once a week, rather than every day.

> One major change that they have made is eating "island food" like taro and corn beef once a week as a treat for Sunday dinners. But they are mainly concentrating on eating healthy.

Other households noted the changes that they have made to their diet.

[5] The Easymeter system is a pre-payment method for electricity. An Easymeter is installed in the house, and a minimum of $20 electricity is pre-paid. When the household has approximately four days power left on their pre-paid card, the Easymeter in the house beeps, prompting the household to top up the pre-paid Easymeter card. There is an installation charge and this service is only available in certain areas.

> She has made changes in food choices such as using trim milk instead of full bodied, using artificial sweetener in replace of sugar and eats a lot more fruit and vegetables.
>
> Very conscious of foods they eat, due to family history of diabetes on both sides of the family. (One sister has passed away and another sister has recently lost her eyesight due to the illness).

3.3.7 Education

There were few significant comments on education. Among the comments made about education, one talks about altering an unused bedroom into a study room for her son away from other distractions.

> Space where he can do his homework, without getting distracted from the television.

3.3.8 Play

Households talked about having safe, close parks to play in.

> We're closer to a park which is safer – no hoons hanging around.
>
> The park (over the back fence) : children play at the park together with the adults; some of the older children play Samoan cricket; sometimes the adults go for walks.

One household, whose situation has improved over the last few years wants to enrol her younger children in after-school activities and endeavours to enrol her youngest child into kindergarten.

There are some issues with trouble from young members of neighbourhood preventing other young people from going to the local gym.

> The boys really can not go to the local gym (to play basketball) because of trouble with local youth – they just don't go anymore. Because of this same issue they cannot go out for a walk.

3.3.9 Accidents and injury

There were very few reported accidents or injury from the households. Usually when a household mentioned accidents it was out of speculation and fear of injury. Age may play a factor in this, one member of a household who mentioned fear of injury was in her 80s, another was in her 50s.

3.3.10 Neighbourhoods

For households that were transferred, there were few issues with the new neighbourhoods. Most talked about feeling safer and experiencing less problems with their new neighbourhoods in comparison to their old neighbourhoods.

3.3.11 Knowledge: households' understanding of Healthy Housing intervention

In households where ventilation strips have been installed, a number of households were not sure how they work. There was confusion around whether the ventilation strips enabled or stopped air flow.

Some households made the connection between the bathroom fans and mould growth and range hoods and steam. However there were a number of households who deemed these interventions unnecessary and useless and they seemed to cause more trouble than good. In these cases the fans and range hoods were less likely to be used regularly.

Households had a good level of knowledge around the use of ventilation (usually mentioned windows being opened) and insulation and their importance in keeping the house warm and dry.

One household made the connection between overcrowding and its impact on the families' wellbeing, the only solution mentioned by the head of the house, was for Healthy Housing to extend their home to make room for the increase in household members.

3.3.12 Factors that would improve the wellbeing of the household

Households were asked what factors would help to improve the wellbeing of the household. For many of them, this was fixing minor structural problems with the house such as broken window sills and peeling wallpaper. Others were more specific and mentioned that having access to a car or cheaper taxis would benefit their situation. A number of households suggested improvements that could be made to their home to improve their wellbeing, for example a garage, as a place for children to play and to park the car safely; a fence, to provide more privacy to the household; security light, so that an elderly woman can safely make her way to her back door at night; and a ramp, to improve access to the house for a man in a wheel-chair.

It is recognised that many of the factors that would improve the wellbeing of the households are outside the scope of the Healthy Housing programme. The comments made by the households are important in order to gain insight into their lives and provide context for the rest of the household journey.

3.3.13 Community impact

While there was widespread agreement that Healthy Housing is having a positive impact on the community, there were very few additional comments that illustrated this impact. Most households were drawing on personal experience, assuming that it has the same impact on other families involved in the programme.

3.3.14 Meaning of home

As a means to understand the household's connection to their home, households were asked what their home means to them. This was the first year the question was asked. The following section illustrates the strong sense of home expressed by households and it is evident that the interventions implemented by the Healthy Housing programme have contributed to this.

Households were quick to share their positive feelings about their homes. The most common concept mentioned was the house being a place of family gathering both in the immediate and extended sense. Culturally specific notions of family were also mentioned, particularly the concept of 'aiga' which is the term used for the whole family (immediate and extended).

> A sense of belonging, where all my family can come home. No matter where the kids go, at least they all know where home is.
>
> It's a roof over our heads… can have my moko's over when I want them.

Related to this, was the idea that the home was a reflection of the life of the people in the household:

> It has been her family home for 17 years now and all of her children have been raised here. It means comfort, warmth and shelter to her and the family. There is no place like home.

Another common comment was around being proud of their house. Many of the households spoke about enjoying looking after their home and simply "loving my home". For one household, a bigger home meant more freedom. Other households mentioned their house representing warmth, comfort and safety. Some households were confident that even though they didn't own the home, they considered it to be their home and took ownership of it. Some other comments about the home were around having personal space and a place to belong. Households also mentioned the convenience of the home to local amenities such as shops and public transport.

Some of the key concepts of home that were discussed by households included:

- Family/ children
- House proud
- Safety
- Freedom
- Reflection of life
- Comfort
- Convenient
- Ownership
- Personal space
- Belonging

3.4 Household perceptions of obstacles to success

While the majority of comments made by households are positive, a number of obstacles have been identified that hinder the success of the Healthy Housing programme. Many of the issues are not directly related to the Healthy Housing programme, and some of the issues, such as maintenance are out of the scope of the programme.

3.4.1 Maintenance

Comments that were made about the maintenance of the home were around general wear and tear, things they would like to have (such as a garage), and in some cases households mentioned they have contacted Housing New Zealand about certain requests but have not received any response. It is important to note that once the Healthy Housing programme intervention is complete, the responsibility for the maintenance of the home shifts to the maintenance team of Housing New Zealand.

> Hallway is still leaking from last visit, damaging the carpet causing mould. Cracks are becoming visible in the walls (lounge, hallway and kitchen) and ceiling. Have contacted Housing New Zealand about fixing the problems, but nothing has yet to be done.
>
> She thinks that having a garage would improve the wellbeing and safety of her family. She has young grandchildren living with her. Their house is situated along a main road that is very busy. Having a garage would give the children a safer place to play in and away from the traffic. It would also be a place to keep the car. They have one car that they rely on and she is constantly worried that out in the open someone is able to steal the car leaving them with nothing. The

garage can also help to dry the clothes during winter since they do not have a dryer.

The fence has collapsed and she has requested Housing New Zealand to do something for almost 10 years and nothing has been done. Also there is a fence which divides her front yard, which she finds very inconvenient and unnecessary, as when she is trying to clean the yard and the garden weeds and grass get caught in this fence, and make it difficult to clean.

These comments provide further insight into the householder's lives and context for the household journey as a whole.

3.4.2 Mould

Housing New Zealand asks tenants to look after the day-to-day running of the house which includes cleaning mould. In the third year of the evaluation, a question about mould was asked for the first time. Interviewers asked the households whether there was any mould present in their home in some cases, households physically showed the mould to the interviewer.

The mould categories used in the interviews were based on the categories from the New Zealand 2005 House Condition Survey (Clark, Jones, & Page, 2005). The categories are as follows:

- Extensive blackened areas
- Large patches of mould
- Moderate patches of mould
- Specks of mould

The results can be seen in Table 4.

Table 4 Reported cases of mould in households interviewed in 2007[6]

Extent of mould	**Total cases of mould**	**Area in the house**			
		Bathroom	Bedrooms	Lounge	Kitchen
Extensive blackened areas	7	*7*	3	4	0
Large patches of mould	5	*5*	2	1	1
Moderate patches of mould	7	*7*	1	3	1
Specks of mould	7	*7*	6	1	0

Eight households reported no visible mould in their house, while 15 households reported at least one case of mould in their home. Ten households reported having at least one case of mould worse than just specks of mould. These more serious cases of mould made up 73 percent of all cases of mould.

[6] The number of total cases of reported mould does not equal 23 (total number of households interviewed) as some households reported multiple cases of mould.

Of the 15 households, six households reported extensive blackened areas of mould, mostly in bathrooms and bedrooms. Bathrooms were the most likely place for mould to be reported (12 cases) followed by bedrooms (9 cases), these made up 81 percent of all cases of mould.

One household has been so impacted by the presence of mould that one member of the household can no longer sleep in her bedroom.

> She has made a request to Housing New Zealand to do something about the mould in the bedrooms as it has now become unliveable. She now sleeps in the living room because she thinks that the mould in the rooms affects her health. She is now sleeping in the living room because there's too much mould in both bedrooms. She scrubs it and cleans it, but thinks that because it is wallpaper, it has permanently stained the walls.

Households had mixed responses to the mould present in their home. Some described their diligence in ensuring the mould is cleaned regularly, others contact Housing New Zealand about cleaning the mould, and only two households did not seem to be concerned with removing the mould.

3.4.3 Growing families

A number of families mentioned the difficulties in dealing with children who are growing up. In some cases, even though an initial intervention included an increase in space, children are out-growing that space. One of these initial interventions of increasing space, was to alleviate overcrowding.

> The only change is that the kids are getting older and they are arguing and fighting more often.
>
> Privacy issues within her home are becoming more of an issue as the children are getting much older and they need more space.

3.5 Conclusion: household journey

This conclusion to the household journey chapter incorporates the relevant summaries from the first and second year of the outcomes evaluation.

Summary of results from Year One (2005)

The majority of households that were interviewed concluded that their experience with the programme had been a positive and beneficial one for their health and wellbeing. The most common outcomes identified included: increased empowerment; a reduction in illnesses such as asthma; improved comfort of their home; a general sense of social wellbeing and functioning within the household. The latter outcome of enhanced social wellbeing was expressed in many different ways, and often as an indirect (and perhaps unexpected) effect of a particular aspect of the Healthy Housing intervention. Certainly, the strongest connection made between the programme and tenants' health referred to psychological and social dimensions of wellbeing of the household (e.g. stress, happiness, and connection to family). If the tenants had a complaint it is that the grounds need to be comparable with the standard of the house.

In household interviews, the tenants' perception of outcomes often revolved around the tangible changes made to their household, such as additional bedrooms, bathrooms, and structural modifications. Those who were in households where extensive changes had

been made were able to convey a greater number of effects than those who only received minimal housing interventions. Those with the minimum insulation/ventilation intervention often noticed an improvement in the 'comfort' of their home, which had several effects on the household from simple enjoyment of the home to an observed reduction in housing-related illness (particularly asthma and respiratory infections). Tenants for whom Healthy Housing delivered greater structural change (modification, extension or transfer) gave more detailed stories about how the changes in space, communal service areas and specific modifications had created a more suitable living environment for their household composition.

Summary of results from Year Two (2006)

It is clear from the 2006 interviews that the Healthy Housing programme had a positive impact on the households and their general wellbeing. After the Healthy Housing intervention, occupancy numbers (gathered at the interviews) appeared to have stabilised. There was only one situation where serious overcrowding had recurred. Households experienced improvements in health with over half of the households reporting a reduction in the frequency of doctor and hospital contact. A reduction in housing-related conditions, diseases and injuries was noted by many households, participants were happier, more relaxed and had an increased sense of comfort in their homes. The Healthy Housing team continue to provide resources to households about how to maintain a healthy home and healthy lifestyle. Day-to-day functioning was also improved significantly for many households. Members of households could spend more quality time together, had more privacy and enjoyed spending time at home. Many households also reported changes in the area of their children's education and play. Finances continue to be a struggle for many households, but there were a number of cases of improved budgeting and financial stability. Twenty-nine of the 39 households interviewed were very happy with the intervention carried out in their home, and the changes were appropriate to the health and social needs of the household.

There are some areas that limit the sustainability of household interventions. Household's perception of obstacles included general property concerns, and continued financial difficulties. Knowledge in households about the relationship between housing and health is still very minimal, however after the intervention, this relationship is often clearer.

Summary of results from Year Three (2007)

The third year of household interviews has provided further evidence for the themes identified in year one and two of the Outcomes Evaluation. As well as presenting the results of the third year of interviews building on previously identified themes, the results of a number of new questions that were asked of the households have been presented. These questions were mainly about the durability of the interventions and the factors that contribute to a household exhibiting a success case.

Twenty-three households out of a possible thirty-six were interviewed in year three. These households had a number of different interventions in their houses, including six extensions, five modernisations or modifications, four transfers, two part transfers and six households who just received insulation and ventilation. There was an equal distribution of households interviewed across the three suburbs (Wiri, Otara and Mangere). Twelve of the households have the same number of people living there as in 2006, seven have fewer and four have more people living in the house.

Most of the comments from the households were extremely positive, despite the difficult circumstances most of the households are in. Many of the comments made by households throughout interviews were around improved living conditions.

In 2007, new questions were asked about heating usage and the interventions such as ventilation. Most households used heating to keep their house warm, others did not use heating at all, instead they used other means to keep warm such as blankets and hot water bottles. A number of households made the connection between ventilating the house in order for it to be kept dry. Households are mostly using their bathroom fans and range hoods and understand their purpose. There were a few frustrated comments about how these appliances use too much unnecessary power. New kitchens and bathrooms are in good condition and are holding up well in the busy households.

Households are still experiencing better health than before the intervention was introduced and many of them attribute their improved health to the Healthy Housing intervention. Those whose health is getting worse generally suffer from chronic conditions and are receiving increased care from health professionals and other members of the household. There were a number of comments about getting out and exercising and taking part in activities outside of the home in order to maintain a healthy lifestyle.

Households are still talking positively about the way their families function. People have their own space and therefore more privacy. The communal spaces also allow for more people and a more appropriate space for group activities. It was noted by two households, that their children are growing up and need even more space than before, the initial extra space they were given is no longer sufficient for a growing family.

There have been more changes in employment, some moving into work, others moving out of work – mainly due to age or illness. Some households are still experiencing financial strain while others have a few more dollars to spend on luxury items.

Many households are talking openly about their changing eating habits. Small changes towards a healthier diet are having a big impact on the household.

Households' understanding of the relationship between health and the impact of an unhealthy house is variable. Some households talked at length about how the interventions work and how they impact on the household. Others had very limited knowledge about simple interventions such as ventilation strips, range hoods and bathroom fans.

From the interviews, it is clear that the meaning of home for the households is strongly related to the family. Families expressed pride and ownership of the home alongside a recognition that the house did not legally belong to them. This strong sense of home expressed by households demonstrates how the Healthy Housing programme has contributed to an improved living environment creating a stronger sense of self for the household occupants.

Some of the obstacles expressed by households included issues around mould and maintenance. Some households appear to have difficulty negotiating the maintenance process. Households talked about general wear and tear, and problems with the property that they saw as being ignored by Housing New Zealand. It is important to note that the maintenance issues mentioned by the households are outside the scope of the Healthy Housing programme. The responsibility lies with the maintenance team of Housing New Zealand.

In 2007, a question about mould was asked for the first time. Fifteen households reported at least one case of mould in their home, while eight houses had no mould present. Six households stated that they had very bad cases of mould in their homes. There were varying responses to cases of mould in the home. Some households cleaned the mould regularly, others contacted Housing New Zealand to clean the mould, and a number of households did not seem to be actively concerned about removing the mould.

Another obstacle identified was about general family issues where children are growing up and are outgrowing the initial Healthy Housing intervention.

It is clear from evidence gathered that despite some of the obstacles to the success of the programme that housing interventions are still intact and continue to benefit the families in a positive way on a day-to-day basis.

4 Provider journey

4.1 Overview

The third year of the evaluation only interviewed providers closely involved with the implementation of Healthy Housing programme. During March and April 2007 interviews were undertaken with managers involved with Healthy Housing programme from Housing New Zealand, and their Area Project and Solutions Coordinators, as well as members of the Special Programmes Unit and Tenancy Managers. Likewise interviews were held with Healthy Housing programme staff from Counties Manukau and Auckland District Health Boards; specifically the Project Managers, Public Health Nurses and the new Healthy Housing Occupational Therapist.

The interview schedule remained similar to previous years with sections about changes, outcomes and barriers. There was also a question that sought to identify what the key programme factors were from the providers' perspectives (See Appendix C for a copy of the interview schedule).

4.2 Healthy Housing provider perceptions

4.2.1 Healthy Housing provider perceptions of success for participants

The providers were asked to give examples of situations that had resulted in successful outcomes for the families from their perspectives. The first example shows the value of the public health nurse input in a dramatic way.

> I was phoned by a woman I had recently assessed and told how very pleased she was that I had discussed screening with her and referred her for a mammogram as she had gone and was now requiring a mastectomy. She was told by the doctor that if she had left it for another year the prognosis would be very poor. She thanked me for her referral.

A similarly dramatic story was shared of a critically ill man found in a garage who most likely owes his life to the nurse's intervention.

> A middle aged male living with his extended family had developed a chest infection and been put on antibiotics but he was still sleeping in the garage. When I found him he was very sick, I got him to the doctor and he was admitted to hospital. If I hadn't gone into the house that day I think he wouldn't still be here as he was so sick. Whilst he was in hospital Healthy Housing organised a flat for him to come home to. He is really happy and has had no more hospitalisations or illnesses.

Many of the examples shared were about people who were living with disability or chronic disease. Successful outcomes for these households included:

- getting a warm dry environment and thus reducing the incidence of asthma
- getting appropriate aids or modification to support independence in the community; improving safety
- timely (speedy) resolution of problems
- reduced worry about family health
- reducing overcrowding
- assistance with social issues
- referral to support services

- better relationships with their tenancy manager and happier more empowered people.

The following example is about two separate (but linked) stories told from the perspectives of the Area Coordinator and public health nurse about two households involved in Healthy Housing it is a good example of many of the outcomes mentioned above. Firstly, the initial family is shifted into a warm dry home, parental worry is subsequently reduced; health improves; recipients are happy promoters of Healthy Housing and, subsequently, another household and whanau become hopeful and willing participants in the programme.

> A family of six of whom five had asthma lived in a late 1940's duplex that couldn't be insulated. Following the Joint Assessment it was proposed that they be transferred but the region assessed them as low priority. We had to fight for them to be reprioritised. As Area Coordinator I investigated all sorts of options (DVS, carpeting), health provided clinical recommendations, and eventually all the haggling for a better property paid off, not in the way the Area Coordinator had planned but in a better way. They were a really good family, they had heaps of problems and had pulled themselves up and were working so hard. Region was eventually able to offer them a nearby older home on a big section that had been upgraded. They are now the happiest family. The mother has made the house her castle. She looks at least 10 years younger.
>
> The mother from this family that was re-housed was employed as a caregiver for another family that I assessed. Actions speak louder than words and what she had done was she had sung the praises of Healthy Housing so much that the 'about to be assessed' person had called all of their whanau in because everyone was so excited that they were getting a healthy housing assessment. There were seven people coming and going from this place and plus the caregiver, to me that was representative of the excitement that Healthy Housing had generated. That meant that the family that I met with were primed and ready to go. The caregiver also had enormous amounts of energy for promoting and supporting this family and the only reason she can do that was she had moved from being in a permanent state of worry about her family's health to being able to support and encourage another mother and daughter who were living under shocking conditions.

Many vignettes were given of the situations where the providers found people with a disability coping within the community and the multitude of ways their problems were successfully addressed.

> We went into this place for a Healthy Housing assessment visit and the hospital had just discharged this middle aged woman who had an amputation with no facilities in the bathroom and no ramp, she had to try and get down the stairs to her wheel chair by sliding on her backside. She was discharged and told just to wash, not shower. Within a week of us going in there the ramp was put in and I got onto the Occupational Therapist and everything got sorted.
>
> I assessed two Pacific people who have degenerative diseases, both in wheelchairs, they had recently been located in a tiny two bedroom house and they couldn't easily get into the bathroom or their own rooms and they had no room to move in their kitchen. We are now redesigning their kitchen and hallways. As a health professional I identified that this was a degenerative disease and that it was going to get worse. There was equipment in the lounge and they needed somewhere to put it. We were able to bounce ideas off each other in Healthy Housing and say, what can we do for this family? Little things

like re-aligning the ramp in this place, initially it had an L shape that they needed to manoeuvre around. The guy had gone down the ramp twice and fallen out of the wheelchair on to the concrete because he lost control. With the nurse saying, this is not appropriate, so now he has a path straight to the driveway. The caregiver was also included in the discussions. They couldn't even sit in the kitchen for dinner as a family. They will have a better layout for dining room, kitchen and laundry and they can get into their bedroom now without hurting their fingers. They couldn't advocate for themselves, they didn't have the skills. The Ministry of Health had previously provided funds to enlarge the doorway to the bathroom and put in the ramp but not other doors such as the bedroom doors.

Sometimes the things we do are small but significant for example sorting out a shower head so that frail older people don't have to use the potato mashers to adjust the water temperature. We have also arranged for 'nippy catches' on kitchen cupboards to be changed to D handles so that people with arthritis don't have to struggle. It makes all the difference.

A very tall old Pacific gentleman and his wife were living in an immaculate home. He was having difficulty getting into the bath. We were able to provide a level access shower as a result he has had the dignity of independence returned.

Specifically there were examples given that illustrate the benefit of having an occupational therapist as part of the Healthy Housing team and the value her input adds to gaining successful outcomes for people with impairments.

> My health knowledge and expertise was vital for a solution to be found for a young woman to live independently. This young Pacific woman wanted to live independently but had extremely strong extensor spasm of her legs. Just making the usual wheelchair modifications was never going to work in this situation. It is impossible for people without the expertise to understand just how severe the spasm could be. The ramifications of that miscalculating would mean injury and loss of independence. As a result the [living] space has been opened up so she can move freely in the wheelchair. The kitchen has been specifically designed for her needs, the ramp has been realigned and the doors onto the deck have super toughened glass. She is really excited; this is another step of freedom. She is able to do her own laundry and has level access to a specially adapted clothes line and has a really groovy accessible kitchen pantry.

The following two examples about the same situation illustrate the value of the joint assessment and collaborative processes that support successful solutions.

> A difficult situation I experienced where much patience was required was that of a man with significant problems with his mobility. He was adequately housed but the house was not designed for a wheelchair. The house was found to have structural problems, and there were other issues that impacted on the family not being suitable for transfer. Because of the Joint Assessment we were able to provide the background information that influenced the decision to go ahead with extensive modifications of the existing home. Specifically the family needed to stay in the same area as the neighbours were key supporters of the man and his family. The house has been specifically modified and appliances bought to meet his needs for example a side opening oven door to enable him to safely prepare meals for his family.
>
> Recently we worked together for a family where the man had significant disability. One issue was his balance in the wheelchair whilst undertaking tasks like cooking.

> It took a lot of thought and collaboration between me and the architects to come up with the best thing for the man.

There were also examples given where overcrowding was caused by caregivers (and their family) moving in to assist the person with a disability or elderly parent, and the overcrowding was subsequently resolved by the Healthy Housing intervention.

> We visited a woman at her pensioner flat. She had had a significant health change in the last six months. She had gone from marginal renal failure to end stage renal failure and required dialysis three days a week. Because she couldn't cope she had asked her daughter (and grandchild) to come and assist her. So we found three generations in a bed-sit studio. There were also steps up to the house. There was enormous pressure in the family unit because the daughter was also trying to work and look after her daughter and her mother. Knowing her impending needs and using the Occupational Therapist we were able to give the Area Coordinator a report that was used to justify an application for transfer.
>
> Another example was: At the Joint Assessment the household was found to have four adults and four kids. Originally there had just been the elderly couple who had lived there 30-40 years. One of them had a stroke and it had subsequently been organised that their bathroom be modified. The daughter and her family had moved in to be the caregivers. One of the children had also had meningitis. When they were assessed their combined income was found to be over the limit. It took us advocating for them to get a regional override[7]. The daughter had previously tried all sorts of avenues to resolve the situation, she had even been to the MP. They have now had their home extended from three to six bedrooms. It's a success from a health perspective. They are happier. They were long term tenants; the tenancy manager was able to back the solution we provided as they knew the family.
>
> A third example: An elderly couple were living with their adult child and partner along with the dependant grandchildren. They were overcrowded and had illegal structures on the property to accommodate them. As a result of Healthy Housing they have had a two bedroom extension and bathroom added. Subsequently the illegal structures have been removed. It's been a win-win situation. There are no problems now and as their tenancy manager I have a much better relationship with the tenant.

Other situations identified during the joint assessment focussed on safety and the examples illustrate how they were addressed by Healthy Housing.

> For example: Recently I came across a family with three young children; the oldest was 10 and was autistic; the youngest also had behaviour problems. Their home was on a main road that had really fast traffic passing by. The mother always had to watch out for them, she couldn't even close the door of the bathroom when she needed to go there in case one of the children got out the front. … In the short term security locks were installed to keep the children safe and they are being transferred to a safer location away from the busy main road.
>
> Another example: We met a man who was in a wheelchair because of bilateral leg amputations. He had been housed on the ground floor of a three story complex, but there were enormous doors for him to get in and out of. When he got through the doors there was another heavy door and then a lift to go to his room.

[7] Regional override is a process where housing services give authority to provide a solution for a family who are over the income threshold because of special circumstances.

> Reflecting on the access to his unit I asked him how he would get out if there was a fire. He said, 'what I would have to do is go to the balcony and take myself out of my wheelchair and throw myself off the balcony and roll down. There's no other way for me to get out fast enough'. He got re-housed in a modified house. His response indicated to me that he too had recognised the risk and had planned an escape route.
>
> Next I assessed a family living in a small house with a very small kitchen. There were three adults and two children living there permanently plus two other children staying approximately four days a week. The back door opened directly into the kitchen which was used as a thoroughfare. The grandmother told of how when she was cooking one time, two of the children had came running through kitchen and the grandma had shooed them out. As the child ran out her belt had caught in the stove top and she had pulled the stove physically on top of the two children, the pot of boiling water went everywhere and both children were burnt. As a result of the Joint Assessment the solution was to move the family into a larger house.

The nurses identified instances of social and mental health problems that they referred for assistance.

> A middle aged lady with bad arthritis living in a two bedroom home who had become very depressed following the death last year of her mother for whom she had been the long term caregiver. I identified several factors that were impacting on her situation. She had not been keeping her hospital appointments because it was too costly to travel to them. She hadn't been offered counselling to cope with her grief and her pets were taking all her funds and she needed assistance with her financial skills via budgeting.
>
> As a Public Health Nurse I assessed a single mother who had a serious low mood issue. She had a 15 month old baby and a 9 year old. She had recently moved into the area. I liaised with her previous Public Health Nurse, who visited the following day with the medical officer and they shared my concerns and referred her on to the local mental health unit. We also sourced food parcels, curtains, furniture and bedding and have taken her on a trip to orientate her to the new area.

The timeliness of the solutions offered was seen as being very beneficial.

> We are closing the loop well and getting big solutions, it is very efficient. We assessed one small house which was so cold all slept in the kitchen (granny in the chair) as a result of the assessment the solutions team got them a new house transfer within a week.

The providers were aware that Healthy Housing solutions enabled the empowerment of some individuals.

> I had dealings with a Maori solo mother with eight children. The house was extended. They are very impressed and happy with the changes. They now only have a small back yard but a reasonable sized front. The house looks nice. What this programme has done is to empower her; she has been given the opportunity to ask questions …. She has taken ownership of the changes.

There were also stories shared by the Tenancy Managers of the improved relationships they noticed in families as a result of the interventions.

> The tenants like the open homes, they seem to be happier. There used to be friction, they didn't get an option. The kids were fighting and the parents couldn't control them. With the extra room all are more settled, they can do their homework and study which isn't possible if you are a 17 year old sharing with a five year old.
>
> It's fabulous. Life is much easier. There is no queuing or fighting to get into the toilets. All are much happier.

4.2.2 Healthy Housing provider perceptions' of obstacles to success for participants

The obstacles to success for the households noted by the providers reflect the disempowering situations like social and financial hardship many of these families experience. The nurse's note that in some instances the nature of the problems means that some information is more appropriately shared privately with the nurse.

> A lot of our work is about putting people onto the right services, there is a 0800 number to phone but often because of previous experiences they rely on us.
>
> The majority have English as a second language.
>
> We get lots of issues related to budgeting, food parcels, and beds etc.
>
> Nearly every family is experiencing financial problems. Most have health issues some are major problems. Maybe 60 percent have good connections with health services. But for the rest health has the very least priority.
>
> The families need time to get to know us to start to share all their problems, often they wait till the Area Coordinators have gone; this occurs especially when it's about domestic violence and 'private' issues.

The Tenancy Managers reported on problems they noted when either the householders only took pride in the newer areas of the home or there was upset caused because the families realised they had missed out on the intervention. Reasons they may not have had an intervention included the original targeting method of households for the Healthy Housing programme where only known overcrowded houses were targeted, other households initially chose not to participate in the programme and in other cases, some households required a more extensive intervention in comparison with other houses that only required ventilation and insulation.

> If the house has only had a part modernisation done some families only have pride and take care of the new or renovated portion of the house.
>
> I get upset tenants who previously turned Healthy Housing down now coming back and wanting to be reconsidered. But Healthy Housing only focuses on the current action area.
>
> There is friction between the 'haves and have-nots' in areas where Healthy Housing was not offered to all in the community, or they hid the overcrowding from Healthy Housing.

4.2.3 Healthy Housing provider perceptions of outcomes

The providers shared many examples of positive outcomes that have strengthened Healthy Housing and the management systems within which the programme works. They also shared about how the programme continues to meet its objectives and remains true to the programme aims. Likewise they shared how other areas/ services can benefit from the lessons learnt in Healthy Housing.

> The programme has demonstrated positive results including the 'good news' story on the news, meeting objectives, contributing to meeting appropriation. Healthy Housing is adapting and has evolved from the pilot. It is possible to retain core of Healthy Housing but make applicable to new areas.
>
> We are achieving all objectives according to our business plan and are way over performance, especially with regard to design improvements.

The Healthy Housing profile continues to increase both internally within the organisations and publicly.

> Internally Healthy Housing has a higher profile. There are high expectations for continued funding, appropriated funding for this year was lower than desired but enough to do basic Healthy Housing initiatives. It may need a top-up.
>
> Externally the profile is much higher with public exposure like the TV One news article.
>
> The Housing New Zealand profile is much higher publicly. We're promoting CMDHB health data. We had the good news story on the TV One News. There has been lots of interest in recent press releases; there have been articles in the Dominion, the local paper and on Pacific Radio. I'm quoting the evaluation report when speaking with the press "This is what families tell us about difference to their lives; that it's been important and positive for them". One of the families in the TV One New item wanted to thank Healthy Housing on screen.
>
> It's been an opportunity for Housing to promote its good face in a positive way.

Exploring the underlying reasons for the successful household outcomes from the perspective of the providers revealed several common themes. In almost every instance the clinical expertise of the nurse and/or occupational therapist working with the Area Coordinators provided valuable information that enabled the Healthy Housing intervention to be appropriate for the health needs that were identified. They were all also advocates for their households and were not easily dissuaded from solutions they perceived as beneficial. It was also apparent that they were skilled assessors who could get to the underlying issues that were areas of need.

The following quote powerfully reflects the way the essence of the joint assessment is continued and they are able to keep true to Healthy Housing principles.

> We are now seven years into the programme and yet still every family and individual is treated with respect and dignity and assisted to do what they can to empower their own lives and health. It hasn't become routine, it isn't a tick the box project. Every assessment is still based on finding the needs and planning outcomes on an individual basis. I would hate to see it become a regular screening tool.

There are now more and more instances where the lessons learned by the Healthy Housing programme feature in other contexts.

> We note however that little bits of Healthy Housing are being picked up by all sorts of organisations which is resulting in confusion; for example the energy retrofit ECCA in Porirua and in Napier some elements of it have been included in a special initiative. Both know about Healthy Housing and are working with local PHOs and DHBs to identify kids coming back for treatment and have high usage of

> health resources. They target these families and a nurse and member of Housing New Zealand visit. They do a modified version of the Joint Assessment and come up with solutions such as transfers. They have done it off their own volition. It's been interesting to see how they do it. If you want to see change in areas of less demand this shows you can do something.
>
> Since the former Project Manager left[8] we have had two management workshops looking at why Healthy Housing isn't involved in community renewal. Looking at the links between the two programmes and what can be learnt both ways. For example looking at how the Area Coordinators deal with families and the community and seeing what lessons are applicable.

The following quote delightfully signifies the job satisfaction the Occupational Therapist experiences.

> Healthy Housing is wonderful it's like I get to be the extreme make over person!

The Tenancy Managers reflected on successes they noticed about household management and reduction in damage.

> The nurses do stress cleanliness. Its part of the induction programme. Before they move into the new home they [the family] are advised of the standard expected. I'm using the household action plan as part of my supervision of a family following Healthy Housing. Initially their housekeeping wasn't great but since they returned to the house the action plan has been in place they haven't slipped back.
>
> We notice that we aren't having as much damage, we used to get lots as one would expect with so many living in a small area with narrow doorways. Now the narrow door ways are gone. The stock has really been brought up to date. We get lots less damage.

4.2.4 Healthy Housing provider perceptions of obstacles to success

Obstacles to success were identified by the providers and relate to the housing, staffing and funding delays for modifications required by people with a disability.

Problems more specifically focussed on housing including properties not being able to be extended because there were future plans for redevelopment of the area, differences in perspectives between Housing New Zealand groups and competing projects.

> When the property manager has areas blocked off for redevelopment it means that our families can't get extensions or modernizations done on their homes.
>
> We sometimes experience problems when we have properties in areas that have been tagged for redevelopment. But how long does one have to wait till the redevelopment occurs, 5-15 years and meantime the problem is not going away.
>
> There are differences in perspectives between Housing sections, for example when [Acquisitions] don't support solutions we put forward. They say 'we are providing 20 four-bedroom homes so you can transfer your one into one of them'. But for example the family I was involved in had been in that house for 3 generations. Housing had, by previously allowing the family to remain after the parents died, been a party to the family believing it is their home. The family was

[8] The former project manager moved into the programme management role which facilitated this development.

> settled in their home. They [Acquisitions] don't look at the family as a whole. We [Healthy Housing] are about social housing.
>
> It's difficult when we go in and the problems are just maintenance issues. Maintenance can cancel jobs without realising the seriousness of the request. Following on from the joint action plan meeting a request for a repair may be sent to maintenance but it doesn't get attended to. For example in one home they had a huge gap that was causing a draught but the job got cancelled.
>
> When no modifications are needed and its just maintenance issues you know they won't get anything done and that's really disheartening.
>
> In central there are so many things happening along with Healthy Housing for example redevelopment, modernisations, Community Renewal, infill housing. It's all highly political.

Staffing issues were discussed by the nurses; they hoped for social work assistance to relieve some of their workload; they weren't able to do all the planned follow up and they worried about cover if any of them fell sick because it could delay planned assessments.

> It's the social issues we come across, if we had a social worker we could hand things over to her to follow-up. Then we could focus on the health issues. For example I had a man with rheumatoid arthritis, diabetes, high blood pressure and skin problems who has had his gas disconnected for four years so he has no fridge, no hot water and no cooking. It takes time checking with WINZ about all the issues.
>
> The ideal would be for us to do a repeat visit to follow up the households where a severe health issue was identified but we don't have the time. We are too busy with all the planned Joint Assessment meetings, doing the referrals, the data entry and dealing with the social issues, we don't get to know the outcomes. We used to be able to use the Community Health Worker to assist us.
>
> There are only two nurses working full time and one who is 0.6FTE. We are at risk if any of us were to be sick because of the impact that would have on the planned Joint Assessment meetings. May be able to get to swap over from her other role but only if she had nothing planned for that day.

The Occupational Therapist reflected on an obstacle that continues to cause delays to the smooth implementation of the Healthy Housing programme. This problem occurs where people living with a disability are assessed as requiring housing modifications as part of the Healthy Housing intervention. Funding for modifications in these instances may be split between the Ministry of Health and Housing New Zealand. The Ministry of Health criteria for what is able to be funded is based on what is 'essential need' whereas Healthy Housing has a more holistic approach. Currently this sign off by the Ministry of Health and need for duplicated consents is so protracted it impinges on the timely operation of the intervention. These delays have improved since the Occupational Therapist joined the Healthy Housing team but the underlying process regarding Ministry of Health funding still needs to be resolved.

> The part I find monstrous and takes ages is trying to sort out a process for Healthy Housing and Ministry of Health funding to work together. This is a real stumbling block. I have managed to get the agencies working together. Currently there are duplications and hold-ups with consents.
>
> The dilemma is where does need start and stop? If I use the Ministry of Health 'essential need' criteria I would provide only the essential for the current problem. If I take into account the knowledge I have of a client and their medical condition

> and expected deterioration I need to factor in the best options both for now and the future. This gap between 'essential' and 'other' is what I use to determine where we would stop if being funded by Ministry of Health and I make an application for that [essential work]. I then go to Healthy Housing and say this is what I recommend. There is lots of paper work.
>
> Dealing with *access*able[9] is a nightmare, what with all the paper work and queries. For example I did an assessment of an elderly couple who have lived forever in their current home that was part of the Healthy Housing programme. She had mild Alzheimer's and he was slow and unsteady with a bung knee. The daughter is very supportive and visits daily. Mum won't get over the bath and Dad needs a ramp and rails. I came up with a solution where a level access shower would be best for Mum and beneficial for Dad, and the ramp and rails would be good for Dad and beneficial for Mum long term. I got all the quotes, got endorsement from NASC[10] and sent it all off to *access*able only to find after a long wait they couldn't process it because they cant accept an application for more than one person.

The Tenancy Managers reported few obstacles to programme success but did mention they have difficulty understanding some of the terminology used during the Planning Meetings. Despite the evaluation findings last year that 75 percent of the households who were revisited by the evaluation team had not re-crowded there remains an ongoing concern that this will occur.

> The medical terminology used by the Public Health Nurse is 'over my head' I haven't a clue what they are talking about.
>
> I worry that once the house is extended that more family will move in.
>
> What about 10 years down the track when the family composition has changed and a small family unit is occupying an extended home.

4.2.5 Programme sustainability

The programme continues to change and adapt, there is evidence of changes in team structure, process, new areas, neighbourhood units, health data management and the housing interventions.

Both teams have undergone major changes in the last year. The housing team has a full complement of staff and a new project manager. The health team in Counties Manukau has been joined by an experienced Occupational Therapist and currently has a Community Support Worker vacancy. The health team in Auckland has a new clinician and its operational alignment has changed.

> The transition to the new Healthy Housing project manager has been smooth because the processes were in place. It has demonstrated the sustainability of programme.
>
> Our Community Support Worker left at the end of last year and is being replaced in the next few weeks.
>
> Not having a Community Support Worker has proved the value of the role. She can keep going back to the home, can have a longer relationship; till things are sustainable especially with regard to housekeeping, immunisation and checking immunisations are actioned.

[9] *access*able offers services such as Ministry of Health applications for the provision of housing alterations that enhance independent lifestyles.

[10] Needs Assessment and Service Coordinator

> We now have our own Healthy Housing Occupational Therapist
>
> The Healthy Housing Occupational Therapist has been integrated into the team very successfully.
>
> A new Public Health medical specialist has joined our team. He is more than just focussed on the clinical report; he is going to all housing related meetings, giving strategic support and is challenging our thinking.
>
> We've moved from health promotion into the healthy environments team where the focus is protection.

Process changes that have occurred in the last year include changes that impact on the building process, improve relationships, revamp meetings and create new ones; and addressing team workloads. The Special Programmes Unit provided many examples of how they reviewed and revised their processes to improve the efficiency of the interventions they undertook.

> Since last July we now move all tenants out of households we are having work done on. Moving tenants out makes it easier for the contractors and quicker too. As a result we are able to do more interventions in a year.
>
> We also do have a 'whole house' approach; we now do what was previously undertaken by maintenance.
>
> We use a company called COMPAS to get the building consents. They have a close relationship with council and are able to fast track the process. They can do building inspections much quicker than council. Their cost is minimal.

Another way the Special Programmes Unit has improved efficiency is by standardising products used in Healthy Housing interventions with that used by Housing New Zealand where ever possible[11].

> We are now working in more closely with Housing New Zealand for example; we are using standard procurement items e.g. fittings and paint colours. This means we are in-line with standard housing items for future maintenance.

Project Managers from Housing New Zealand reflected on changes they had or were making to the implementation.

> One way we are controlling our expenses is that we are making more referrals to the region for modernisation of kitchens for example if there is no health need.
>
> We are going to go back to areas which were 'pepper potted' early in the programme to address known overcrowding. We will continue with completing the work in Mangere 2007/8 then move back into Otara, Wiri.

All of the sections of Healthy Housing who work with the new Healthy Housing Occupational Therapist saw much value in the role and what she was accomplishing.

> It is fabulous to go along on the visits with the architects when they meet the family and discuss options of what can be done to address the health or disability problems. They have the big picture. But it's the small details that make the big difference for example what way the door swings, the height of the handles and the height of the benches.
>
> We link her up with the architects and have her come along with us to meetings, having her there means they know what to draw up. The Occupational Therapist

[11] Initially products used by Healthy Housing were not governed by procurement standards.

> and the architects work well together, she is a very realistic person and knows we are working to a budget. She likes working with us because we can offer more than is normally offered (Ministry of Health funded alterations). We can focus on what is best for the person. She is brilliant with the kitchen guys; is able to come up with ideas to meet specific needs.
>
> The Occupational Therapist is coming up with innovative approaches to disability problems. She is working in with *access*able to resolve ongoing issues. She has a strong connection with the Special Programmes team. She is specifically focussed on ensuring her assessments and interventions are timely, and efficient. Her expertise is vital.

As always the strengthening and building of relationships both within and externally works positively for the providers.

> The referrals coming in from the Area Coordinators are more streamlined now. We know who is looking after what and mostly we work through two coordinators. This has really helped with coordinating everything needed to move tenants out while we undertake alterations at a house. It's a lot easier. We are working with Area Coordinators all the time; we have a good relationship and can pop around easily to sort things out right away.
>
> We are reaping the benefits of all the work we did establishing ourselves in the new area. Getting community buy-in and connecting with critical agencies really paid off. There has been a big pay off with regard to the GPs.

One strategy used to increase accountability is the revamp of the design meeting and the need for the Area Coordinators to substantiate their suggested solutions. The following quotes illustrate the meeting's worth.

> We have improved the design session we have in preparation for the Friday meeting[12]. We discuss the houses we will present at the Friday meeting and come up with options. We get together as a group and all of the team give their perspectives on the options, a better or equal one may be proposed. This has occurred because the budget is tighter we have to work harder now to put our ideas across. We take photos of the problem areas for example a kitchen or bathroom. The photos help to improve our presentations (and arguments). We have to justify more what we are proposing. Now we get to talk about it.
>
> We get together as a team with the project manager, it has brought us closer together; we share ideas and suggestions to resolve things that don't work.
>
> I started with the team at the end of the last financial year. This year the budget is significantly less and as a result we had to prioritize the work we would do. I initially didn't feel confident in making the decisions on what work to prioritise and needed their expertise. What started as a temporary meeting has become a valuable meeting for all and has continued all year. The team quickly began to filter the cases they presented so they could focus on the cases that required solutions. They come prepared now with supporting photos to argue the case for change. This is not a situation where one can have specific criteria or prescribed decision making matrix, there needs to be the flexibility to assess each case on its merits. What happens is that the Area Coordinators present new alternatives; there is a lot of joint learning. They have a real role in the decision making and it's working really well, even if the process is tougher.

[12] At the Friday meeting Healthy Housing team members from Housing New Zealand and the District Health Boards get together with the Neighbourhood Unit to discuss the recently assessed households.

The providers have also proactively sought ways to improve the housekeeping skills by providing education sessions.

> We have organised an education seminar for families who have been approved for extensions. The topics covered include cleaning, what's going on, rent, home safety, and fire safety. All of us got to give input into the session. We have decided to extend the session next time and include the fire service who has offered to do a demonstration to get the fire safety message over. Most of them really respond. Ten or eleven turned up with family and their kids. We provided a kids corner. We gave them opportunity to ask questions and it helped us to understand things from their perspective which we had just presumed they would know. For example when they get moved their furniture gets put into storage temporarily we get asked for more details they hadn't understood that each house lot was stored separately. Now we know how to inform other tenants in the future. Other things they gained had nothing to do with housing. For example they were interested in the pamphlets and posters on topics like domestic violence and healthy eating.
>
> I endorse the housekeeping seminars. They are building social cohesion, building bonds in the community between the mothers. There is an assumption that neighbours know each other. This isn't so. The seminars build relationships. They get the message across in a fun way.

In an effort to increase the number of homes that are assessed in a week the providers have developed several strategies for undertaking more joint assessments.

> Lately we have been capturing most of the new households for Joint Assessments because of all the preparation work and planning being done by the Area Coordinators.
>
> There are more nurses which means there is more flexibility re the hours we can work together to do the assessments. Now they are more open to late visits. We now have allocated days between us for working with the nurses.
>
> What tires the nursing team are all the referrals for food parcels, budgeting, basics and linkages with WINZ.
>
> We tried to increase the number of Joint Assessments the two Public Health Nurses were doing each day but that put too much pressure on the sole Area Coordinator. Since our Community Support Worker left we have spent a lot of our time doing food parcel collections and drop offs.

Providers shared thoughts about the challenges of working in new areas. In one area, assumptions that previous processes would continue to be successful were not found to be true. In another area the challenge is to remain true to the principles of Healthy Housing whilst meeting the unique needs of the new area.

> Despite all our preparation it has not been as easy to work in the new area. There was an assumption that the process that had worked in the original area would fit but we have encountered greater reluctance. Offering them warm and dry homes is insufficient enticement. There appears to be a greater distrust of state agencies and more hopelessness and despondence. There have also been other initiatives targeting the area like the police and Housing New Zealand 'safe and sound' initiative.
>
> The programme is actively consulting on the extension of the programme into Hutt Valley. The approach there will be different as Hutt Valley is different and they have different ideas. The challenge will be the management of a remote programme. The region down there has differing perspectives. There are greater

> opportunities for inter-sectoral collaboration as they already have an established group that meets monthly including the Health Group, Housing New Zealand, District Health Board, Ministry of Social Development, City Council, Te Puni Kokiri. The challenge is to roll out Healthy Housing in a way that suits them but remains true to Healthy Housing principles and processes.

The interaction with the Tenancy Managers and their inclusion in the planning meetings continues to have positive spin offs with more involvement in Healthy Housing and housekeeping support.

> There is more buy-in in Mangere, the manager attends when she can. The Tenancy Managers are only available for a limited time so, as it is possible to have 25 households to discuss, we stick with discussing the ones that need a solution.
>
> Central Tenancy Managers are more involved now, and will ask if I can consider a family sooner.
>
> Mangere now activate household management plans as they realised there is an issue. Their plan is very separate to the support provided by the Community Support Worker but came out of what we are doing; they wanted to replicate our plan.
>
> Since the Community Support Worker left the Tenancy Managers have been doing the follow-up and supervision of families that have a problem with housekeeping according to their household action plan.

Once again the Project Manager from Counties Manukau DHB has organised an internal research project to record hospitalisation patterns of members of Healthy Housing households. After seven years their health database is being incorporated into the District Health Board system and it signals their acceptance as part of the ongoing District Health Board structure.

> We are currently re-monitoring the NHIs[13] for hospitalisations / long term impacts. We have a student working one day a week doing the time consuming work of data entry. One factor that adds to the complexity is the AKA[14] factor. It will be six months till this data is available.
>
> Currently our internal Healthy Housing health database is being mainstreamed into the main District Health Board computer system. This means that Counties Manukau District Health Board will provide ongoing support for the database. Healthy Housing is no longer considered a pilot project. We have become part of the normal culture of the District Health Board.

The Special Programmes team continue to reflect on what they do and the materials used to identify areas that can be improved further. What happens in bathrooms, kitchens, floor coverings, insulation and heating all get further refinements. They also future proof the properties so that the needs of future tenants with disabilities can be accommodated.

> We have made lots of changes to bathrooms. We put in non slip vinyl and have the floor slightly sloping away from the door to the drain and put a small moulding in the door way to give extra protection from flooding into the rest of the house. In the kitchens we are using new marine grade joinery. It's tougher again than what

[13] The National Health Index (NHI) number is a unique number assigned to all users of New Zealand health services to help identify them when they use health and disability services.

[14] 'Also Known As' (AKA).

we were previously using. The reasons we have added in the new supplier are for contract contestability, its marine grade toughness and its waterproof qualities.

We used to polyurethane all the floors as it was believed that was better for the households with regard to asthma but recent Canadian research has shown that when dust sitting on a polyurethane covered floor is disturbed it rises to a height of 1.8 meters and hangs around for 30 minutes. Carpet has been shown to be the better option. We now have a high quality anti-bacterial carpet option we are using; we have 3 colour versions for the tenants to choose between.

The insulation we put into the ceilings is rated at 2.8 and the New Zealand standard is 2.6. (Less energy wastage so reduce heating requirements)

We realised that the heaters we were installing were not big enough to warm the extensions and we are now putting in a bigger version. Using heat pumps would be an answer to this problem. I had found a heat pump that was 'idiot proof' but it was too expensive. I'm reluctant to install them as they require yearly maintenance which maintenance is not prepared to pay a contractor to do.

We are doing more modifications with an eye to future disability use. For example we now do wall hung vanities which are good for wheelchair dependant people. There are lots in wheelchairs. We can do extensive alterations for a person with a disability and know that even if they later move out the house can always be used afterwards for other tenants.

All new bathroom has the framework in the walls for future rails to be secured onto. We now do level access showers in all bathroom modifications. We also make the doors wider. We do this even if it is not needed for the current household.

4.2.6 Key features about the Healthy Housing programme

In this final year of the evaluation the providers were asked 'what are the key things about the programme that would need to be incorporated if/when the programme starts in a new place'? This question was found to be a useful way to identify vital components of the Healthy Housing model. Analysis of the responses revealed three areas that appear to be integral to the success of the programme; organisational leadership, the team attributes, and the assessment and intervention components of the Healthy Housing model. Also vital is the interconnectedness of these three areas to successfully meet the demands of implementing the programme.

The key organisational leadership factors discussed were the importance of the link between health and housing; the coordination and management of the project; staying true to the project aims; accountability and building /sustaining relationships.

You need good resources; you need to know all the agencies. You need a good relationship with other agencies. You need networking resource files set up.

There is a concern that people see the programme as successful and underestimate the amount of work involved. It's like all people see is ducks swimming on a pond and they don't realise what goes on underneath. Especially the time and effort involved from a project management perspective. The need to have all the pathways/ linkages with other sectors sorted. The complexity gets missed; it looks easy on the outside. But for Healthy Housing to work seamlessly it takes much commitment to partnership and relationships, all know their roles and each others roles. All mesh together. Inter-sector collaboration takes work and dedication at all levels. People think it is easy and as a result do not give it the due time and attention to make it effective.

A key factor is the importance of the partnership and having a close relationship with all involved. As is being able to identify accountable people to plan and deliver the programme.

You need to make sure of the integrity of Healthy Housing such as the site selection criteria and having the Joint Assessment as a fundamental key component.

Providers described the key attributes of personnel involved with Healthy Housing including a strong commitment to a solutions focus and working together. New this year was the perspective that the Occupational Therapist needed to be both experienced in the community health setting and able to work outside the usual Ministry of Health criteria.

Healthy Housing works because both health and housing think outside the square, they don't say something is not their job, or doesn't fit my criteria. All work together to fit the best solution to the problem. They stay away from the silo mentality.

A new site would have to have the staff like those from the Special Programme's Unit who have the attitude of how can I help you here.

Personal commitment and passion equally go beyond programme to make things work from all parties, they bend over backwards, people go out of their way to fix it.

The team all work well together and are able to address problems in a one stop shop approach.

The Occupational Therapist needs to be experienced and able to make the jump from doing just what fits the Ministry of Health 'essential' criteria to looking at what would be best for the family and property as a whole to get the best value for the dollar and best for all long term.

The key components of the Healthy Housing model that providers suggest cannot be compromised include:

- an active collaborative partnership between Housing New Zealand, the District Health Board and the community
- having effective processes for getting new households involved
- using experienced Area Coordinators and Public Health Nurses doing the joint assessment in the home
- using the joint assessment to guide the action plan and drive the solution plans
- the products used in modifications have to be robust and workmanship is also vital.

There is partnership between Housing New Zealand, district health boards and the community

Housing New Zealand needs to have a good system for setting up the appointments, to make sure the client is there and understands Healthy Housing.

We go to the home, having booked appointments to see the family in a situation where you can see everything.

There is need for a community support worker to do follow up to see referrals have been actioned and appointments received, data entry, basic administration like booking appointments, and food parcel collection and distribution.

The nurses need to be experienced Public Health Nurses. Public Health Nurses have the skills that are needed. The linkages into primary and secondary care are essential as are the relationships with other health services.

The regular area meetings with the Public Health Nurses, Area Coordinators and Tenancy Managers is a good model.

The weekly meetings, good communication via emails.

Having updates from Healthy Housing and any issues or concerns visible on the computer screen.

It's important to match the Area Coordinators and Public Health Nurses to the tenants especially because the tenants are more comfortable speaking in their own language.

They have to deal with the ventilation and insulation. The products have to be robust and the quality of the workmanship is vital. It's important to get the right information about the households. The programme is focussed on the health of the people and we improve the asset along the way.

4.3 Conclusion: provider journey

This conclusion to the provider journey chapter incorporates the relevant summaries from the first and second year of the outcomes evaluation.

Summary of results from Year One (2005)

The providers shared many stories that demonstrated successful outcomes from their perspective including explanations of why these successes occurred. The providers firmly believed, and could present evidence to support their view, that the participants in the programme were experiencing a greater sense of wellbeing physically and psychologically, were participating in family, community and social life to a greater degree and housing related illness had reduced.

Evidence of collaboration has emerged at all levels, namely between the Project Managers for housing and health, between Housing New Zealand and the public health nurses, internally within both agencies, and with multiple external agencies. Further, themes supporting the sustainability of the programme include the leadership style and management approach of the Project Managers, the unique partnership perspective of the programme's members along with the attributes of the team members and a very strong strengths-based solution focus. The providers also presented a number of recommendations regarding how changes that started with the programme can be sustained including; strategies to prevent re-crowding, initiatives to improve housekeeping skills, support for life style changes and ways the providers have found to address health issues they identified during their assessments.

Obstacles to the success of the Healthy Housing programme from the providers' perspectives include; the impact on and relationships with Housing New Zealand Neighbourhood Units; 'no shows' by tenants at assessment meetings; the availability of ongoing funding; the risk of recurrence of the original problem; and delays to the process of interventions. The power of the Healthy Housing programme is the opportunity it presents to providers to be flexible in their responses to tenants in need.

Summary of results from Year Two (2006)

The evaluation in 2006 further confirmed the effectiveness of the inter-sectoral and collaborative approach of the Healthy Housing programme. Indeed, the collaboration between Housing New Zealand the district health boards, and a wide range of other

government and non-government agencies was seen as key to the implementation and success of the programme.

Many examples of successful outcomes were presented by providers. One unexpected outcome was that household chose, after a housing modification that delighted them, to become a homeowner. Collaboration remains central to the programme and is fostered by relationship building, networking, sharing of information and expertise. Collaboration between Housing New Zealand and the district health boards has positively impacted on the expected outcomes. There was a high level of communication between the agencies directly involved in Healthy Housing and with key contacts in external agencies.

There is a supportive management environment that champions and leads the programme, and the programme is adaptable and responsive. Executive level support for the programme is evident in all of the organisations involved. The Healthy Housing team continues to have a strong 'solutions focus' in their approach to the programme and its implementation. This approach is extended into a 'strengths based solutions focus' when interacting with the households. Ensuring the tenants' needs are identified and their priorities are heard and addressed which is critical to the sustainability of the effects for the programme.

The providers' perceptions of household obstacles included knowledge deficits, risks of re-crowding, harmful practices such as removing smoke alarm batteries, and intervention solutions that were not sustainable. As in 2005 there were concerns about the regulations related to the application of Income Related Rent and the possibility of 'a large home for life – dependency risk' occurring in large Pacific families. Some issues related to the design, intervention and ongoing maintenance were identified. Contact with the households by the Healthy Housing team immediately after the intervention appears to be evolving into a short term supervisory role.

Summary of results from Year Three (2007)

In conclusion the providers' perceptions of success for households included:

- being aware of improved health and wellbeing such as reductions in the frequency and severity conditions like asthma
- reduced worry
- improved social coping
- improved family cohesion and being more empowered.

Other evidence of success included improvements in safety, reduction in overcrowding and improved independence for people with a disability. There were two examples of life saving significance as a consequence of the joint assessment process. In one instance a woman followed advice and underwent mammography with the identification of treatable breast cancer, and in another instance a critically ill man was found and hospitalised.

The providers' perceptions of obstacles for households focussed more on the people being disempowered and included the reality of how economically deprived many families are. Now that Healthy Housing is more visible as it moves through communities there is some discontent expressed by households who either did not take advantage of, or did not receive a similar interventions to those experienced by other Healthy Housing households.

There continue to be many positive outcomes for the providers. Top of the list for many was the raised profile of Healthy Housing. Other outcomes described by the providers include the importance of programme integrity and sharing the lessons learnt so that other projects can benefit. Reflection on what aided the successes for the household draws attention to the value of clinical expertise and advocating for solutions to alleviate housing

situations. They also shared thoughts about job satisfaction and easing the Tenancy Manager's workload as a consequence of the intervention.

Obstacles identified by the providers focussed on housing solutions due to circumstances out of Healthy Housing control and workforce capacity. One obstacle (related to modifications to address disability) has more potential now to be successfully addressed as a result of the Occupational Therapist being part of the team. She is working with management to find ways to best work within the current funding for disability processes as well as identifying ways to change the funding process acceptable to *assess*able and Healthy Housing.

Over the last year the sustainability of the programme has been demonstrated in many ways. A change in leadership for Housing New Zealand (Project Manager) did not unsettle Healthy Housing. There have been creative approaches used to address budget restrictions such as the revamping of the design meeting so that Area Coordinators had to justify their proposed solution choices. All continue to build and develop successful relationships. There is evidence of internal evaluation such as the current repeat research underway looking at hospitalisation data and updating of the RENTEL study. The Special Programmes Unit reviews and adapts their processes to improve the efficiency of modification implementations as well as future proofing the modifications and changing products and design to improve functionality. Healthy Housing is now considered a mainstream service for Counties Manukau District Health Board and as a result the Healthy Housing nurses' database has been included within the main Counties Manukau Health Alliance IT network.

When asked to reflect on the key features about Healthy Housing that should not be compromised three interconnected components were identified, namely:

- organisational leadership and support,
- programme integrity,
- personnel fit with required attributes.

Overall the providers perceive the programme very positively and there is strong evidence of sustainability.

5 Emerging themes from the Healthy Housing journey

This chapter will summarise all of the emerging themes from both the household and provider perspective. In addition, the crosswalk is reflected on by drawing on the results from the household and provider journey.

5.1 Household perspective

Table 5 summarises the households' perception of success. The table presents a compilation of all the success criteria and reasons for success from years one, two and three of the outcomes evaluation.

Table 5 Summary table of households' perception of success

Success Criteria	**Reasons for success**
Family connectedness	Able to have meals together Increased space Less stress Better communication More privacy Spending more time at home Quieter
Sibling relationships	Reduced sibling rivalry Own bedrooms, or not sharing with several siblings Privacy Own space to play, escape
Educational activities	Space to study Quiet, allocated space to do homework Fewer disruptions Go to school more More enjoyment in learning and going to school
Community connection	Able to host guests Less embarrassed to have people over Enough space to host church, community meetings More people visiting Happy for people to stay Positive neighbourhood connections
Easier day-to-day functioning	Less stress with household relationships Extra rooms/ bathrooms More content with life despite struggles Know where to get help More relaxed Less Busy Received leaflets and brochures about mould prevention, heating.
House proud	Surfaces easier to clean More space/ room so children's mess is not in communal space Want to keep the house looking nice
Reduced injury	Structural modifications such as sharp edges removed from kitchen bench top Own driveway so children less at risk Safer neighbourhood area to play No more stairs
Improved health	Warmer house Fewer allergens Larger space

Increased financial control	Budgeting advice Can save money Know how to budget
Increased comfort in home	Less mould, dampness Carpet Curtains Insulation More space Warmer
Mobility/ function for residents with disability	More space Specific modifications Relieves stress on caregiver
Household connectedness to the house	Involvement in selection of house and decision-making Regular contact about changes being made to house Houses means a great deal to families residing there
Safety	Feel safer in new neighbourhood

Household interviews in 2007 revealed a number of positive and negative factors that impact on sustainability. The key positive factors identified from household interviews include:

- Health
- Contentment
- Family
- Environment
- Understanding of links between health and housing
- Understanding of links between overcrowding and housing

Factors that impact negatively on sustainability include:

- Crowding
- Unhappy and stressed
- Chronic illness
- Level of vulnerability
- Cold and/or wet environment
- Financial constraints

Households who showed continued success appeared to have common reasons for the sustainability of the effects from the Healthy Housing programme intervention. These include:

- Resiliency/ coping/ happiness of participant
- Communication/ socializing
- Family/ whanau/ older children stay home
- Knowledge/ education input
- Finances
- Clean, spacious house
- Safe neighborhood
- Good, fast response from Housing New Zealand

Table 6 Sustainability related to occupancy and health status

	Positive	**Negative**	**Comment**
Occupancy	52 percent (12) had no change in occupant numbers 30 percent (7) had decreased occupant numbers (one death)	18 percent (4) had increased by at least one occupant (most cases are natural increases with the birth of babies)	Fewer houses (18 percent) have had an increase in their occupancy numbers compared with year two (25 percent). More households (82 percent) have sustained or decreased in household numbers than in year two (75 percent).
Health status	78 percent (18) had further improvement or sustained their health status	No reports of negative health outcomes	Other households (22 percent) had deterioration in chronic health problems.

Table 6 provides a summary of data provided by the Area Coordinators who revisit families identified at the joint assessment to be seriously overcrowded. These families were subsequently transferred into a new home or had their home extended. From 2004 until April 2007 the Area Coordinators have visited 172 homes and only found three to have re-crowded[15].

It is clear that the positive self-perceived health status of the household's continues to improve or has been sustained.

[15] The total households found to be overcrowded since July 2004 is 243, In April 2007 71 families were still to have their follow up visit

Table 7 presents the criteria of success for households. For each sustainability item, the evidence source is noted.

Table 7 Criteria of success for households

Sustainability item	Evidence Source		
	Household Narratives	**Healthy Housing Provider Narratives**	**Other**
Want to participate in Healthy Housing programme reduction in declines reduction in 'no shows'		x	
Able to communicate with ease with team members use of team members who speak the language or interpreter line.		x	
Households are included in the decision making	x		
Housing related needs are addressed	x		RENTEL
Health and social needs are addressed	x		
Get access to appropriate support services	x		Ext provider narratives
Improved relationship with Housing New Zealand / Tenancy manager	x	x	
Reduction in hospitalisations			CMDHB data
Improved health	x		
Reduction in incidental visits to GP	x		
Get appropriate recourses and advice	x		
Get support and supervision until know how to manage household	x	x	
Motivated to manage household	x	x	
Property is adequately maintained in timely fashion	x	x	Narrative – tenancy managers
Increase in pride in the home	x		
Awareness of link between overcrowding and health	x		
No re-crowding	x	x	Narrative – tenancy managers
Improved family connectedness and sibling relationships	x	x	
Increased educational activities	x		
Increase in community connection	x		
Reduced injury	x		
Increased financial control	x		Narrative – tenancy managers
Durability of interventions	x	x	Special programmes team
Awareness of keeping house warm and dry	x		
Sense of ownership of the house	x		

5.2 Provider perspective

The providers identified multiple factors that contribute to the ongoing success of the programme. In particular the supporting evidence for improved health and wellbeing in the households included:

- urgent treatment being sought for seriously ill household members
- reduced frequency and severity conditions like asthma
- gain or improved independence
- improved safety
- reduced worry
- reduced crowding
- improved social coping
- empowered household members
- less friction within household members.

Similarly provider reflections revealed areas that they believed were challenges to household wellness including:

- communication difficulties
- being disempowered
- economically deprived
- not being part of the Healthy Housing programme.

As per the previous two years, providers gave evidence of the factors that play a part in successful outcomes. Table 8 presents an overview of the factors that contributed to service gains and programme sustainability in year three.

Table 8 Provider perceptions of successful outcomes

Theme	Contributing factor
Service gains	Raised profile of Healthy Housing Sharing lessons learned Easing of tenancy managers workload Job satisfaction Clinical expertise Advocacy works to alleviating housing situations Organisational leadership and support Programme Integrity Personnel fit with required attributes
Programme sustainability	Leadership changes do not unsettle Healthy Housing Develop creative ways to address budget restrictions yet remain true to need for individualised housing solutions Continue to build successful relationships Internal evaluation specific component of Healthy Housing underway Adapt process to improve efficiency of modification implementation Future proofing modifications Change products and design to improve functionality of modifications

Factors that were perceived by providers as service obstacles related to system management issues and to ways to best work with other organisations:

- limitations on housing solutions due to circumstances out of their control
- workforce capacity
- finding ways to best work within the current funding for disability processes and identify ways to work for the best for both organisations.

5.3 Maintenance review

With a view to establishing the sustainability of the Healthy Housing intervention an initial review of the RENTEL maintenance requests of the 36 households who had indicated in 2006 that they could be re-approached in 2007 was undertaken. This review revealed a problem with oven doors in 11 out of 35 ovens (35 percent). As a result the evaluation team needed to establish if there were any systematic intervention related errors occurring in the houses that had been modified by Healthy Housing. Subsequently a more detailed review of RENTEL maintenance reports for houses was undertaken and maintenance data for 213 houses modified / extended by Healthy Housing that had maintenance requests was provided by Housing New Zealand.

This mini review sought to answer the following questions:

- Was there was a common stove door fault?
- Were there any problems reported with the Carlielle kitchen joinery?
- Were there any problems reported with the Hardiglaze bathrooms?
- Were there any other problems able to be identified that could be attributed to the Healthy Housing intervention?
- Was it possible to verify the Tenancy Managers' observations that there are less reports of damage in Healthy Housing modified households?

The 'household request' data was first coded into broad problem area categories such as electrical, plumbing, joinery and then reclassified into more specific problem descriptions. The most frequently reported problems include ovens (elements, seals, doors), leaking or blocked pipes, weather leaks and security issues of window catches/stays and locks (refer to Table 9). These problems occurred across various brands (for example, ovens) and materials (for example, window catches).

Analysis did not identify a common fault with the oven doors, maintenance reports data show ovens were different makes and models. There were no identifiable reports of problems with the Carlielle kitchen joinery. Similarly there were no identifiable reports of problems with the HardiGlaze bathrooms. In a very small group of houses (2-3) there was a roof leak reported between the modified and old house and in one case a gap in the floor of the new section of a modified home. These are the only identifiable reports of problems that could be attributed to the Healthy Housing intervention.

It was not possible to verify the Tenancy Managers' observations that there are less reports of damage in Healthy Housing modified households from the provided data.

Overall there were 2231 unique requests for maintenance for the 213 households. Common problems are identified in table 9.

Table 9 Household maintenance requests

Problem	Item	Frequency
Electric / Gas n =141 Households	Oven	161
	Lighting	58
	Power point faulty	27
	Short/fuse	23
Plumbing n =174 Households	Fitting leaks	81
	Broken fittings	70
	Leaking pipes	147
	Blockages	94
	Toilet, structural	45
	No hot water	35
	Guttering	35
	Sewage leak	17
Joinery n =144 Households	Hinges and handles	56
	Weather leaks	52
	Interior repair	53
	Stiff doors/windows	39
	Locks/replace keys	69
	Window stays/catches	57
	Replace glass	235

It was not possible to identify the causes of the identified problems. The Special Programmes Unit Manager suggests the plumbing, joinery or electric problems identified during the review were likely to reflect normal wear and tear as could be expected in large/ busy households. It is also possible that in some instances the maintenance may have been required due to damage caused by the household. Likewise it is also possible that in some instances the problem may reflect the standard of workmanship and or the products used.

6 Conclusions and Discussion

This report concludes with an overview of the findings of the Evaluation Crosswalk outcomes; a review of the Pathway to Success diagram and a discussion of the findings.

6.1 Evaluation Crosswalk outcomes

The Evaluation Crosswalk was used to evaluate the Healthy Housing programme outcomes; the main questions used for this purpose were:

- How does the state sector collaboration impact on expected outcomes?
- What contributes to sustainability of the intervention for tenants?
- In what ways have the changes made the house more appropriate?
- How sustainable is the Healthy Housing intervention?

The following section is a brief reflection of the outcomes for these overarching questions.

1. How does the state sector collaboration impact on expected outcomes?

There is strong evidence from the provider interviews that collaboration between the two key partners in Healthy Housing has a positive impact on the outcomes. The inclusion of the Neighbourhood Unit Tenancy Managers in the Joint Planning meetings adds to this collaboration. There are a variety of frequent planned and opportunistic ways the agencies communicate in an effective, open and respectful manner. Once again this year there is good evidence from the stories shared by the providers of the effectiveness of the joint assessment and Joint Planning meetings of the multitude of ways they meet the health and social needs of the occupants. There were no specific recommendations for improvement requested this year by the providers but they did describe the components of the programme that they saw as vital components that should not be compromised.

2. What contributes to sustainability of the intervention for tenants?

Counties Manukau is currently in the process of reviewing hospitalisation usage for Healthy Housing individuals. This information will contribute to the understanding of sustainability of effect; this information will be available later in 2007. Examples shared by the providers graphically illustrate the variety of health and disability problems identified and addressed by the Healthy Housing intervention. This past year has seen the development of group educational seminars for occupants about to move into modified homes, it is not yet clear if these seminars will become established practice. The addition of the Occupational Therapist to the Healthy Housing team has improved the processes and appropriateness of interventions for people with disability. The revamp of the Design Meeting readily demonstrates the critiquing process planned housing solutions are subjected to, to ensure they are the most appropriate within budgetary constraints. The ongoing search for robust products and update of modifications to further reduce the likelihood of damage and future proof the houses are further evidence of the programme team working towards intervention sustainability. With no access to Primary Health service usage data it is impossible to comment on the appropriateness of health interventions but there was much anecdotal evidence given by the providers. The 'Strengths-Based Solutions Focus' continues to be a valued component of Healthy Housing's approach. One area that relates to health in particular is currently going through a process of consultation to improve the timeliness and funding of modifications; namely the limitations encountered by the Ministry of Health funding for 'essential' modifications for disability.

From the household interviews it is clear that there has been a clear improvement in health and self assessed wellbeing. The households in all three years of interviews have commented on the improved health and wellbeing of their household and a reduction in visits to the doctor and have largely attributed this to the Healthy Housing intervention. Households have been given the freedom to live in a more stress-free, spacious environment. The interventions have improved family functioning, given families more privacy and space to play, many households now hold family and church gatherings at their homes. Most of the households were extremely happy with the intervention they received and have seen the direct benefits. It is important to recognise however, that while the intervention was appropriate for the family at the time of assessment, many of the families have continued to grow in number and children are growing up. For a few families it was clear that the family is outgrowing the initial intervention.

3. In what ways have the changes made the house more appropriate?

As mentioned above, the majority of households continue to be very happy with their house and the changes that were made to it. Most cases of overcrowding have been resolved and those that were overcrowded at the time of the joint assessment were happy with how the situation was resolved. Comfort levels in the home have greatly improved and this has been mentioned frequently by households, they express having more space, less noise, warmer and less damp environments to live in. Cleaning the house seems to be easier for households because of new surfaces and improvements, even though there may be more space in the house. There is a clear sense of house pride among the households which has enabled more opportunities to invite friends and family over as well as holding church meetings and other social gatherings. Often, if a family unit moved out of the overcrowded house, they moved in down the road which made life easier for the newly relocated family. Overall, the changes made to houses in the Healthy Housing programme are appropriate and have resolved most of the specific problems experienced by households.

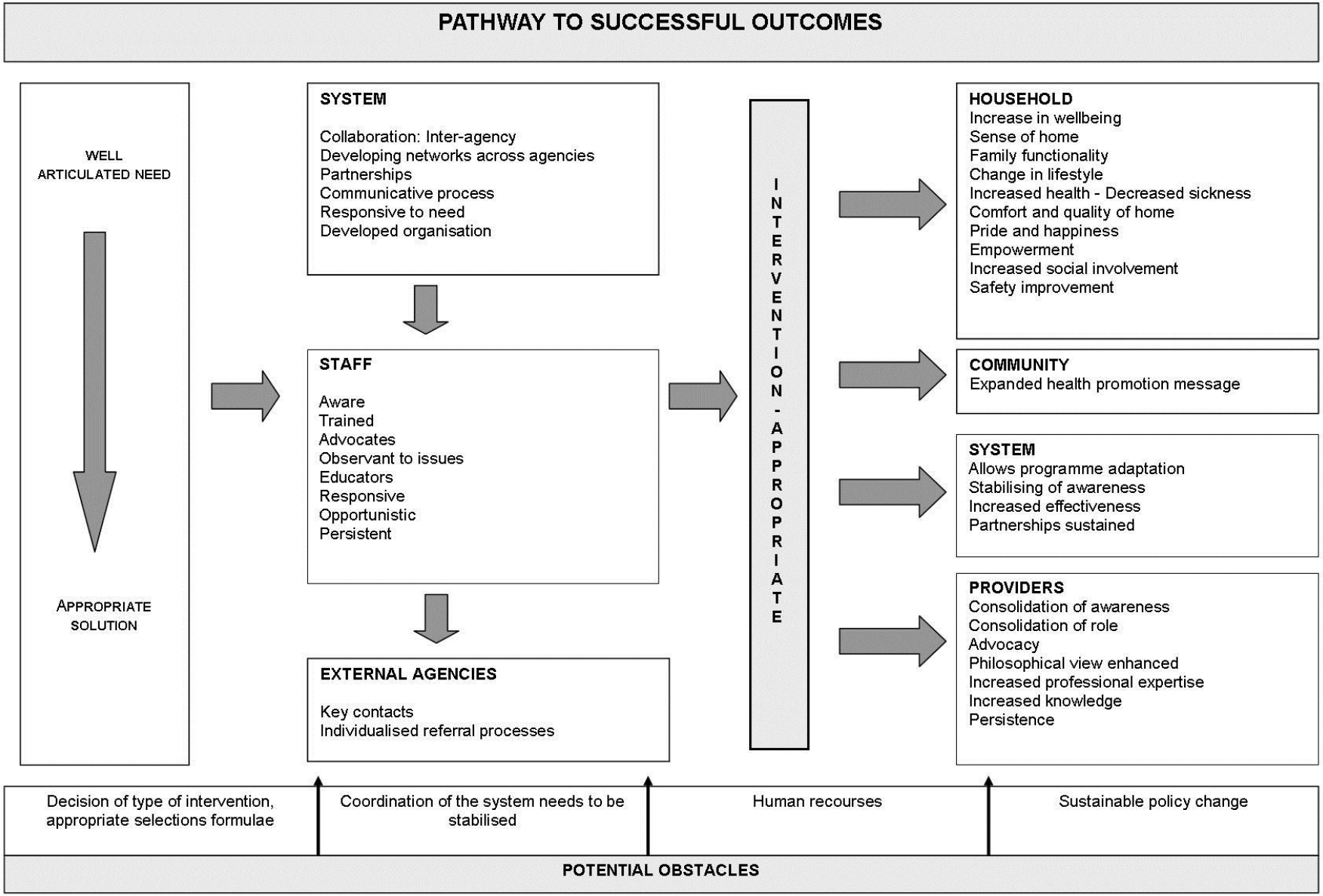
4. How sustainable is the Healthy Housing intervention?

Providers noted a few areas that limit the sustainability of the interventions, mostly related to situations where the householders are disempowered and are economically disadvantaged. RENTEL data provided about maintenance requests and jobs on Healthy Housing properties shows no systematic problems with the products used on modified houses. It is yet to be established if the new education seminars will be a resource that leads to sustained successful household management. No examples were shared this year that revealed unexpected or unintended outcomes of the programme. Examples were given of a how addressing health and social situations have marked effects on independence and wellbeing, it is likely that these factors will be sustained. Households have confirmed that the housing interventions are durable, especially new kitchens and bathrooms.

6.2 Pathway to success

A pathway to success diagram was revised as a result of the third year of the evaluation to reflect the providers' and households' perspectives. Figure 2 illustrates the pathway to success model. The diagram demonstrates similar results to years one and two. It provides further confirmation of the impact of the programme on the heath of the households, their community, the efficiency of the housing system and providers (it is expected this diagram will be revised collaboratively with the Healthy Housing evaluation group).

Figure 2 Pathway to success



6.3 Discussion

The third year of evaluation provides compelling evidence from householders and programme staff of the continuing positive impact of the Healthy Housing programme on housing-related diseases, conditions, and perhaps above all, wellbeing. It has also highlighted areas that have proved to be remarkably resistant to intervention, with outcomes that have been less than optimal. For instance, the ongoing problems that some households experience with mould and cold, reflect less the characteristics of the house itself and more the challenges of the way housing environments are used as well as keeping up-to-date with maintenance.

In previous reports, we have distinguished between the 'health hardware' (i.e. infrastructure such as the plumbing) in a housing environment and the 'health software' (i.e. knowledge of how such infrastructure works and the health implications of its malfunctioning). This distinction supported our assertion that the material dimensions of a house are a necessary but not sufficient determinant of health maintenance or enhancement. In this year's assessment, we see some evidence of the improved health hardware requiring a greater complement of 'software' in the form of understanding the home improvements. By way of example, interviews revealed 'disconnects' between perceived and actual costs of installations such as range hoods and fans and, in anticipation of winter, a desire for more control over electricity usage.

Positive outcomes were also in evidence. The social dimensions of housing were borne out in interview data showing residents who, following renovations, were hosting intermittent social events, the dwelling thus serving as a de facto community centre. We detected considerable pride in housing with residents hinting at their 'ownership' of the dwelling in symbolic even if not in actual terms. This strong sense of home expressed by households demonstrates how the Healthy Housing programme has contributed to an improved living environment, creating a stronger sense of self for the household occupants.

It is believed the households' participation in Healthy Housing has facilitated greater collaboration and increased the probability of their successful participation in and acceptance of other interventions. One novel observation made by interviewers was that householders appeared to express interest in making healthier food choices. We acknowledge that this is not a housing issue per se. However, given the socio-ecological construction of health that underpins the Healthy Housing programme logic, we see this as a positive indicator of better housing circumstances. Given that the priority of adequate and secure housing is accounted for in these households, we can see residents beginning to express agency over other dimensions of everyday health maintenance. While the broader health promotion environment is doubtless in emphasising these imperatives (eg the 'Lets Beat Diabetes' programme in Manukau City), the receptiveness of residents to the experience of Healthy Housing might arguably be granting them a greater receptiveness to other health messages.

A further observation is that as children are getting older, residential space issues are arising despite earlier interventions to enlarge or modify houses. These situations highlight the fact that age and stage of the household can put pressure on the 'people/environment fit'. Even when earlier appropriate interventions have been made the household dynamics (as in any household) exert pressures on space and infrastructure. However, we note the wisdom of an evolving aspect of the Healthy Housing programme: the attempt to future-proof houses through anticipating the changing needs of households (e.g. structural features in bathroom walls to accommodate possible installation of bathroom aids in the future).

Disability has emerged as a common challenge for many households. Houses in some instances are simply ill-equipped to accommodate people with limited mobility or other complex needs (e.g. morbid obesity). Enacting changes to the 'health hardware' is not in itself sufficient. The recent incorporation of the skills of Occupational Therapists into the housing solution is clearly addressing the issues of people with ability more successfully than in the past. In other words, the links to agencies and personnel best equipped to support people in the housing environments is a critical success factor in Healthy Housing programme.

Residents also commented on the importance of the wider residential environment (i.e. beyond the house) to their sense of wellbeing. For example, the comment was made that having a safe and nearby park was valued for the way it contributed to a sense of community. Nevertheless the presence of 'problem' young people in the area eroded this perception.

Maintenance issues continue to be expressed by households. Once the Healthy Housing programme intervention has been completed, the responsibility of maintenance shifts to the maintenance team within Housing New Zealand. The overall success of the programme may be hindered by the problems encountered with the provision of maintenance from the Corporation's maintenance team and this may hinder the sustainability of the effects from the householder's perspective.

Few respondents made explicit reference to the Healthy Housing programme. Its apparent invisibility in the perceptions of some tenants can be seen as a strength of the programme and a maturing of the intervention. It appears that to some, the Healthy Housing programme is simply regarded as what Housing New Zealand does as a responsible landlord. Others, however, appear to have become aware of the programme in their neighbourhood and its benefits have become sought after as a set of opportunities to enhance their daily life.

One sign of the programme's success from an organisational perspective is the fact that representatives of a number of Housing New Zealand regional offices are actively incorporating aspects of the Healthy Housing programme into their programme development. Continued commitment to the programme and its principle of intersectoral collaboration is also evident among programme contributors from district health boards. To some extent, these observations can be seen as evidence of the programme's logic becoming more widely accepted as the gold standard for addressing housing and health issues.

The key to continued presence and success of the programme within the landscape of housing and health in New Zealand is clearly linked to ongoing resourcing as well as institutional will. This third and final evaluation report has provided abundant evidence of significant benefits to householders and providers alike. We see considerable benefit in ongoing opportunities to critically reflect on this unique and innovative programme and its outcomes as it evolves in light of international policy and practice around housing and health.

We believe that the three evaluations provide a unique opportunity to inform policy change around housing, in that the evaluations provide a picture of a householder's journey over a five year period and the impact of Healthy Housing on their lives over that period. Furthermore the evaluations add to a body of knowledge that explains the relationship between housing and health. Finally these evaluations when considered consecutively illustrate the journey that both providers and participants embarked upon. Hence they provide an excellent resource for determining growth and change.

Appendix A: Evaluation methodology

In this section, we outline our approach to the outcomes evaluation, the methodology underpinning the evaluation, and describe the methods used to collect data.

Background

Housing improvement has been identified as a setting for health intervention to reduce housing-related health problems, and for health and social intervention to achieve greater wellbeing and increased social participation (Howden-Chapman & Carroll, 2004). Healthy Housing seeks to achieve outcomes outlined in the programme logic through improvement of the housing stock, better match between household and house, and better integration of housing, health, and social services. The expected outcomes, as defined by Housing New Zealand for the purposes of this evaluation (HNZC, 2004a), are:

- a reduction in the risk of housing related diseases, conditions and injuries
- improvements in self-assessed wellbeing as a result of participation in Healthy Housing.

This evaluation is specifically focussed on housing, although it necessarily and importantly includes health and welfare processes and outcomes. In addition, responsiveness to diversity is a key theme, given the range of cultural backgrounds and composition types of the households participating in Healthy Housing. As the nature of the intervention and number of stakeholders involved in Healthy Housing are complex (within predetermined constraints), so is the nature of the evaluation. Consequently, the methodology for the evaluation is built on a number of foundations.

The objective of the outcomes evaluation component of this overall evaluation is to address the question: "What is the evidence that Healthy Housing has made a difference to the risk and rate of housing related diseases, conditions, and injuries, and improved wellbeing and comfort, family functioning, and increased social participation?" (HNZC, 2004b). While additions and refinements were made in year three to account for the need to follow the providers' and participants' journey, the third year of the evaluation applies the same principles and philosophies as for years one and two.

The three foundations on which the evaluation is built are: the match between the philosophy and culture of the programme; the use of success case methodology; and the use of the Evaluation Crosswalk.

Match between the philosophy and culture of the programme

Healthy Housing uses a strengths-based solutions focus approach (De Shazer, 1985; Saleeby, 1997). The characteristics of this approach feature starting with household situations as they are, using storytelling to work out what interventions are appropriate, working collaboratively to access resources, empowering families to take as much responsibility as possible, and working out what success looks like and working towards this. This means that the evaluation approach is collaborative. The evaluation questions, selection criteria for households to be studied in-depth, and the appropriate data collection methods have been developed collaboratively with providers.

Use of success case methodology

The evaluation makes use of an adapted form of success case methodology (Brinkerhoff, 2003), an innovative and prudent approach to evaluation that combines storytelling with contemporary evaluation approaches used in traditional case study methodology. Success case methodology is a relatively quick but powerful method to ascertain and understand what is working and what is not. There are two major phases in success case methodology: locating likely success cases and then determining and documenting these successes. The success case methodology has four basic components: developing a model of success; using that model to develop a survey to identify success; conducting in-depth studies of the identified success cases; and reporting and analysing all the findings (Brinkerhoff, 2003).

A model of success for determining 'what success would look like' for Healthy Housing is derived from existing documentation and literature. Several reports relating to Healthy Housing and existing research literature have been synthesised, and a 'programme logic' developed by the Healthy Housing providers (see p12) has provided guidance for the intervention and outcomes (HNZC, 2004b). As detailed in the original request for proposal, 30 households were selected on criteria that encompass various types of intervention, as well as on the perception of success based on input from case workers and other providers. The success cases have been identified by the providers using available database information and other reported information, by the time in the Healthy Housing programme, and the 'programme logic'. All selected providers and a number of evaluation teams have been actively involved in the selection of the households. Subsequently, households from Mangere have been added to increase the feasibility of analysis across suburbs and time. In addition, several households were added to account for attrition from the first year sample.

Use of the Evaluation Crosswalk

Due to the complexity and collaborative nature of this evaluation, it is important to use a tool to illustrate clearly the structure of the evaluation, the nature of the evaluation questions, and the method for securing evidence relating to the questions. Thus the evaluation structure is presented as an 'Evaluation Crosswalk' (O'Sullivan, 1997). This crosswalk indicates proposed data sources for addressing each evaluation question. Evaluation questions were developed directly from the programme logic and multiple data sources will be used to triangulate the data gathering.

Changes to evaluation in year three

The Evaluation Crosswalk questions were refined in a collaborative manner to clarify further the findings from year two and to address new areas of interest. Following are the new questions.

- How have overcrowding issues been resolved?
- How durable are the interventions?
- What are the factors that contribute to a household exhibiting a success case or a non success case?

(See Appendix D for a presentation of the crosswalk questions for each year of the outcomes evaluation, the new questions for year three identified above are also indicated in the table).

For the third year of interviews the questionnaires were modified in line with the changes made to the Evaluation Crosswalk. As in year two, a simplified version of the questionnaire was used for households who received just insulation and ventilation as their Healthy Housing intervention. Of the 23 household interviews that were conducted, there were only 5 households who were interviewed using the simplified questionnaire. The questionnaires used in the final year of interviews can be seen in Appendix B.

Methods of data collection

The methods used to obtain information from the households and Healthy Housing providers need to be robust and culturally appropriate. The success case methodology allows for an in-depth approach to the collection of the households stories, and is considered to be the best way in which to evaluate both short and intermediate term outcomes and their relationship to outputs by employing data from multiple cases (McKenzie, Searle, & Park). Data from the outcomes evaluation can be used to identify possible mechanisms for both positive and negative impacts, as well as to inform changes to the intervention (Thomson, Petticrew, & Douglas, 2003). As previously suggested, the evaluation methodology and method is the same as in years one and two. The following section outlines the tasks undertaken.

Household interviews

Thirty-six of the households interviewed in 2006 from Otara, Wiri and Mangere consented to another interview in 2007. Of the thirty-six households, 23 were successfully contacted and interviewed.

While households have not been selected by their ethnicity, most of the households who have been interviewed for the evaluation are Pacific peoples, in 2007 there was one Maori household interviewed

The households interviewed have had varying degrees of housing intervention(s) carried out by Healthy Housing (see Table 12).

Table 10 Intervention type by suburb 2007

	Wiri	Otara	Mangere
Extension	3	2	1
Part Household Transfer	1	1	
Household Transfer	2	1	1
Generic Modernisation	1	1	2
Specific Modification			1
Insulation/ventilation only	1	2	3

In 2007, eight interviewers were trained for the Healthy Housing household interviewer role. Four of these interviewers had previously interviewed households in 2006, in these cases where possible, they re-visited the same households. They were recruited for their ability to communicate in and their awareness of Samoan, Tongan, and Maori cultures. As much as possible, interviewers were matched by ethnicity to households; where that was not possible, an interpreting service was utilised.

Interview staff from the evaluation team made contact with the households by phone to make an appointment for the third and final round of interviews. The interview did not proceed until written consent was obtained, and this included an extra option to consent to tape-recording of the interview for later transcription.

The semi-structured interviews of 45 minutes to 1 hour were carried out with participating households, using trained interviewers selected for their experience and cultural knowledge to develop relationships with differing ethnicities. These interviews reveal both live experience and empirical information that has been compared and contrasted between the case studies (Bernard, 2002). The interviewers' observations of housekeeping, house usage, and responses to the interventions were also reported, and these set the context for the subsequent analysis of interview data. A semi-structured interview process ensured key questions were addressed in the discussion, while allowing for reflection and elaboration by household members. These captured a range of participant experiences, expectations, values, and behaviours in a meaningful and appropriate way, while allowing for unforeseen issues and themes to be included. It also means that the data collected is at once comparable (through the use of common themes and questions), but also fluid enough to capture unique experiences.

Provider interviews

Semi-structured interviews were undertaken in the offices of Healthy Housing service providers. The interview schedule (see Appendix C) included questions to identify changes in the last year, collaboration, obstacles, success stories, and outcomes.

In this the third and final year of the evaluation, the views of Healthy Housing providers and Tenancy Managers were sought to better understand the adaptability, impact, and sustainability of the Healthy Housing programme. Most of the providers who had been interviewed in 2005 and 2006 were re-interviewed. New interviewees were the new appointees specifically the Housing New Zealand Project Manager, Occupational Therapist, and Public Health Nurse. The list of interviewees was:

- public health nurses from Counties Manukau and Auckland DHBs
- the area coordinators, solutions coordinator and project coordinator
- the occupational therapist
- the three project managers from Housing New Zealand, Auckland and Counties Manukau DHBs
- Housing New Zealand's contract manager, staff from Special Programmes unit and architects
- The tenancy managers from the local neighbourhood unit.

Semi-structured interviews were undertaken with 17 providers from the above positions in 7 face-to-face or small group interviews. All interviews were written up in their entirety using notes taken during the interviews, audiotapes, and further phone contacts to verify any points that needed clarification. Responses were coded using NVIVO.7, initially grouping by interview question and then coding emerging themes.

Analysis

The household interviews allowed findings to emerge through common and significant themes identified from interview data (Thomas, 2003). Analysis was led both by research questions and by additional themes that arose in the interview content.

Themes identified in years one and two were further explored in year three as well as exploring new questions identified earlier.

The provider interview data has been analysed using the general inductive method, with the aid of NVIVO software for qualitative data analysis (QSR International, 1999-2002).

Key themes have been summarised, and stories from the providers captured to retain the depth of meaning for the interviewee. The results of this part of the analysis are presented in chapter four of this report.

Reporting process

Initial analyses of the year three outcomes will be presented to Healthy Housing management and invited policy and planning personnel at a workshop. The resulting discussion about the findings will be used to guide the development of the report.

Ethical considerations

When conducting any kind of research, especially research involving human participants, it is crucial to ensure that the research project is carried out in such a way as to ensure the safety and wellbeing of all of those involved, and to ensure participants can give freely derived informed consent. Ethical approval for this study has been granted by the Northern X Regional Ethics Committee.

Appendix B: Household Interview Schedules 2007

High Level Intervention Household Interview	Low Level Intervention Household Interview
Background Information 1. Can you describe what changes the HHP made to your home? 2. Are you in paid work at the moment? What does that involve? Are there other unpaid, voluntary activities that occupy you? 3. Who currently lives in the house? 4. What gender/age are they? 5. What do they do? 6. How are they related to you? **HH Intervention** 1. Have any changes occurred since our last visit in the middle of last year? (Prompts: privacy, play, safety, education, community, church) **House management** 1. Have there been any changes in who has the main responsibility for looking after the house? Describe why. 2. What are the things that this person has to do? **Health Management** 1. What recent health problems have affected the people living here? 2. Can you describe/tell me about it? 3. Who requires the most care in the household? Why? 4. How has the HHP affected the situation with this person? Can you describe any changes? **Healthcare** 1. Have you seen people in healthcare more or less in the last year? Can you describe the change in the use of health services? 2. What sort of health care people? How often? (daily, weekly, yearly?) 3. Have you noticed whether changes to the house have affected the number of accidents or injuries to people around the house? Can you describe/give examples? (Prompts: falls, burns, slippery inside & out, involvement of vehicles, child safety in general). **Whanau/family wellbeing** 1. Have you noticed changes in the health of the people living here in the	**Background Information** 1. Can you describe what changes the HHP made to your home? 2. Are you in paid work at the moment? What does that involve? Are there other unpaid, voluntary activities that occupy you? 3. Who currently lives in the house? 4. What gender/age are they? 5. What do they do? 6. How are they related to you? **HH Intervention** 1. Have any changes occurred since our last visit in the middle of last year? (Prompts: privacy, play, safety, education, community, church) **House management** 1. Have there been any changes in who has the main responsibility for looking after the house? Describe why. 2. What are the things that this person has to do? **Health Management** 1. What recent health problems have affected the people living here? 2. Can you describe/tell me about it? **Whanau/family wellbeing** (since Healthy Housing) 1. Have you noticed changes in the health of the people living here in the last year? If so, describe. 2. Do you think these health changes are connected to specific alterations in the home? (Prompts: temperature, dampness, space etc) **Healthcare** 1. Have you seen people in healthcare more or less in the last year? Can you describe the change in the use of health services? 2. What sort of health care people? How often? (daily, weekly, yearly?) **Household Economy** 1. Has the HHP led to any ongoing changes in your household financial situation? Describe. (Prompts: rent, electricity, running the household)

High Level Intervention Household Interview	Low Level Intervention Household Interview
last year? If so, describe. 2. Do you think these health changes are connected to specific alterations in the home? (Prompts: temperature, dampness, space etc) 3. Have you noticed changes in the way the family functions/gets along in the last year? 4. Can you describe /give examples of how the household used to function? 5. Have there been any changes in relationships between household members? Describe, give examples. 6. Has there been any change in interaction with the wider whanau/community? Describe. (Prompts: changes in visiting patterns by others, school, preschool attendance, and hosting meetings for groups e.g. church) 7. In the last year has the HHP led to any changes in the household relating to: -Employment. Describe any changes -Food Management/ preparation/ choice. Describe any changes. (Prompts: ease and place of preparation) -Transport. Describe any changes. (Prompts: distances to work or school, changes in cost, use/accessibility of public transport) -Recreation/Play. Describe for children and adults. (Prompts: where it takes place, who with, type of activity) **Locality/ Neighbourhood** (if household move involved) 1. Are members of the household happy with the change in locality/neighbourhood? Describe why. How do the neighbourhoods differ? 2. Have visiting patterns changed since the HH intervention? 3. Has there been any change in the social life of the household in the last year (visiting friends, involvement in sports, cultural events). Describe. **Household Economy** 1. Has the HHP led to any ongoing changes in your household financial situation? Describe. (Prompts: rent, electricity, running the household) **Social, Educational and Cultural Outcomes**	**Other** 1. Has the HHP led to any other changes in the household? Describe. 2. What information, skills and resources help you maintain your house (e.g. have you been given any information/ education sessions about heating, mould, ventilation etc.)? 3. What other things could improve the health and wellbeing of you and your family? (Prompts: parenting skills, access to a car, health worker explaining health problem) **Sustainability** 1. How do you keep your house warm and dry? (Prompt: heating usage?)Explain. 2. What changes were made to your house? (Tick box) - window strips - bathroom fan - kitchen range hood 3. Tell me how each of them work. 4. Do you use them? 5. Have there been any problems with any of them? 6. Is there any mould in your house? (Tick box) Where is the mould? - extensive blackened areas - large patches of mould - moderate patches of mould - specks of mould - no visible mould **Final questions** 1. What does your home mean to you? 2. Do you think the Healthy Housing Programme has made a difference in your community? Explain.

High Level Intervention Household Interview	Low Level Intervention Household Interview
1. How have the changes to the house affected the way the household lives together? Can you describe the changes in the social interaction of the household? 2. Has communal living space changed (living room, kitchen etc)? 3. Has there been any ongoing changes in the time that people spend at home Yes/no. Can you describe how the change affects the household? 4. Has there been any change in educational activities of the household in the last year? (children in school, job training courses) 5. What extra space/ rooms did you get in your house? How have you used this extra space? **Other** 1. Has the HHP led to any other changes in the household? Describe. 2. What information, skills and resources help you maintain your house (e.g. have you been given any information/ education sessions about heating, mould, ventilation etc.)? 3. What other things could improve the health and wellbeing of you and your family? (Prompts: parenting skills, access to a car, health worker explaining health problem) **Sustainability** 1. How do you keep your house warm and dry? (Prompt: heating usage?) Explain. 2. What changes were made to your house? (Tick box) - window strips - bathroom fan - kitchen range hood 3. Tell me how each of them work. 4. Do you use them? 5. Have there been any problems with any of them? 6. What other changes were made to your house? (Tick box) - new (Carlyle) kitchen - new (hardy-glaze) bathroom 7. What condition are they in? 8. Have there been any problems with them? When did these problems occur? Explain. 9. Is there any mould in your house? (Tick box) Where is the mould?	

High Level Intervention Household Interview	Low Level Intervention Household Interview
- extensive blackened areas - large patches of mould - moderate patches of mould - specks of mould - no visible mould **Final questions** 1. What does your home mean to you? 2. Do you think the Healthy Housing Programme has made a difference in your community? Explain.	

Appendix C: Provider Interview Schedule 2007

Healthy Housing: Provider Interviews – Year Three

What changes in the last year?

Has there been any change in the way you tell people about Healthy Housing? Explain

Could you describe the ongoing / new impact that the Healthy Housing has had on your service?

Could you provide an example of collaboration?

Can you describe any barriers?

Could you describe your perception of the current outcomes for the Healthy Housing?

What are your service gains?

How could links be improved?

What are the key things that need to be considered for programme roll out?

Appendix D: Comparison of year one, year two and year three Evaluation Crosswalk questions

Year One Evaluation Cross walk Questions	Year Two Evaluation Cross walk Questions	Year Three Evaluation Cross walk Questions	
How does the state sector collaboration and efficiency impact on expected outcomes? What was the level of communication between agencies involved in Healthy Housing programme? What was the nature of the communication between various service providers and with their clients in considering decisions about house allocation? How do the various parties regard their experience as participants in Healthy Housing intervention; particularly the fairness and transparency of decision making? Has there been effective and efficient collaboration between the joint agencies to assess and meet the social and health needs of the occupants? How effectively did Housing New Zealand engage with the household?	**How does the state sector collaboration and efficiency impact on expected outcomes?** What was the level of communication between agencies involved in Healthy Housing programme? What connections with other agencies? What was the nature of the communication between various service providers and with their clients in considering decisions about house allocation? How do the various parties regard their experience as participants in Healthy Housing intervention; particularly the fairness and transparency of decision making? Has there been effective and efficient collaboration between the joint agencies to assess and meet the social and health needs of the households? How effectively did Housing New Zealand engage with the household? What contributes to sustainability of the intervention for households? What improvements/changes in your collaboration/interactions with Healthy Housing would you like to see happen?	**How does the state sector collaboration impact on expected outcomes?** What was the level of communication between agencies involved in HH programme? Has there been effective and efficient collaboration between the joint agencies to assess and meet the social and health needs of the occupants? How effectively did the Corporation engage with the tenant? What improvements/changes in your collaboration/interactions with Healthy Housing would you like to see happen?	
What variables facilitated expected improvements in health and wellbeing of households? What is the reduction in the risk of housing-related health conditions, diseases and injuries? Is there an increase in the knowledge and behaviours that will minimise housing-related illness? Is there improved health for present Housing New Zealand households? What are the improvements in self assessed wellbeing?	**Which variables facilitated expected improvements in the health and wellbeing of households?** What is the reduction in the risk of housing-related health conditions, diseases and injuries? What increases are there in the knowledge and behaviours that will minimise housing-related illness? What is the extent of health improvements for the households? What is the extent of improvements in self assessed	**What contributes to sustainability of the intervention for tenants?** What is the reduction in the risk of housing-related health conditions, diseases and injuries? What increases are there in the knowledge and behaviours that will minimize housing-related illness? What is the extent of health improvements for the tenants? What is the extent of improvements in self assessed wellbeing?	

Does the household have, or have access to the knowledge, skills and resources to maintain a healthy living environment in the house? What is left behind that helps households to maintain the environment? How have the interventions influenced household functioning in regard to: privacy needs/ play, safety of small children /participation in community groups/ school attendance, homework, and interaction with their social network? How have the interventions affected household participation in community and society such as: Neighbourhood/ ethnic, religious/ school, community, sports groups /employment and education? How accurate are the Joint Assessments? How appropriate were the housing intervention(s)? How appropriate were the health/social intervention(s)?	wellbeing? Does the household have, or have access to the knowledge, skills and resources to maintain a healthy living environment in the house? How have the interventions influenced household functioning in regard to: privacy/ play/ safety of small children/ participation in community groups/ school attendance/ homework/ interaction with their social / cultural network? How have the interventions affected household participation in community and society such as: neighbourhood/ ethnic/ religious/ school/ community/ school groups/ employment/ education? How appropriate were the housing intervention(s)? How appropriate were the health/social intervention(s)? How does the 'strengths-based solutions focus' philosophy contribute to the health and wellbeing of households? How can housing interventions be improved/changed to increase the health and wellbeing of households? How can health/social interventions be improved/ changed to increase the health and wellbeing of households?	How has access to the knowledge, skills and resources impacted on the family? In what ways have the interventions influenced household functioning in regard to: privacy/play/safety of small children/participation in community groups/school attendance/homework/interaction with their social/cultural network? How appropriate were the housing intervention(s)? How appropriate were the health/social intervention(s)? How does the 'strengths-based solutions focus' philosophy contribute to the health and wellbeing of households? How can health/social interventions be improved/changed to increase the health and wellbeing of households?	

Which variables facilitated: An expected reduction of unmet housing needs? An improvement quality of housing? A reduction inequality of housing? What changes have been made in housing stock? Are the changes made to housing stock appropriate for the needs of the household (ie, according to financial, generational, social and cultural needs) within the constraints of Housing New Zealand's specifications? What interventions occurred? How satisfied was the household with these interventions? Is the changed physical makeup of the house and grounds appropriate for the house composition? What is the meaning of this home (house and grounds) to the householders in the context of their past experiences, current and anticipated future needs? What are the levels of comfort in the house such as temperature, noise, space, air quality (presence of dust, mould, provision for air movement)? Have overcrowding issues been resolved in a way that is acceptable to the householders? Has housework altered significantly since the intervention (consider change in crowding, cleanliness of new additions, increase in space, house pride)? Has there been a change in rent/arrears/ability to pay rent/damage to home since the intervention? How successful is the allocation of Housing New Zealand's housing to applicants on basis of need? Has there been effective use of Housing New Zealand's housing stock?	**Which variables facilitated: an expected reduction of unmet housing need/an improvement in the quality of housing?** Are the changes made to housing stock appropriate for the needs of the household (i.e. according to financial, generational, social and cultural needs) within the constraints of Housing New Zealand's specifications? What housing interventions occurred? How satisfied was the household with these interventions? Is the changed physical makeup of the house and grounds appropriate for the house composition? What is the meaning of this home (house and grounds) to the householders in the context of their past experiences, current and anticipated future needs? What are the levels of comfort in the house such as temperature, noise, space, air quality (presence of dust, mould, provision for air movement)? Have overcrowding issues been resolved in a way that is acceptable to the householders? Has housework altered significantly since the intervention (consider change in crowding, cleanliness of new additions, increase in space, house pride)? What are the resources that will support the providers in sustaining positive results for households? Has there been a change in rent/arrears/ability to pay rent/damage to home since the intervention? Has there been effective use of Housing New Zealand's housing stock? How do housing interventions contribute to improvements in the quality of housing?	**In what ways have the changes made the house more appropriate?** How satisfied was the household with the interventions? How is the changed physical makeup of the house and grounds appropriate for the house composition? What is the meaning of this home (house and grounds) to the householders in the context of their past experiences, current and anticipated future needs? How have the levels of comfort in the house such as temperature, noise, space, air quality (presence of dust, mould, provision for air movement) improved? Have overcrowding issues been resolved in a way that is acceptable to the householders? How have overcrowding issues been resolved? How has housework altered since the intervention (consider change in crowding, cleanliness of new additions, increase in space, house pride)?	NEW

How sustainable is the Healthy Housing programme? Does the intervention comply with Social Assessment System? What are the limitations on sustaining the results of the interventions? What are the resources that will support the household in sustaining positive results? What were the unexpected and unintended outcomes and consequences?	**How sustainable is the Healthy Housing intervention?** Does the intervention comply with Social Allocation System? What are the housing limitations on sustaining the results of the interventions? What are the resources that will support the household in sustaining positive results? What were the unexpected and unintended outcomes and consequences? What effect does the programme have on the community? What are the health/social issues that are limitations on sustaining the results of the intervention? How does access to health and social services contribute to sustaining the effects of Healthy Housing intervention?	**How sustainable is the Healthy Housing intervention?** What are the limitations on sustaining the results of the interventions? How durable are the interventions? What are the resources that will support the household in sustaining positive results? What were the unexpected and unintended outcomes and consequences? How does access to health and social services contribute to sustaining the effects of the Healthy Housing intervention? What are the factors that contribute to a household exhibiting a success case or a non success case?	 NEW NEW

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