



community energy action
charitable trust

Warm Babies Project

Evaluation Report

Caroline Fyfe
Community Energy Action
February 2005

© All rights reserved.

Community Energy Action
PO Box 13759
Christchurch, New Zealand
Ph 64 3 374 5698
www.cea.co.nz

Contents

Executive Summary	4
1. Introduction	5
2. Aim	6
3. Methodology	6
4. Results	7
4.1 Referral Form Data	7
4.2 Referral Agency Questionnaire	8
4.3 Focus Group	11
4.4 Participants Questionnaire	13
4.5 Climatic Data	16
4.6 Power Use Data	17
4.7 Landlord's Questionnaire	20
5. Conclusion	22
6. Recommendations	23
Bibliography	24
Appendix 1: Warm Babies Users – Interview Questions	25
Appendix 2: Warm Babies Agency Questionnaire	27
Appendix 3: Warm Babies –Landlords Telephone Questionnaire	29
Appendix 4: Power Use Consent Form	30
Appendix 5: Raw data- Agency Questionnaire	31
Appendix 6: Flow Chart of the Referral Process	33
Appendix 7: Warm Babies Information Sheet	34
Appendix 8: Raw Data – Warm Babies users questions	35
Appendix 9: Raw Data – Climate	37
Appendix 10: Raw Data – Power Use	38
Appendix 11: Raw Data – Landlords Questionnaire	40

Disclaimer:

While every attempt has been made to ensure the accuracy of the material in this report, Community Energy Action makes no warranty as to the accuracy, completeness or usefulness for any particular purpose of the material in this report; and accepts no liability for errors of fact or opinion in this report, whether or not due to negligence on the part of any party.

© All rights reserved.

Community Energy Action
PO Box 13759
Christchurch, New Zealand
Ph 64 3 374 5698
www.cea.co.nz

List of Figures

Table 1: Number and outcome of referrals by agency	7
Chart 1: Number and outcome of referrals by agency	8
Chart 2: Reasons for unsuccessful referrals	8
Chart 3: Where agency staff first heard about the Warm Babies Project	9
Chart 4: Reasons given for referring families to the Warm Babies Project	9
Chart 5: Level of satisfaction with the referral process	10
Chart 6: Perceived benefits of home insulation	10
Chart 7: Proportion of agency staff who felt that the Warm Babies Project had met their clients' needs.	11
Chart 8: Housing tenure	13
Chart 9: Age of dwelling	13
Chart 10: Housing type	13
Chart 11: How participants first heard about the warm babies project	14
Chart 12: An evaluation of the referral process	14
Chart 13: An evaluation of the effects of work carried out	15
Chart 14: How energy efficiency measures have improved participants quality of life	15
Chart 15: Level of satisfaction with work carried out	16
Chart 16: Average monthly temperatures measured at Christchurch Airport March-December 2003	16
Chart 17: Average monthly temperatures measured at Christchurch Airport March-December 2004	17
Chart 18: A graph to compare electricity consumed by Household A – August- December 2003 and August-December 2004.	18
Chart 19: A graph to compare electricity consumed by Household C – August- December 2003 and August-December 2004.	18
Chart 20: How landlords first heard about the Warm Babies Project	20
Chart 21: Landlords' level of satisfaction with the referral process	20
Chart 22: Landlords' reasons for agreeing to Home Energy Checks	21
Chart 23: Landlords' perception of the benefits of the Warm Babies Project	21

Executive Summary

The purpose of this report is to identify whether the Warm Babies Project continues to meet the energy efficiency needs of its clients or whether there are some needs which remain unmet.

The sample group for the study consisted of referral agencies, project participants and landlords who had been involved with the Warm Babies Project between March and December 2004. Primary data collection consisted of telephone interviews, postal questionnaires and a focus group. Secondary data included historical climatic and power use records. Background research was carried out through examining referral forms, home energy checks and completed job sheets for work carried out during the period stated.

The study found that there is a high level of satisfaction with the Warm Babies Project and that it meets the energy efficiency needs of its clients in providing a warmer, drier and less draughty house and healthier children. Energy efficiency needs were only seen to be unmet where households referred could not be accepted onto the project. In this instance feedback to referral agencies was requested to allow them to track clients and refer them to other organisations where necessary.

The study identified that there is untapped demand for the Warm Babies Project and that this could be accessed through raising its profile amongst new and existing referral agencies. More written information to improve understanding of the Warm Babies Project amongst prospective participants and their landlords would help to increase the proportion of referrals which take part in the project.

It is recommended that the Warm Babies Project continue in its current form, that its profile is increased and that the potential for forming an agreement with Housing New Zealand is investigated. Further research should also be carried out to gain quantitative data on the impact of the project on children's health.

Acknowledgements

I would like to thank the following people for their assistance in compiling this study:

The project participants and landlords who took the time to discuss their experiences of the Warm Babies Project with me

Kevin McGill at NIWA for providing historical climatic records

Andrew Hannagan at Contact Energy/ Empower Ltd. and Michelle Whatarangi at Meridian Energy for providing power use data

Staff at: Plunket, Early Start, Christchurch Women's Hospital, Homebirth Midwives, Family Help Trust, Te Puawaitanga o te Tamati, Methodist Mission and Maori Women's Welfare League for their advise on and evaluation of the project. In particular Laura Mah, Carol Croy and Catherine Richveld for the additional insight and advice they provided through their participation in the focus group.

1. Introduction

The Warm Babies Project provides heating and energy efficiency solutions to young families on low incomes in Christchurch. It was first piloted in winter 2000 as a joint initiative between Community Energy Action and Plunket, and has since helped over 100 households.

Community Energy Action is a charitable trust, established in 1994. Community Energy Action's primary focus is improving the energy efficiency of the low income housing sector in Christchurch, to enable people to enjoy warmer and healthier living conditions.

Plunket was founded in 1907. It is New Zealand's leading provider of well child and family health services. Plunket aims to support families with young children by providing appropriate clinical and support programmes, and educational activities.

Funding for the Warm Babies Project was initially provided through a \$50,000 grant from Transalta (which was later purchased by On Energy). Meridian Energy took over sponsorship in 2002, providing \$30,000 grants in 2002/03 and 2003/04. Funding is supplemented through landlord contributions towards work carried out on rental properties and, where possible, subsidies are claimed from ECCA.

The Warm Babies Project is aimed at low income households with an infant of less than one year old, who live in cold, damp homes. Applications are also considered from families who have children under school age with health problems. The aim of the project is to protect the health of these children through providing a warm, dry home environment. To achieve this aim a comprehensive Home Energy Check is carried out and appropriate action is taken through the improvement measures listed below:

- Ceiling insulation
- Underfloor insulation
- Hot water cylinder wrap
- Draft-stopping of doors and windows
- Vouchers for lined, thermal curtains
- Home heating
- Energy efficiency advice

A study of the Warm Babies Project carried out in December 2000 (following the pilot programme) (Mora and Holmes 2000)¹, found that householders had benefited from the project in the following ways:

- Reduced anxiety about how they would keep their children warm
- Perceived improvements in future health
- Reduced power costs resulting in an increase in disposable income to spend on other essentials such as food
- Improved awareness of energy efficiency with information then passed on to others

On the recommendation of the 2000 study, the partnership with Plunkett has been extended to include a wider range of agencies working with young families. In 2004

¹ Mora L. and Holmes J. (2000): **Evaluation: Warm Babies, Healthy Children, A Community Energy Action Millennium Project**, Family and Community Division, Anglican Care

referrals to the Warm Babies Project were made from over 7 different agencies including: Early Start, Family Help Trust, Te Puawaitanga o te Tamaiti, Methodist Mission, Maori Women's Welfare League, and both independent and hospital based midwives.

2 Aim

The aim of this survey is to confirm that the Warm Babies Project continues to meet the actual energy needs of participants and to identify what unmet needs remain.

3. Methodology

3.1 Background research was carried out through examining the records of:

- Referral Forms
- Home Energy Check assessment sheets
- Completed job sheets

This enabled an assessment to be made of which referrals were successful and why, the willingness of landlords to participate in the scheme and the extent of work carried out.

3.2 Primary data was then collected from the following sources:

- Telephone interviews were held with all households who were selected for subsidies under the Warm Babies Project and who had energy efficiency work carried out on their homes between March and December 2004.²
This information was collected in order to assess how successful the energy efficiency measures carried out had been in meeting the needs of the project participants.
- Questionnaires were sent out to all individuals who made referrals to the Warm Babies project in 2004.³
This information was collected in order to ascertain the knowledge of the project amongst staff at referral agencies, the motivation of individuals making referrals and to evaluate the process of making a referral.
- Telephone interviews were carried out with all landlords who agreed to home insulation measures being carried out where tenants were referred to the Warm Babies Project⁴ in 2004.
This information was collected in order to identify the motivation of landlords to improve the energy efficiency of their properties and their level of satisfaction with the work carried out.
- A focus group of representatives from the major referral agencies was convened in order to discuss issues arising from the questionnaires.

3.3 Secondary data was collected from:

- Analysis of the referral forms used to recommend participants to the warm babies project between March and December 2004.
- Electricity use data was collected for March- December 2004 (the period investigated in the study) and for the same period in 2003. Signed consent was

² A copy of the questions used for these interviews can be found in Appendix 1

³ A copy of this questionnaire can be found in Appendix 2

⁴ A copy of the questionnaire used for these interviews can be found in Appendix 3

obtained from each household to enable electricity use to be collected from the appropriate energy supplier.⁵

This information was collected in order to determine whether power use had been reduced as a result of the energy efficiency measures carried out.

- Climatic data for the months March –December 2003 and March- December 2004 was collected from NIWA⁶. This allowed a comparison to be made between average monthly temperatures over two years, a factor likely to influence power use.

4. Results

4.1 Referral Form Data

Referrals were made by a total of 29 individuals working for 8 different agencies as well as 5 self referrals, details and outcomes are listed in the table below:

Referral Agency	Number Referrals	Number Successful	Curtain Voucher	Reason for refusal (were given)
Plunket	23	8	6	HNZ ⁷ property – 4 Tenant intending to move – 3 Not least disadvantaged – 2 Landlord refusal – 1 Unsuitable for insulation – 1
Early Start	21	2	8	HNZ property – 3 Tenant intending to move – 3 Property to be demolished – 2 Not least disadvantaged – 1 Already insulated – 1 Landlord refusal – 1
Homebirth Midwives	1	1	1	
CWH ⁸ Midwives	4	1	0	Tenant intending to move – 1
Family Help Trust	5	1	3	Tenant intending to move – 1 Property to be demolished – 1 Landlord refusal – 1
Te Puawaitanga o te Tamaiti	2	2	0	
Methodist Mission	1	0	0	
Maori Women's Welfare League	1	0	1	HNZ property – 1
Self Referral	9	5	2	House to be demolished – 1 Not least disadvantaged – 1 Child too old – 1
Total	67	20	21	HNZ property – 8 Tenant intending to move – 8 Property to be demolished – 3 Not least disadvantaged – 4 Landlord refusal – 3 Other – 3

Table 1: Number and outcome of referrals by agency

⁵ A copy of the consent form used can be found in Appendix 4

⁶ NIWA – abbreviation National Institute of Water and Atmospheric Research Ltd.

⁷ HNZ – abbreviation Housing New Zealand

⁸ CWH – abbreviation – Christchurch Women's Hospital

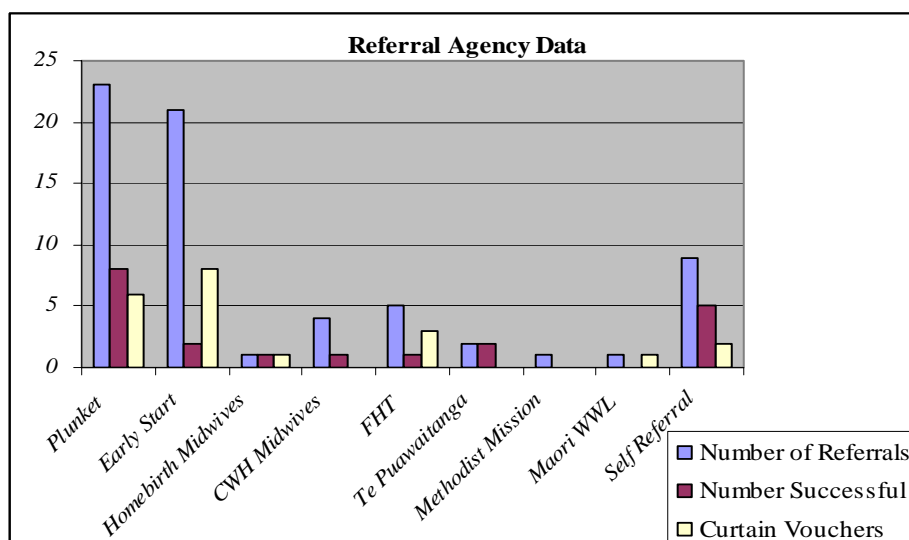


Chart 1: number and outcome of referrals by agency

The majority of referrals as well as those with successful outcomes (34% and 12% respectively) were made by Plunket, followed by Early Start (31% and 3%) and self referral (13% and 7.5%).

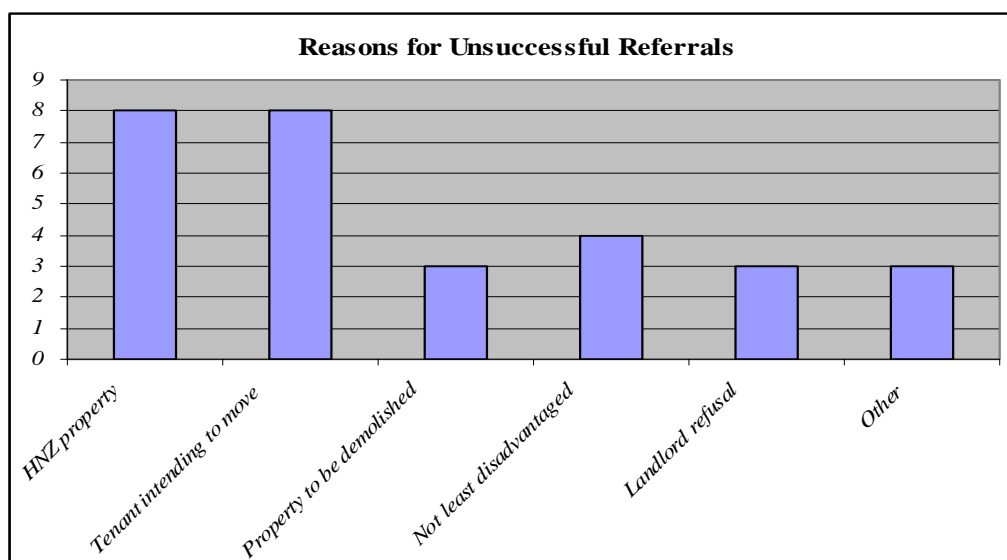


Chart 2: reasons for unsuccessful referrals

The main reasons given for a referral being unsuccessful were: the property being HNZ (28%), tenants intending to move out of the property (28%) and households identified as not being least disadvantaged (14%). Referrals which were unsuccessful in obtaining insulation work, did in most cases, benefit from a Home Energy Check, energy efficiency advice and, in some cases, from thermal lined curtains through the CEA Curtain Bank⁹.

Percentages are based on those unsuccessful referrals where reasons were stated. Reasons were not stated in all cases of unsuccessful referrals.

4.2 Agency Questionnaire¹⁰

All 29 agency staff who had referred clients to the Warm Babies project between March-December 2004 were contacted by letter and asked to complete a

⁹ The CEA Curtain Bank recycles donated curtains for use by low income households

¹⁰ For raw data see Appendix 5

questionnaire about the referral process. Eighteen replies were received, with at least one reply from each referral agency. The response rate to this questionnaire was, therefore, 64%.

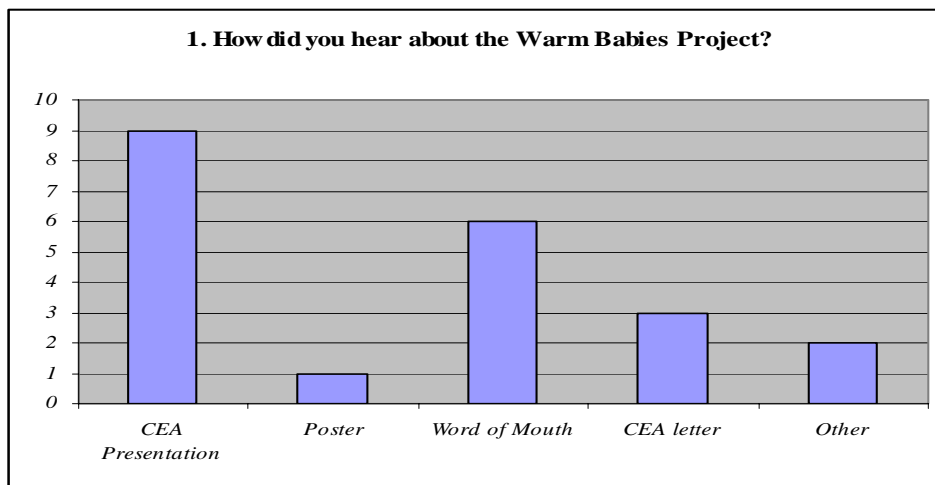


Chart 3: Where agency staff first heard about the Warm Babies Project

The majority of agency staff who referred families to the Warm Babies project found out about it either through a CEA presentation (50%) or word of mouth (33%). CEA presentations accounted for all but one of the Plunket nurses who responded and 60% of staff at Early Start. The other 40% of Early Start staff heard about the Warm Babies project through word of mouth, as did all staff at the Family Help Trust. Of the Midwives who responded there was an equal split between word of mouth and CEA presentation (the latter from when the midwife had been a Plunkett nurse). Te Puawaitanga o te Tamaiti and Maori Women's Welfare League heard about the Warm Babies project through CEA publicity promoted at work. Other means of learning about the project were through promotion at work (12%).

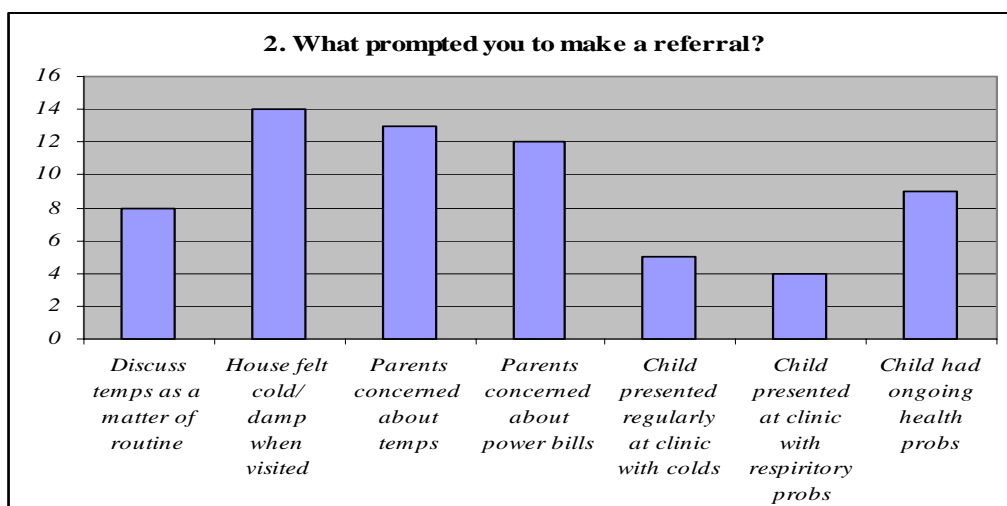


Chart 4: Reasons given for referring families to the Warm Babies Project

In all cases more than one reason was given for making the referral. Main reasons cited were: the house felt cold/ damp when visited (78%), parents expressed concern about the household temperature (72%) and parents expressed concern about high power bills (66.5%). Of reasons relating to concern about a child's health, the most common was that the child had ongoing health problems (such as asthma) (50%).

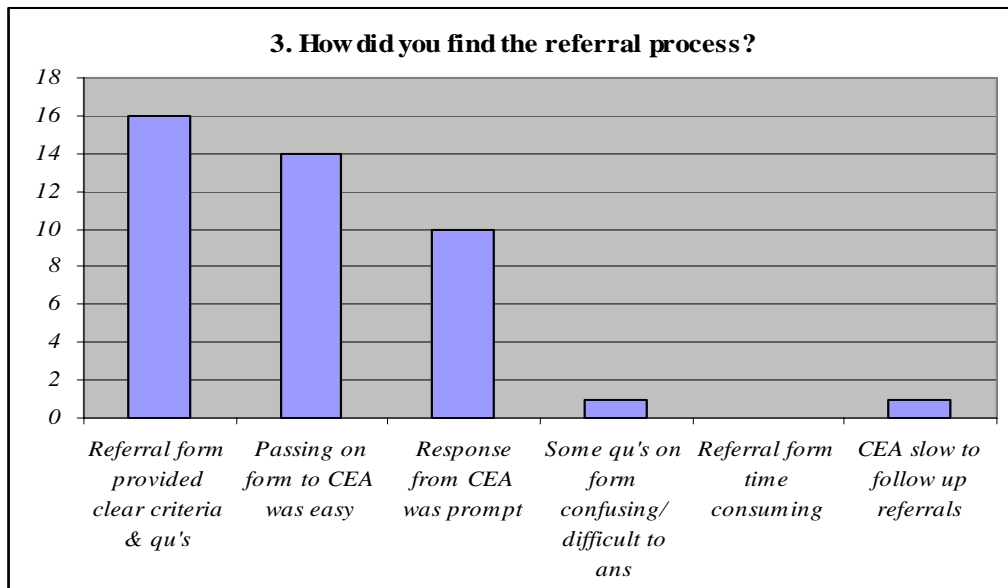


Chart 5: Level of satisfaction with the referral process

There was a high level of satisfaction with the referral process, with most agency staff saying the forms were clear (88%) and easy to pass on to CEA (78%). Suggested improvements to this process mainly centred on: giving feedback about the outcome of referrals (55.5%), giving clearer criteria about who qualifies for the Warm Babies project (50%) and providing more information (44.5%). The latter was picked up on by several agency staff, who suggested that a leaflet to give to parents, explaining the project, would be particularly helpful. A contact telephone number on the referral form, to help sort out any queries, was also requested.

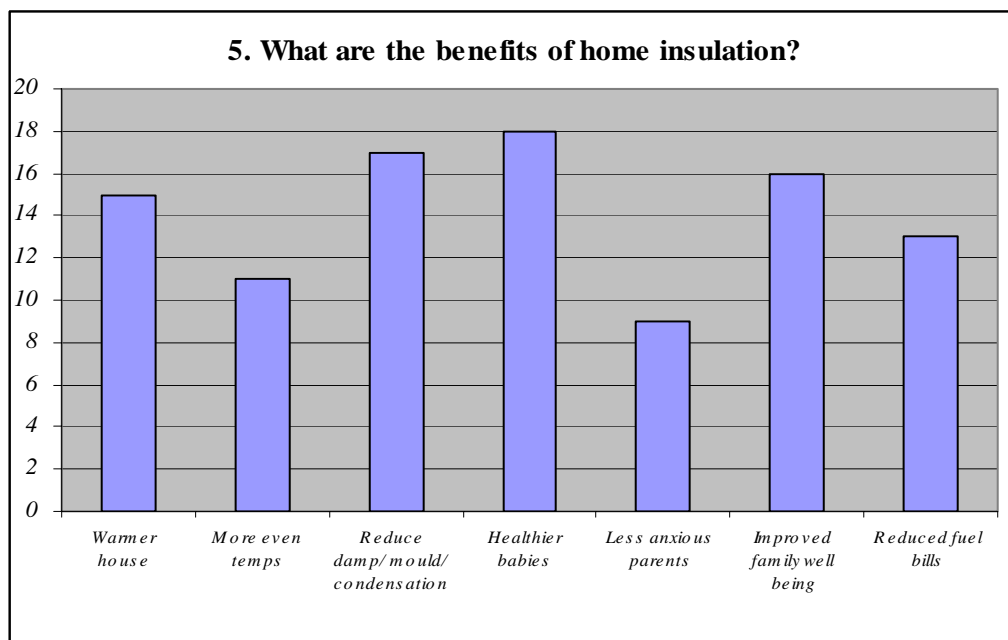


Chart 6: Perceived benefits of home insulation

All agency staff identified multiple benefits from home insulation, with healthier babies universally mentioned and reduced damp/ mould (94%), warmer homes (83%), improved family wellbeing (89%) and reduced fuel bills (72%) mentioned by most. One respondent identified that the measures taken had “*improved the parents self esteem: as they are cared for they can care better*”, whilst two others

mentioned benefits to landlords in keeping up to date about expectations of rental accommodation and keeping tenants longer.

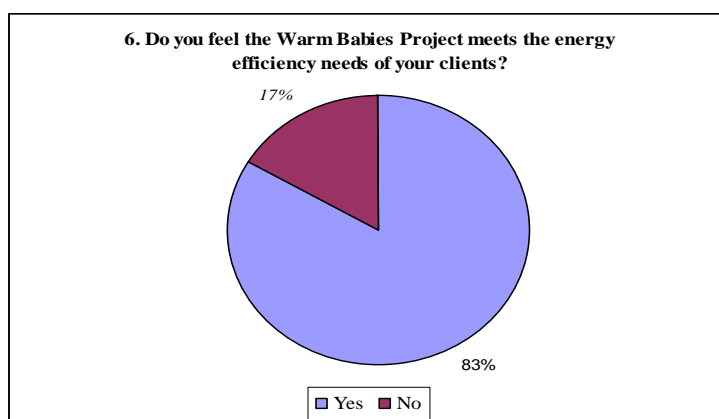


Chart 7: Proportion of agency staff who felt that the Warm Babies Project had met their clients' needs.

89% of agency staff felt that the Warm Babies project had met their clients' needs. Two of those who answered no to this question did so because their referrals had not been successful in getting onto the project, whilst one expressed concern that her client's fuel bills had increased since a heat pump was installed as part of the project (the family had previously had very little in the way of heating).

The most common answers to how the project could be improved were: that it include Housing New Zealand properties and that funds be found when landlords refuse to contribute. Increasing public awareness of the project was mentioned and this also reflected the only concern about the project: "*that it is underutilised and may be phased out*".

Additional comments were all positive, expressing thanks for an "excellent", "great" and "useful" service. One respondent commented that even where only a little change could take place to client's homes (due to rental/HNZ), they found it good to get other ideas (through the home energy check) about reducing power bills. Another thanked all staff "*for their kindness and understanding to our whanau who come to you for assistance*".

4.3 Focus Group

Areas where improvements could be made were identified through the referral agency questionnaires and a focus group organised to discuss these further. All referral agency staff who participated in the questionnaire survey were asked if they would be able to attend the focus group. Of these seven were interested in discussing the project further and three (representing the two main referral agencies – Plunket and Early Start and a midwife from Christchurch Women's Hospital) were able to attend a meeting. The key points of the discussion are in bold.

The most effective way of disseminating information about the Warm Babies Project to referral agencies:

All three members of the focus group had heard about the Warm Babies Project through a presentation at work. They felt that this was the most effective way of disseminating information as it is likely to reach more people and to be remembered better than contact solely via written communications. It was felt that this would need to be repeated on an annual basis to keep up to date with staff changes.

It was also suggested that a wider audience of referral staff could be reached through articles in newsletters and publications such as “Communique” (published through the College of Midwives).

Once publicised, referrals could be further encouraged through: providing full contact details on the referral form (including a telephone number so that any queries can be clarified) and a flowchart explaining the referral process.¹¹

The most effective way of expanding the number of referrals received:

It was suggested that referral agencies could be further expanded through recruiting:

- The Linwood Forum (a network of community groups which meet on a monthly basis)
- Obstetric social workers (based on hospital paediatric wards)
- Lifelines (a group which supports disabled children)
- Second year Midwifery students

In addition wider awareness of the project (which would potentially bring in other referral agencies as well as self referrals) could be facilitated through:

- A stand at the Parent and Child show
- Links to the CEA website from other appropriate websites: such as Plunket, Christchurch parenting directory and Tenancy Services
- An article in the Meridian newsletter specifically about Warm Babies

The most effective way of expanding the number of referrals from midwives:

Midwives have a high workload, unpredictable hours and often work independently, for this reason it is hard to target a group to give a presentation to. The best way to publicise the Warm Babies Project with this group was therefore considered to be a mixture of posters on maternity wards and word of mouth. The midwife present at the focus group suggested having a recognised person on the maternity ward to whom referrals could be passed and information disseminated.

Other routes through which midwives could be reached included: articles published through the College of Midwives, talks to midwifery students and a leaflet in “Bounty Packs” (which are given out at around 12 weeks of pregnancy). The latter could then allow prospective parents who were worried about the temperature of their home to contact their midwife (or CEA directly) early on.

Achieving an increase in summer referrals:

It was suggested that to increase summer referrals, talks with the major agencies should be targeted for this time of year. Additional, concise, information in newsletters or leaflets could help ensure that the project is kept in the forefront of people’s minds.

Information for parents:

A leaflet to give to parents had been suggested on many of the agency questionnaires. A sample information sheet was prepared for the focus group.¹² It was felt that, while helpful, the information sheet was too wordy in its current form, as some parents have literacy problems or English as a second language.

¹¹ For an example of a flowchart see Appendix 6

¹² For a copy of the information sheet see Appendix 7

The focus group suggested a leaflet should be in bullet points tied into questions such as “Do you have a cold house?” – which could then direct parents to referral agencies where the project could be discussed in greater detail. It was also suggested that a picture of a happy/ snug baby could be included on the front of the leaflet to attract parent’s attention.

Feedback for Agency Staff:

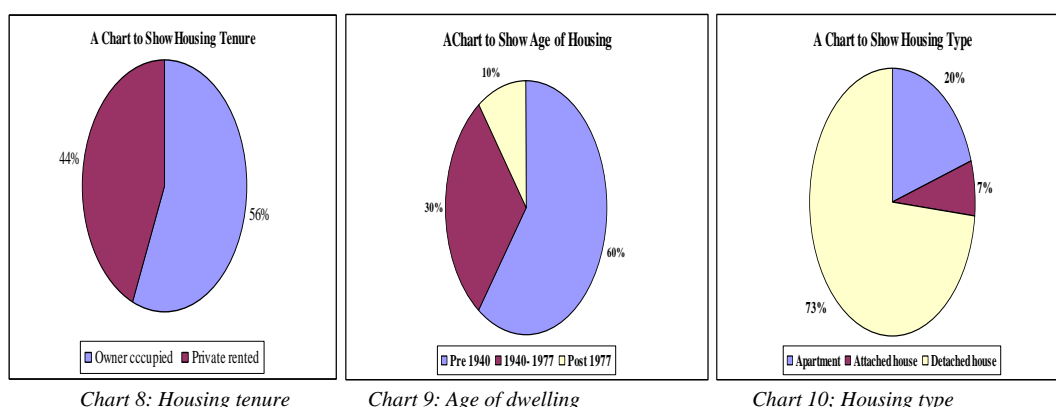
In common with requests via the agency questionnaire, members of the focus group asked for feedback on the outcomes of referrals they had made. This could be in the form of a standard letter and would help in at least two areas: firstly in allowing the referrer to approach other agencies, such as housing corporations, if CEA are unable to help families and secondly as evidence of additional, valuable, work that the referrer has carried out for the purposes of professional development and appraisal.

A Longitudinal Study:

A study measuring health and development indicators of children whose homes have been insulated over the past five years, or one which tracks children from the point at which homes are insulated would be helpful in providing hard data to convince individuals (such as landlords) and organisations (such as HNZ) that the project is worthwhile. Linked to this, it was also suggested that CEA become a lobby group to promote healthy housing standards.

4.4 Participants Questionnaire¹³

A total of 20 houses were insulated as part of the Warm Babies Project between March and December 2004, the period selected for this evaluative study. All of these were contacted and telephone interviews carried out with 16 households. The remaining 4 proved to be uncontactable by telephone and did not reply to a postal questionnaire. The response rate to this part of the survey was therefore 80%.



Of the households which participated in the Warm Babies Project between March and December 2004 there was a 60/40 split between owner occupied and private rented accommodation. The majority of homes which were insulated as part of the project were pre1940 detached villas.

¹³ For raw data see Appendix 8

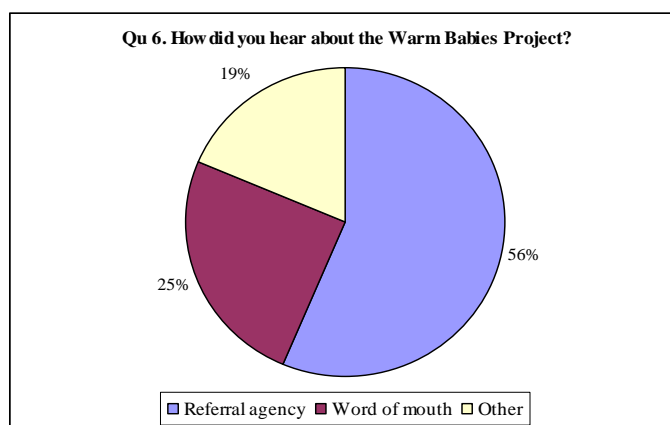


Chart 11: How participants first heard about the warm babies project

Most Warm Babies households first heard about the project through their referral agency (60%) with the remainder finding out about it through word of mouth (26%) or private research (direct contact with CEA, contact made via the Citizens' Advice Bureau or through the council's Clean Heat programme).

The main reasons for participating in the project were cited as:

- Warmer home 87%
- Improvement in children's health 53%
- Less damp/ condensation 47%
- Lower power bills 47%

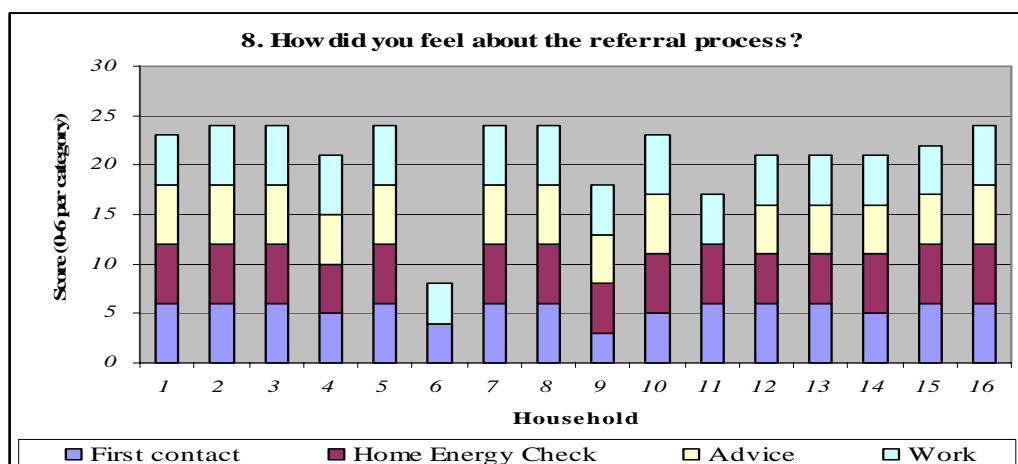


Chart 12: An evaluation of the referral process (1= unsatisfactory to 6= excellent: 0= don't know: maximum score = 24)

There was a very high level of satisfaction with the referral process, with most rating all aspects of the service as either very good or excellent. No value was given where a tenant couldn't remember or didn't know about an aspect of the referral process. The lowest ratings were given by the teenage daughter of a participant who was not well enough to take part. Having not been directly involved in the project, she could only give very general answers.

Energy efficiency measures carried out on homes were:

- Ceiling insulation 93%
- Draught excluders on doors 87%
- Under-floor insulation 73%
- Curtain vouchers 33%
- Heaters installed 13%
- Polythene 7%

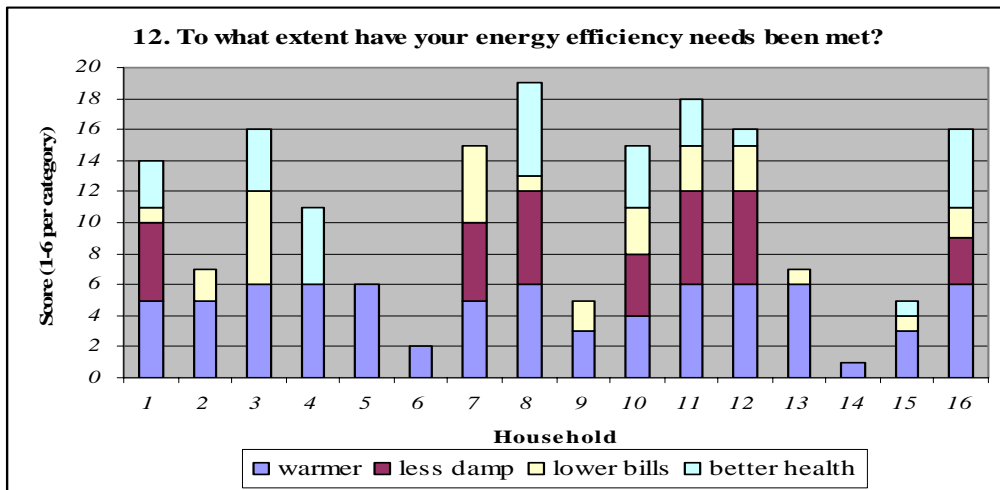


Chart 13: An evaluation of work carried out: 1= not at all - 6= completely: 0= don't know: maximum score = 24)

The majority of participants surveyed found a significant improvement in warmth, with 74% rating it as “very good” or “excellent”. Of the remainder of households most felt it was difficult to tell due to the work taking place at the end of winter/ spring when the weather was becoming warmer.

Just under half of those surveyed mentioned that their house now suffered less from damp, with 71% of those, rating the change as “very good” or “excellent”. One parent mentioned that her floorboards were now drying out and had started to creak for the first time and another that mildew had disappeared from the bathroom and children’s playroom.

Large changes in power cost were only mentioned by 13% of participants (one of whom had had a leaking pipe repaired at the time the project insulated her home). The timing of the work (end of winter/ spring) was, again, a major reason given for no change in power costs noticed as well as some families having switched from solid fuel to electricity prior to or as part of the project.

Improvement in a child’s health was mentioned in 33% of cases (where ratings of “very good” and “excellent” were given). Responses to this question were generally related to the problems that originally existed: for example, those whose children were initially in poor health rated the improvement in health more highly than those whose children had always been relatively healthy.

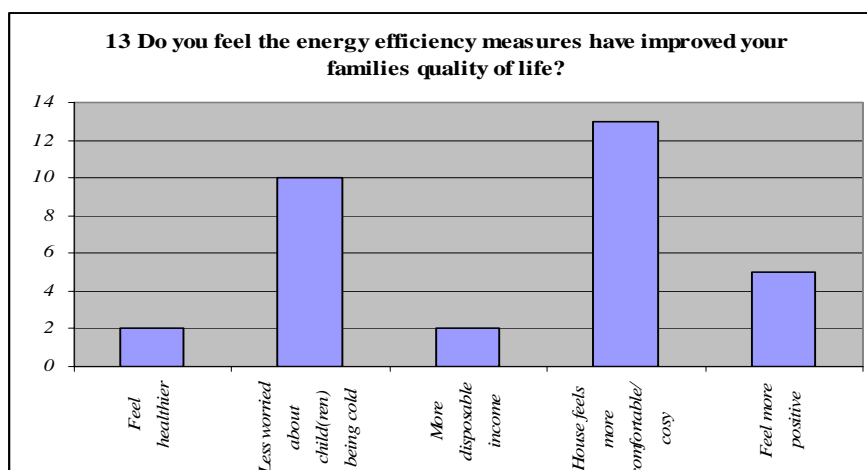


Chart 14: How energy efficiency measures have improved participants quality of life

All households believed that the Warm Babies project had improved their quality of life in some way. 87% said that the house was more “cosy”/ comfortable to live in, 67% said they were less worried about their children being cold and 33% felt that they were generally more positive.

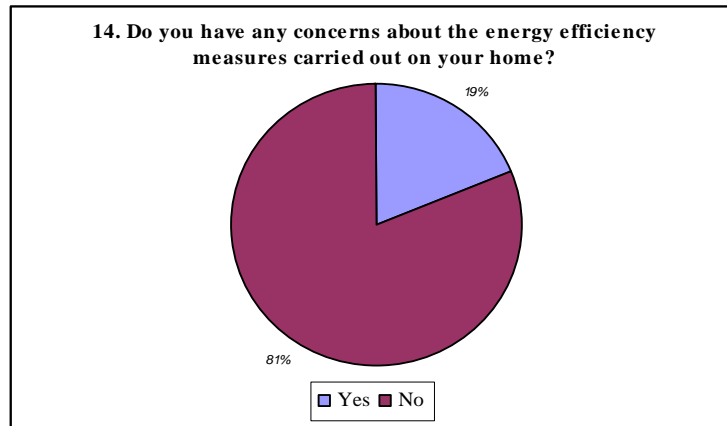


Chart 15: Level of satisfaction with work carried out

81% of participants had no concerns with regard to the work carried out, whilst the remaining 19% felt that additional measures would further improve their homes. Measures mentioned included: a draft excluder being fitted to a second door, curtains for a child’s room and under-floor foil being added (in this case there had been insufficient space under the house to carry out the work).

All additional comments were positive with many participants noticing that the house now heated up more quickly and stayed warm for longer once the heating had been turned off or found that they didn’t have to turn the heating on until later in the evening. Several of those who had foil installed noticed warmer, less draughty floors, with one parent stating how important this was now her babies were crawling. Many participants said that their houses were less draughty, with one saying that the doors no longer rattled and another that the curtains provided by the curtain bank had made a huge difference.

4.5 Climatic Data¹⁴:

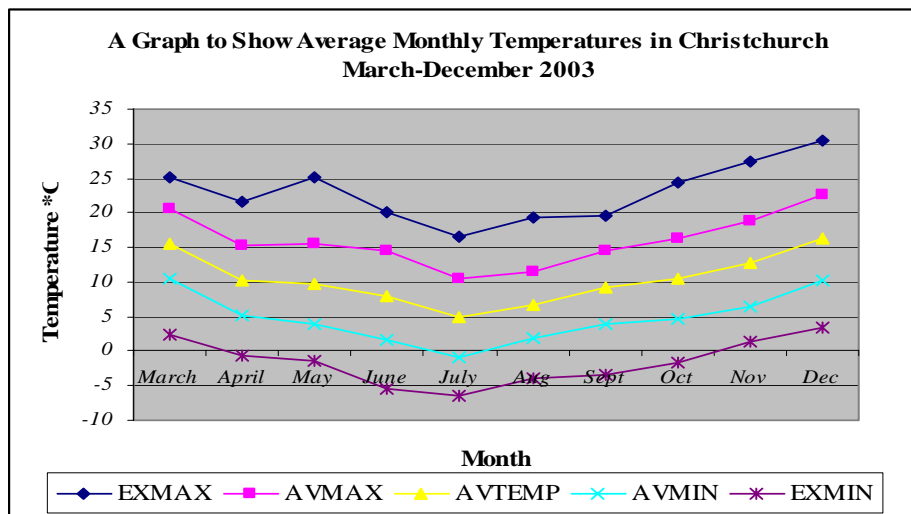


Chart 16: Average monthly temperatures measured at Christchurch Airport March-December 2003

¹⁴ For raw data please see Appendix 9

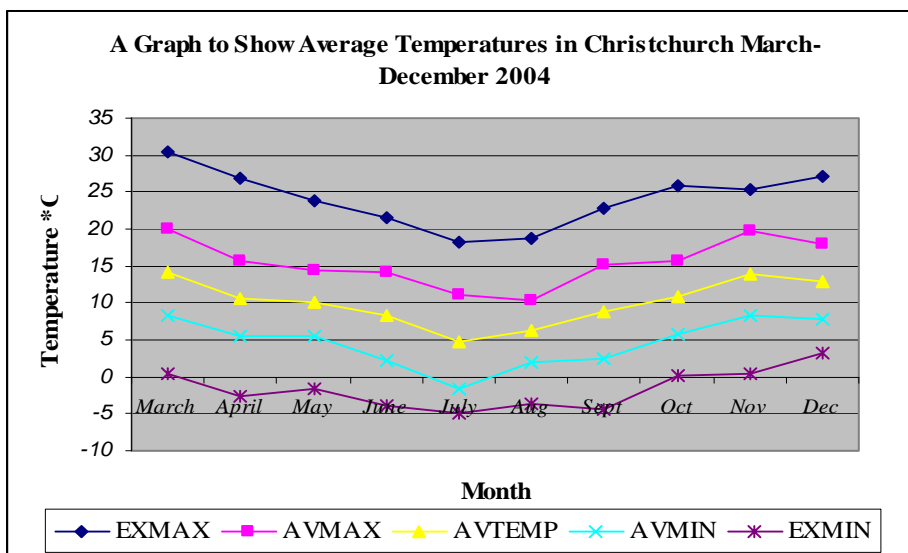


Chart 17: Average monthly temperatures measured at Christchurch Airport March-December 2004

KEY:

- EXMAX:** Highest maximum temperature in degrees Celsius
- AVMAX:** Average maximum daily temperature in degrees Celsius
- AVTEMP:** Average daily temperature in degrees Celsius
- AVMIN:** Average minimum daily temperature in degrees Celsius
- EXMIN:** Lowest minimum temperature in degrees Celsius

The average temperatures for March-October 2004 were within +/- 1 degree of those in 2003. Temperatures in November were significantly warmer (by 1.3 degrees) in 2004 than in 2003 (with temperatures of 14 and 12.7 degrees C respectively). In December 2004 temperatures were significantly colder (by -3.4 degrees) compared to 2003 (13 and 16.4 degrees C respectively).

The average maximum temperatures for 2004 were generally lower, but within +/- 1 degree C of those in 2003. The exceptions to this were May which was 1.1 degrees lower (14.4 and 15.5 degrees C respectively) and August which was 1.2 degrees lower (10.4 and 11.6 degrees C respectively).

The difference between the average minimum temperatures was much more varied. March was 2.1 degrees lower in 2004 than in 2003 (8.4 and 10.5 degrees C respectively) whilst May was 1.6 degrees higher (5.6 and 4 degrees C respectively). Later in the year temperatures in September and December were lower in 2004 than in 2003, (by 1.5 degrees (2.5 and 4 degrees C respectively) in September and by 2.3 degrees in December (7.9 and 10.2 degrees C respectively)), and were higher in October (by 1.1 degrees C at 5.8 and 4.7 degrees C respectively) and November (by 1.8 degrees C at 8.2 and 6.4 degrees C respectively).

4.6 Power Use Data¹⁵

Consent for power use data to be collected was obtained from five households who took part in the Warm Babies project, others either did not want the data to be disclosed, did not return the consent form, were on Power Manager or had not been in the house long enough to have a history of power use. Given the small size

¹⁵ For raw data see Appendix 10

of the sample and the different circumstances of each household, power use data has been examined on a case by case basis.

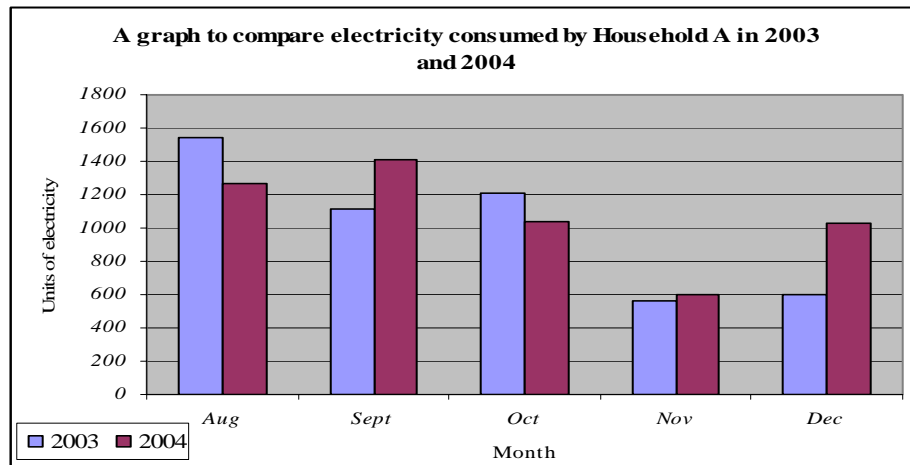


Chart 18: A graph to compare electricity consumed by Household A - August- December 2003 and August-December 2004.

Household A: This household consists of 1 adult and 3 children under 5, the youngest being 4 months at the time of referral to the Warm Babies project. The main sources of heating are a logburner and a nightstore heater. Insulation work (pink batts in the roof space and draught stopping outside doors) was carried out in mid August so energy data was compared August-December 2003 and August-December 2004. Overall power use increased by 6% in 2004 compared to 2003. The highest increase was in December where 1024 units were consumed compared to 602 in 2003, the most likely explanation for this is that the temperature was, on average, 3.4 degrees C colder in 2004 than in 2003. Consumption over the rest of the period of study broadly followed temperatures with a slight overall decrease in energy use of 2.5%.

Household B is a household of 1 adult and 2 children under 5, the youngest being 2 at the time of the referral to Warm Babies Project. The main source of heating was a portable gas heater. Insulation work (pink batts in the roof space, polythene and foil under the floor and draught stopping outside doors) was carried out in mid November 2004. Comparison has therefore been made between November and December 2003 and 2004. Power use increased by 23.6% over these two months. Part of this change could be explained by a colder December, however it should also be noted that the increase in comparative consumption follows a trend which shows monthly year on year increases since September 2004.

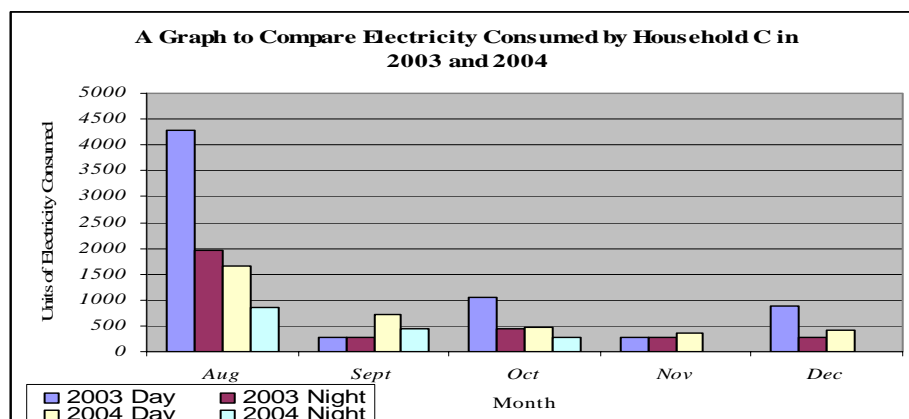


Chart 19: A graph to compare electricity consumed by Household C - August- December 2003 and August-December 2004.

Household C is a household of 1 adult and 3 children, one of whom is under 5. The main source of heating was a night store heater and a fan heater. Insulation work (pink batts in the roof space and foil under the floor) was carried out in late July. In October 2004 a heat pump was installed also through the Warm Babies Project. Overall power consumption decreased by 48% between August-December 2003 and August- December 2004. The most dramatic decrease was in August when power consumption fell by 60% despite the average temperature being 1.2 degrees colder. Consumption increased slightly above 2003 levels in September 2004, this followed temperature changes (the average temperature was 0.6 degrees lower in 2004 compared to 2003, whilst the average minimum temperature was 1.5 degrees C colder). Power use reduced significantly again (against the same months the previous year) in October 2004 and continued to fall through November and December. Part of the fall in power use could be due to higher average temperatures in October and November (increases of 0.3 degrees and 1.3 degrees respectively between October 2003 and 2004 and November 2003 and 2004), however this would not account for the fall in December which had average temperatures 3.4 degrees lower in 2004 than in 2003. Given the fall in the use of “Night” power and the significant drop in the overall level of power used from October 2004 onwards, the most likely explanation is the relative improvement in energy efficiency as a result of replacing the nightstore and fan heaters with the heatpump.

Household D consists of 2 adults and 1 child, who was 10 weeks old when referred to the Warm Babies Project. The main source of heating was an oil column heater and a portable gas heater. Insulation work (foil under the floor and draft stops on doors) was carried out at the end of September 2004 and complemented the ceiling insulation which had already been installed by the householder. Overall power consumption increased by 20% over the months October – December 2004 compared to the same period in 2003. The main reason for this is likely to be an increased demand for heating (as well as an increased use of other appliances such as the washing machine) due to their being a new baby in the house. In this case power use patterns month on month do not reflect differences in average temperatures.

Household E consists of 1 adult and 1 child under 5, the main source of heating was a logburner and oil column heater. Insulation work (pink batts in the ceiling, foil under the floor, draught stops and window seals) was carried out in mid October 2004. In addition curtains were provided for the living room and child’s bedroom by the curtain bank. Overall power consumption fell by 11.5% for November –December 2004 compared to the same period in 2003. This pattern did not, however, follow temperatures as power consumption was higher in November 2004 than in November 2003 despite average temperatures being 1.3 degrees C higher in 2004. In December power consumption was much lower than in the same month the previous year, despite temperatures being, on average 3.4 degrees C lower.

Overall no significant change in power consumption can be tracked across the five households sampled. Although temperatures were taken into account, a wide range of other variables still exist, (a change in the number and energy efficiency of appliances the household uses, changes in the main source of fuel used for heating, holidays or other absences from home, differences between read and estimated power bills etc.), which were not measured in this study. The only significant

reduction in power consumption identified (in Household C) was likely to be due to the repair of a leaking hot water pipe and the installation of more energy efficient heating. A better idea of the impact of insulation work carried out may be found by comparing power use over the following winter. In both cases where work was carried out in July (Households A and C), August power consumption showed a significant decrease compared to the same month in the previous year.

4.7 Landlords' Questionnaire¹⁶

Of the homes that took part in the survey 9 were private rented. All nine landlords were contacted and 7 were interviewed over the telephone and one replied by fax. The remaining one proved un-contactable by telephone and did not respond to a postal questionnaire. The response rate to this part of the survey was therefore 89%.

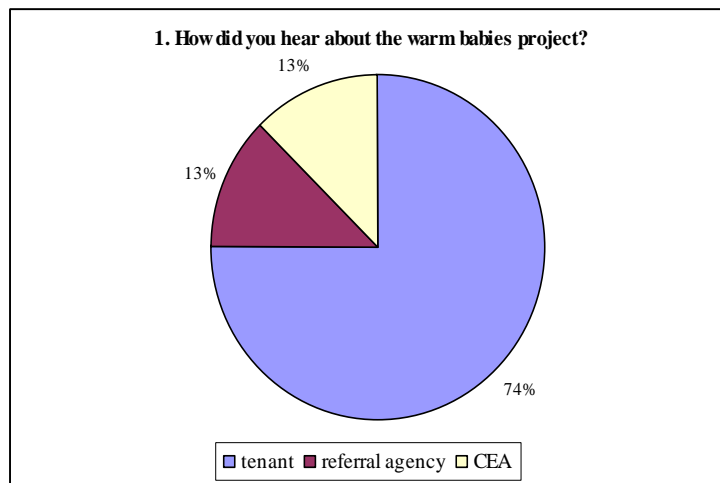


Chart 20: How landlords first heard about the Warm Babies Project

Of the landlords who took part in the survey 74% were informed about the Warm Babies project through their tenant, 13% from the referral agency and 13% through an initial telephone call from CEA. One landlord said he knew of CEA before being asked to participate in the project.

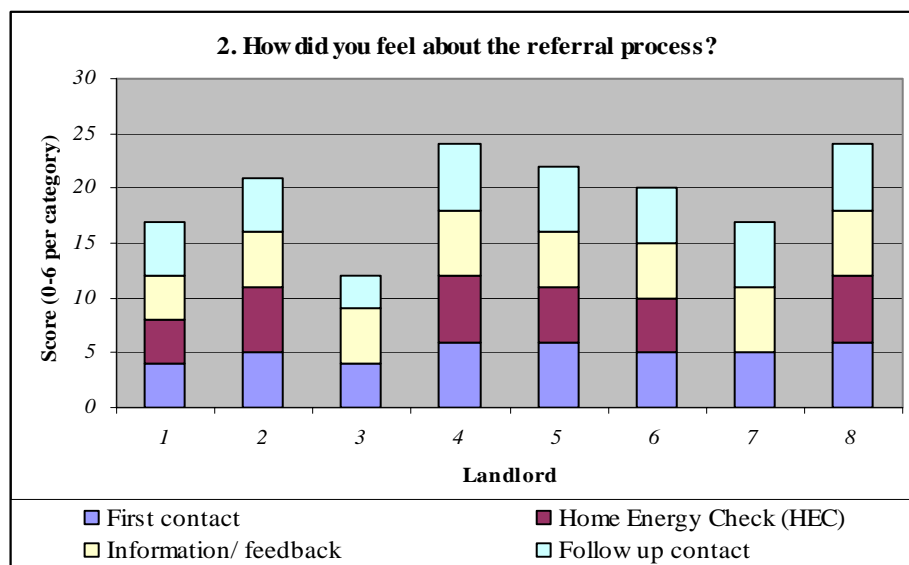


Chart 21: Landlords' level of satisfaction with the referral process (1= unsatisfactory to 6= excellent: 0= don't know: maximum score = 24)

¹⁶ For raw data see Appendix 11

Most landlords gave the referral process a high rating, of at least “fair” and mainly gave ratings of “good” or “excellent”. A zero was given where a landlord could not remember a part of the referral process. The one rating of “average” related to follow up contact where the landlord felt more feedback would have been helpful.

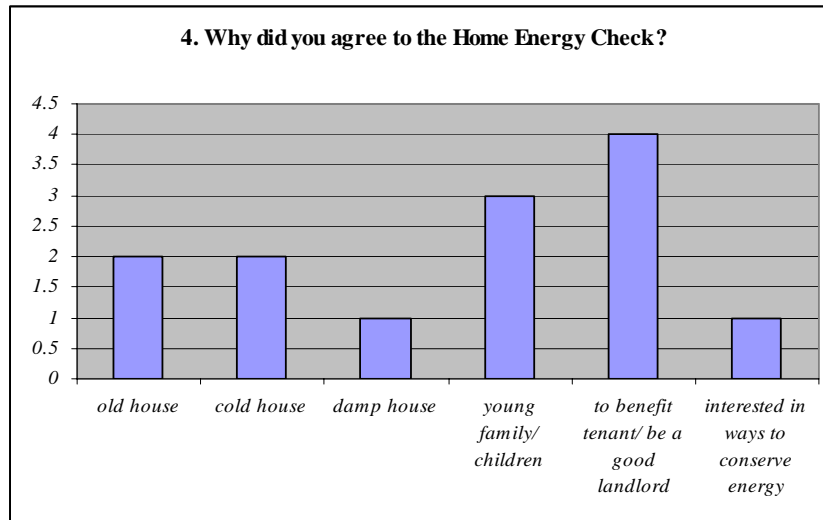


Chart 22: Landlords' reasons for agreeing to Home Energy Checks

Reasons for agreeing to the home energy check related to either the condition of the house or concern for the welfare of the tenant, with 57% saying that they knew the house was old, cold or damp, 28.5% saying they agreed because their was a young family in the house and 14.5% wanting “to be a good landlord”.

All landlords questioned agreed to all measures recommended in the home energy check and all made a financial contribution. The contributions varied from \$100 (from a landlord who had a Community Service Card himself) to \$1,125. A contribution is required for the project to go ahead.

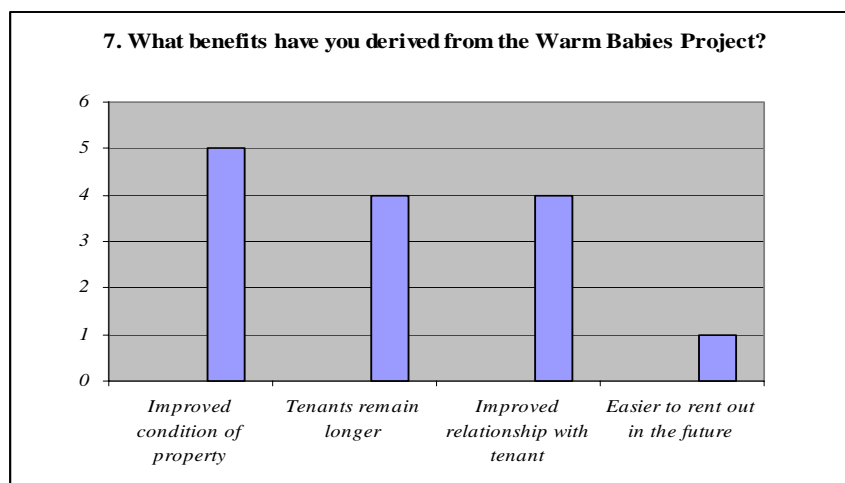


Chart 23: Landlords' perception of the benefits of the Warm Babies Project

In terms of benefits derived from the Warm Babies project, equal weight was given to improving the condition of the property, encouraging the tenant to remain longer and improving the relationship with the tenant. Other reasons given were: that the property would be easier to rent out in the future, that it would save money on power and that it was the sensible thing to do.

No concern was expressed regarding the work carried out and most seemed pleased with the results. One landlord commented that he could notice the warmth whilst another said he thought the house was already warm but knew the doors needed draft proofing.

5. Conclusion

There is a strong positive attitude towards the Warm Babies Project from all those who have been associated with it, and there is a high level of satisfaction with the referral process from all groups surveyed (agency staff, householders and landlords).

Most participants interviewed felt their energy efficiency needs had been met: in terms of having a warmer, drier and less draughty house. Evidence cited by participants included floorboards drying out and doors that had stopped rattling. This outcome is supported by Isaacs (1998)¹⁷ which found that the weighted R-rating¹⁸ of homes surveyed increased by between 21 and 35 units (51-88%) after insulation was fitted.

Where a child had a health issue, there was a perceived improvement in the child's health. Only a *perceived* improvement can be noted as the results were based on a parents opinion of changes in the child's health rather than hard data. This outcome is, however, supported by Chapman et. al. (2004)¹⁹ which identified a significant reduction in GP visits for children under 5 following the installation of home insulation.

There is no clear evidence with regard to the impact of the Warm Babies project on power bills, as a number of other variables exist which impact upon this. It should, however, be noted that the household which had a heatpump installed as part of the project did see a significant reduction in power costs.

Community Energy Action acknowledges that many people are prepared to trade their (energy) savings for increased health and comfort, so makes no claims for solid energy savings.²⁰ The Warm Babies Project participants survey demonstrated (very strongly) that those who had taken part, found that their houses were much more "cosy" and "comfortable". In addition many mentioned that the house heated up more quickly and remained warm for longer – which would suggest an overall improvement in energy efficiency.

Amongst referral agency staff, clients energy efficiency needs only remained unmet, where they were unable to be accepted onto the project (most commonly due to the property being owned Housing New Zealand or landlords not wishing to take part) – in this case help obtained was limited to a Home Energy Check and curtain vouchers. It should also be noted that the proportion of referrals which were accepted was 20/67 or 30% for full insulation measures and 21/67 or 31% for curtain vouchers. This would indicate that criteria for appropriate homes needs to be more strongly communicated to referral agencies and that where a referral is unsuccessful, feedback is given. In addition prospective participants and their landlords' may need to gain a greater understanding of how the project can help them.

¹⁷ Isaacs N. (1998): '**Energy Efficiency Review of Christchurch Houses**' Housing New Zealand

¹⁸ R-rating – the ability of a surface to resist heat loss, where 1 unit = metres squared x degrees centigrade /watts of electricity

¹⁹ Chapman R., Howden-Chapman P. and O'Dea D. (2004): '**A cost-benefit evaluation of housing insulation: results from the New Zealand "Housing Insulation and Health Study"**' Wellington School of Medicine

²⁰ '**Winners Exposed**' 2004 Energywise Awards Programme

Referral agency staff also felt that there is a greater potential demand for the project and that this could be tapped through wider publicity amongst referral agencies and by further extending the number of agencies involved.

6. Recommendations

It is recommended that:

1. The Warm Babies Project continues in its current form, which has been so effective in meeting the energy efficiency needs of its clients.
2. Measures are taken to increase the profile of the Warm Babies Project amongst both referral agencies and potential clients.
3. A wider understanding of the Warm Babies Project amongst all groups involved (agency staff, participants and landlords) is promoted through an explanatory leaflet.
4. Feedback is given to agency staff about the outcome of Warm Babies Project referrals.
5. The potential for forming an agreement with Housing New Zealand, to allow their tenants onto the Warm Babies Project, is investigated.
6. Further research, such as a longitudinal study tracking those children who have been involved with the Warm Babies Project, is undertaken to measure the health benefits of the project.

Bibliography

Mora L. and Holmes J. (2000): **Evaluation: Warm Babies, Healthy Children, A Community Energy Action Millennium Project**, Family and Community Division, Anglican Care

Isaacs N. (1998): **'Energy Efficiency Review of Christchurch Houses'** Housing New Zealand

Chapman R., Howden-Chapman P. and O'Dea D. (2004): **'A cost-benefit evaluation of housing insulation: results from the New Zealand "Housing Insulation and Health Study"'** Wellington School of Medicine

'Winners Exposed' 2004 Energywise Awards Programme

APPENDIX 1: Warm Babies Users – Interview Questions

Address:.....

1. **Housing Tenure:** *(from records)*

- Owner Occupied Private rented Other.....

2. **Type of Housing:** *(from records)*

- Apartment Attached House Detached House Other.....

3. **Age of house:** *(from records?)*

- Pre 1940 1940-1977 1978 onwards

4. **How many people live in your household?**

- <5 years 6-16 years >16 years *(from records)*
 <5 years 6-16 years >16 years *(at time of survey)*

5. **Age of the youngest child:**..... *(from records)* *(at time of survey)*

6. **How did you hear about the “Warm Babies Project”?**

- Referral agency Word of mouth Publication CEA Website
 Other website *(which?)* Notice/ Poster *(where?)* Other *(specify)*
.....

7. **Who made the referral?** *(from records)*

- Plunkett Early Start Family Help Trust Self
Referral Other *(please specify)*.....

8. **How did you feel about the referral process?**

	1. Unsatisfactory	2. Below average	3. Average	4. Fair	5. Good	6. Excellent	Don't Know
First (telephone) contact							
Home Energy Check							
Advice / feedback given							
Follow up contact (telephone/ letter)							

9. **How could the referral process be improved?**

10. **What energy efficiency needs did you hope to meet through the warm babies project:** *(some info from records)*

- (A) Warmer / more even household temperature
 (B) Less damp / condensation
 (C) Lower heating costs
 (D) Improve child’s health (fewer GP/ hospital visits)
 (E) Other *(please specify)*.....

11. Which of the following measures were undertaken: (from records)

- Roof insulation
- Under floor insulation
- Polythene
- Draught proof doors
- Curtains in: Child(ren)'s room Living room
- Install heater (type?)
- Other (please specify)

12. To what extent have your energy efficiency needs been met by the measures taken?

	1. Not at all	2. A little	3. To some extent	4. A fair amount	5. A lot	6. Completely
A (warmer)						
B (less damp)						
C (lower bills)						
D (better health)						
E (other)						

(Qu. 12 comments)

13. Do you feel that the energy efficiency measures have improved your family's quality of life?

- No Yes (*please specify*)
- Feel healthier /Children sick less often
- Fewer sick days off work/ school
- Less worried about children being too cold
- Able to spend more on essentials, other than heating
- Feel more settled / comfortable in the home
- Feel more positive
- Other.....

14. Do you have any concerns about the energy efficiency measures carried out on your home?

- No Yes

(please specify)

15. How could we have been more helpful in carrying out the energy efficiency measures in your home?

16. Any other comments?

APPENDIX 2:

Warm Babies Agency Questionnaire

1. How did you hear about the Warm Babies Project?

- CEA Presentation/ Meeting Poster Word of Mouth
- CEA letter/ flyer CEA Website Other website:......
- Publication...... Other

2. What prompted you to make a referral(s)

- Discuss house temperature with parents as a matter of routine
- House felt cold/ damp when visited
- Parent expressed concern about temperature of house
- Parent expressed concern about high fuel bills / ability to pay for fuel
- Child present regularly at clinic with cold/ respiratory problems
- Child presented at clinic with more serious respiratory problems
- Child had ongoing health problems
- Other

3. How did you find the referral process?

- The referral form provided clear assessment criteria and questions
- Passing the form onto CEA was easy
- The response from CEA was prompt
- Some questions on the referral form were confusing or difficult to answer
- The referral form was time consuming
- CEA were slow following up referrals.

Qu. 3 Comments box:

4. How could the referral process be improved?

- More information about the Warm Babies project
- Clearer criteria stating who qualifies for the Warm Babies project
- Simpler referral form
- More support from CEA
- Feedback from CEA about the outcomes of referrals made

Qu. 4 Comments box:

5. **What do you feel are the benefits of home insulation measures?**

- Maintain house at a warmer
- Maintain a more even temperature throughout the house
- Reduce damp/ mould/ condensation
- Healthier babies
- Less anxious parents
- Improved well being of the family as a whole
- Reduced fuel bills
- Other.....

Qu 5 comments:

6. **Do you feel the Warm Babies Project meets the energy efficiency needs of your clients?**

- Yes No

If no please specify.....

7. **How could the Warm Babies Project be improved?**

8. **Do you have any concerns about the Warm Babies Project?**

- Yes No

Please specify

Please specify

9. **Would you be prepared to take part in a focus group to discuss the warm babies project further?**

- Yes No

If yes please provide a contact name and number

Name:

Contact no.:

10. **Do you have any other comments?**

Thank you for your time

APPENDIX 3: Warm Babies – Landlords Telephone Questionnaire

Address of rental property:

1. How did you first hear about the Warm Babies Project?

- Tenant Referral Agency (e.g. Plunkett) CEA
 Other (please specify).....

2. How did you feel about the referral process?

	1. Unsatisfactory	2. Below average	3. Average	4. Fair	5. Good	6. Excellent	D/K
First (telephone) contact							
Home Energy Check							
Information / feedback given							
Follow up contact (telephone/ letter)							

3. How could we improve the referral process?

.....

4. Why did you agree to the Home Energy Check?

.....

5. Did you agree to all the energy efficiency measures recommended in the Home Energy Check?

- Yes No (Please give your reasons for this decision)

Yes	No

6. Were you required to make a financial contribution?

- Yes No (Amount \$)

If yes to qu.4

7. What benefits have you derived from the Warm Babies Project?

- Improvement in the condition of the property (less damp / drafts)
 Tenants remain longer in the property
 Improved relationship with the tenants
 It will be easier to rent out the property in the future
 Other (please specify).....
 None

8. Do you have any concerns about the Warm Babies Project?

- Yes No

(please specify)

9. Do you have any other comments?

(please specify)

Warm Babies Survey

Consent for Community Energy Action to obtain Electrical Consumption Data

Signing this form will mean that Community Energy Action will be able to obtain historical electricity consumption data for your household. This is needed to determine if there has been any change in electricity use since the installation of energy efficiency measures as part of the Warm Babies Project.

Customer details:

Name: _____
Address: _____
Suburb: _____
City: _____
Telephone: _____

Supplier: _____
Previous supplier: _____ (if changed within the last year)
Meter number: _____
Customer number: _____
Account number: _____

I consent to the electrical consumption data for the above property to be made available to Community Energy Action for the Warm Babies Survey.

Signed: _____

Date: _____

APPENDIX 5: Raw Data: Referral Agency Questionnaire:

1. How did you hear about the Warm Babies Project?

CEA Presentation/ Meeting	9
Poster	1
Word of Mouth	6
CEA letter/ flyer	3
Promoted at work	1

2. What prompted you to make a referral(s)

Discuss house temperature with parents as a matter of routine	8
House felt cold/ damp when visited	13
Parent expressed concern about temperature of house	14
Parent expressed concern about high fuel bills / ability to pay for fuel	12
Child present regularly at clinic with cold/ respiratory problems	5
Child presented at clinic with more serious respiratory problems	4
Child had ongoing health problems	9

3. How did you find the referral process?

The referral form provided clear assessment criteria and questions	16
Passing the form onto CEA was easy	14
The response from CEA was prompt	10
Some questions on the referral form were confusing or difficult to answer	1
The referral form was time consuming	0
CEA were slow following up referrals.	1

4. How could the referral process be improved?

More information about the Warm Babies Project	8
Clearer criteria stating who qualifies for the Warm Babies project	9
Simpler referral form	0
More support from CEA	1
Feedback from CEA about the outcomes of referrals made	10

5. What do you feel are the benefits of home insulation measures?

Maintain house at a warmer	15
Maintain a more even temperature throughout the house	11
Reduce damp/ mould/ condensation	17
Healthier babies	18
Less anxious parents	9
Improved well being of the family as a whole	16
Reduced fuel bills	13

Comments:

Improved parents self esteem, as they are cared for so they can care better
Tenants more likely to stay
Neither of my referrals resulted in home insulation measures
Families who participated have been very happy with outcomes
Keeps landlords more up to date about expectation of rental accommodation
All the families I have referred have been very pleased with your service, esp. the curtains

6. Do you feel the Warm Babies Project meets the energy efficiency needs of your clients?

Yes 16

No 2

Comments:

Unfortunate where landlords won't commit

Landlord not prepared to pay

It is generally a good service.

Some clients have been concerned re increase in electricity bills

Great service for vulnerable families

7. How could the Warm Babies Project be improved?

Perhaps a greater advocacy role liaising between tenant, landlord and HNZ

HNZ homes don't get support and their houses can be just as cold

Find funds when landlords are unco-operative

I don't know that it can

Would be good to extend to HNZ accommodation

Having Housing New Zealand as part of the project

It would be great if, in cases where children's health was concerned, some insulation measures could be undertaken even if the landlord does not agree to contribute, although I realise this is funding dependent

Increase public awareness of the project, especially home owners. Have clients who have used your service and wish the info had been more easily accessible/ had heard more about the project

Happy with service

More access to curtains would be good

8. Do you have any concerns about the Warm Babies Project?

Yes 1 - That it is under-utilised and may be phased out

No 17

9. Do you have any other comments?

An excellent service

Thanks a lot, feedback from parents very positive

It's a great idea and great service

Thank you most sincerely to all staff for their kindness and understanding to our whanau who come to you for assistance

Even if little change could take place for my clients' homes due to rental/ HNZ - my clients found it good to get other ideas for reducing power bills.

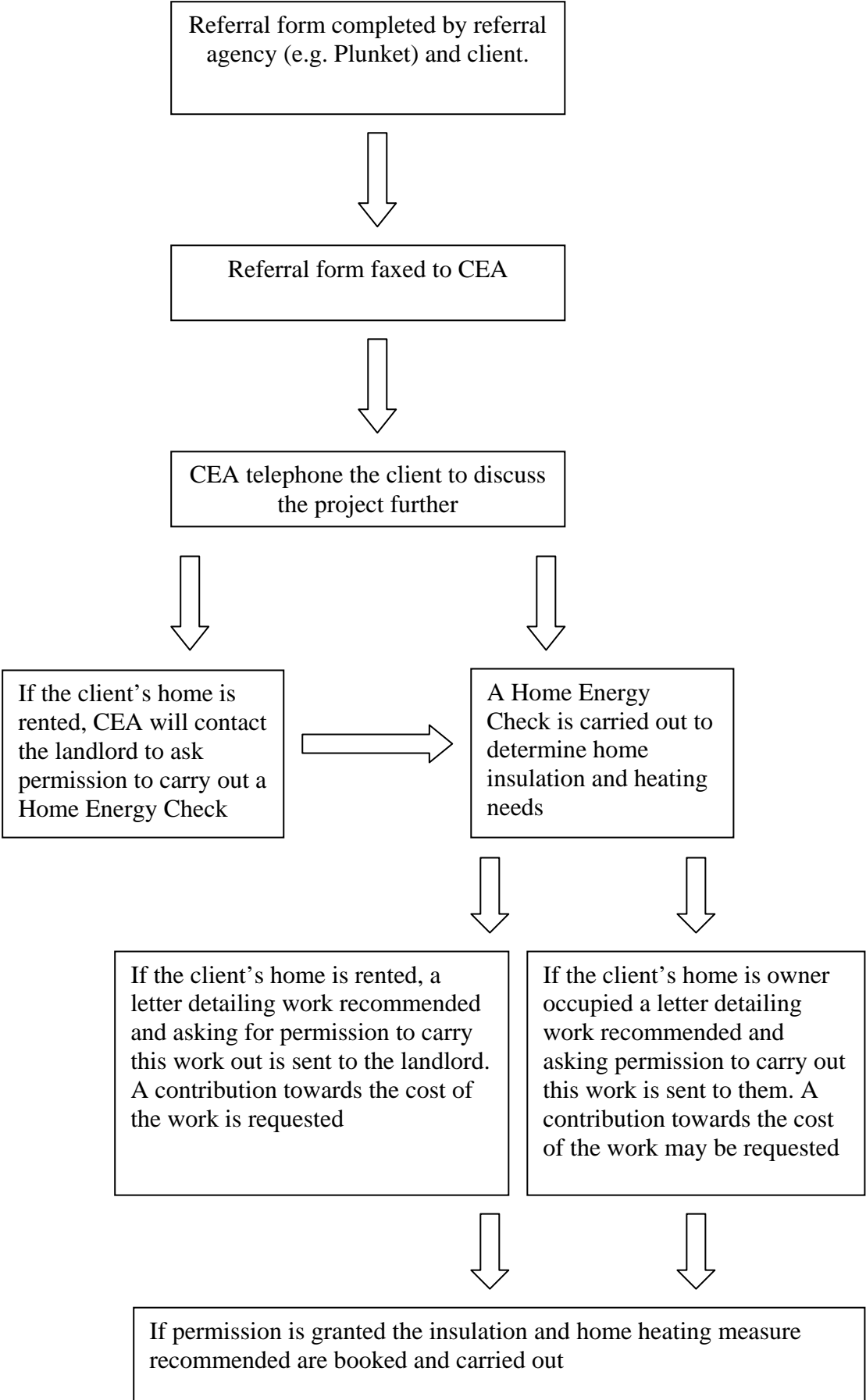
Thank-you, continue your good work, it helps families.

Very useful service, thank-you!

Appreciate this excellent service offered to my clients

Thank you for this service, many of our families have expressed their thanks also

APPENDIX 6: **Flow Chart of the Warm Babies Project Referral Process**



Warm Babies- Healthy Children Project

The Warm Babies Healthy Children Project can help people on low income with an infant under one year old who live in a cold damp house. Funding is also available for people who have a preschooler with health problems.

The project assists parents to make their home warm, dry and healthy. The aim of the project is to protect the health of your child.

The project provides a whole-house energy efficiency makeover, with many of the following being available:

- Ceiling insulation and top ups
 - Underfloor insulation
 - Hot water cylinder wraps
 - Adjustment of hot water thermostats
 - Draught-stopping of doors and windows
 - Curtains
 - Home heating (where necessary)
 - Energy efficiency advice
-
- The project is open to both homeowners and those in rental accommodation. Participation is entirely voluntary.
 - Community Energy Action will contact landlords with tenants permission. Landlords are asked to make a contribution for their rental properties. This contribution varies and will be agreed upon by the landlord and the project coordinator prior to any work being done.
 - Any cost to the houseowner can be negotiated. Inability to pay will not exclude someone from the project.
 - Acceptance on to the project is at the discretion of Community Energy Action Trust.
 - The project is funded with the support of Meridian Energy.

Referrals are made through Plunket Nurses and other Health Professionals. For further information call Russell Walker, Project Coordinator, on (03) 363 9566.

APPENDIX 8: Raw Data: Warm Babies users questions

1. Housing Tenure: *(from records)*

Owner Occupied 9
Private rented 7

2. Type of Housing: *(from records)*

Apartment 3
Attached House 1
Detached House 11

3. Age of house: *(from records?)*

Pre 1940 6
1940-1977 3
1978 onwards 1

4. How many people live in your household? *(from records)*

<5 years range from 1-3
6-16 years range from 1-2
>16 years range from 1-2

How many people live in your household? *(at time of survey)*

<5 years range from 1-3 (no change from records)
6-16 years range from 1-2 (no change from records)
>16 years range from 1-2 (no change from records)

5. Age of the youngest child:

from records newborn- 3 years
at time of survey 8 months – 4 years

6. How did you hear about the “Warm Babies Project”?

Referral agency 9
Word of mouth 4
CEA 1
Citizens’ Advice Bureau 1
City Council 1

7. Who made the referral? *(from records)*

Plunkett 7
Early Start 2
Te Puawaitango 1
Self Referral 5
Midwife 1

8. How did you feel about the referral process?

	1. Unsatisfactory	2. Below average	3. Average	4. Fair	5. Good	6. Excellent	Don't Know
First (telephone) contact			1	1	3	11	
Home Energy Check					4	11	1
Advice / feedback given					6	8	2
Follow up contact (telephone/ letter)				1	7	8	

9. How could the referral process be improved?

No suggestions given

10. What energy efficiency needs did you hope to meet through the warm babies project: (some info from records)

- (A) Warmer / more even household temperature 13
- (B) Less damp / condensation 7
- (C) Lower heating costs 7
- (D) Improve child's health (fewer GP/ hospital visits) 8
- (E) Other - less draughty / fixed plumbing problem 2

11. Which of the following measures were undertaken: (from records)

- Roof insulation 14
- Under floor insulation 11
- Polythene 1
- Draught proof doors 13
- Curtains in: Child(ren)'s room 3 Living room 5
- Install heater: heat pump / oil column heater 2
- Other- window seals, hot water cylinder, plumbing work 3

12. To what extent have your energy efficiency needs been met by the measures taken?

	1. Not at all	2. A little	3. To some extent	4. A fair amount	5. A lot	6. Completely
A (warmer)	1	1	2	1	3	8
B (less damp)			1	1	2	3
C (lower bills)	4	3	3		1	1
D (better health)	2		2	2	2	1
E (other)						

Comments:

Floor much warmer

13. Do you feel that the energy efficiency measures have improved your family's quality of life?

- No 0
- Yes 16

- Feel healthier /Children sick less often 2
- Fewer sick days off work/ school 0
- Less worried about children being too cold 10
- Able to spend more on essentials, other than heating 2
- Feel more settled / comfortable in the home 13
- Feel more positive 5
- Other: sleeping better / easier to heat house / house stays warm / doors don't rattle / washing dries quicker

14. Do you have any concerns about the energy efficiency measures carried out on your home?

- No 13
- Yes 3

Comments: not received curtains which were mentioned in HEC/ would like a second draught stopper/ still draughts underfloor (not enough room for foil)

15. How could we have been more helpful in carrying out the energy efficiency measures in your home?

non mentioned

16. Any other comments?

Waiting for CleanHeat to replace open fire / logburner

Curtains have made greatest difference

Helps maintain heat/ really noticed warmer floors

Mould and mildew gone from playroom/ bathroom

Switched calor gas to electricity when twins born. Reassuring having warm floor now babies are crawling

Switched wood to electricity therefore bills increased. Project exceeded expectations

Very pleased

Floorboards now drying out, done some work by self, really impressed

Wonderful - so rare to find a subsidised programme that makes a real difference

APPENDIX 9: Raw Data: Climate

Monthly Temperature Statistics from Station H32451 - CHRISTCHURCH AIRPORT

EXMAX: highest maximum temperature in degrees Celsius
AVMAX: mean daily maximum temperature in degrees Celsius
AVTEMP: mean temperature in degrees Celsius
AVMIN: mean daily minimum temperature in degrees Celsius
EXMIN: lowest minimum temperature in degrees Celsius

Year	Month	EXMAX	AVMAX	AVTEMP	AVMIN	EXMIN
2003	March	25.1	20.6	15.6	10.5	2.3
2003	April	21.7	15.2	10.2	5.2	-0.6
2003	May	25.2	15.5	9.7	4	-1.4
2003	June	20	14.4	8	1.7	-5.4
2003	July	16.5	10.4	4.8	-0.9	-6.4
2003	Aug	19.4	11.6	6.7	1.8	-3.9
2003	Sept	19.6	14.5	9.2	4	-3.5
2003	Oct	24.5	16.2	10.5	4.7	-1.6
2003	Nov	27.4	18.9	12.7	6.4	1.4
2003	Dec	30.4	22.7	16.4	10.2	3.3

Year	Month	EXMAX	AVMAX	AVTEMP	AVMIN	EXMIN
2004	March	30.4	19.9	14.1	8.4	0.4
2004	April	26.8	15.7	10.6	5.6	-2.7
2004	May	23.9	14.4	10	5.6	-1.6
2004	June	21.6	14.2	8.2	2.2	-4
2004	July	18.2	11	4.7	-1.6	-4.9
2004	Aug	18.7	10.4	6.2	2	-3.6
2004	Sept	22.7	15.1	8.8	2.5	-4.3
2004	Oct	25.8	15.8	10.8	5.8	0.1
2004	Nov	25.3	19.8	14	8.2	0.5
2004	Dec	27.1	18	13	7.9	3.3

APPENDIX 10: Raw Data: Power Use

2003

	August	September	October	November	December
Household A	1543	1115	1210	562	602
Household B	1045	713	634	524	590
Household C	4294 A* 1959 N**	270 A 270 N	1050 A 437 N	279 A 279 N	871 A 279 N
Household D	640	1460	640	774	660
Household E	94	570	570	589	348

* Anytime
** Night rate

2004

	August	September	October	November	December
Household A	1270	1406	1039	603	1024
Household B	613	727	702	649	728
Household C	1657 A 851 N	715 A 435 N	482 A 287 N	351 A 0 N	420 A 0 N
Household D	690	1273	690	1005	783
Household E	776	792	542	690	138

APPENDIX 11: Raw Data: Landlord's Questionnaire

1. How did you first hear about the Warm Babies Project?

Tenant 6
 Referral Agency 1
 CEA 1

2. How did you feel about the referral process?

	1. Unsatisfactory	2. Below average	3. Average	4. Fair	5. Good	6. Excellent	D/K
First (telephone) contact				2	3	3	
Home Energy Check				1	2	3	2
Information / feedback given				1	4	3	
Follow up contact (telephone/ letter)			1		3	4	

3. How could we improve the referral process?

It couldn't – good process, No problems, More feedback

4. Why did you agree to the Home Energy Check?

old house 2
 cold house 2
 damp house 1
 young family/ children 3
 to benefit tenant/ be a good landlord 4
 interested in ways to conserve energy 1

5. Did you agree to all the energy efficiency measures recommended in the Home Energy Check?

Yes 8
 No 0

6. Were you required to make a financial contribution?

Yes 8
 No 0
 Amount: \$200; \$1,125; \$500; \$100; \$252; \$180; \$500; \$300

7. What benefits have you derived from the Warm Babies Project?

Improvement in the condition of the property (less damp / drafts) 5
 Tenants remain longer in the property 4
 Improved relationship with the tenants 4
 It will be easier to rent out the property in the future 1
 Other: sensible thing to do, save money on power, save money on power, to satisfy the tenant

8. Do you have any concerns about the Warm Babies Project?

Yes 0
 No 8

9. Do you have any other comments?

Thought house was warm but knew doors needed draft-proofing
 Can notice the warmth, people very nice/ polite, quick process
 Happy to take part