2014 Rheumatic fever campaign evaluation

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January 2015

COMMISSIONING CONTACT'S COMMENTS

This Health Promotion Agency (HPA) commission was managed by Dr Darren Walton, Manager Research and Evaluation.

In winter (May to August) 2014, HPA and the Ministry of Health implemented a mass media campaign aimed at increasing awareness among parents and caregivers of at-risk children and young people about the causes and effects of rheumatic fever. The purpose of this research was to evaluate the campaign by assessing changes in rheumatic fever-related knowledge, attitudes, and behaviour following implementation of the campaign.

This evaluation comprised a baseline (pre-campaign) and follow-up (post-campaign) computer-assisted telephone interviewing (CATI) survey with parents and caregivers who had direct involvement in the healthcare decisions for a child in their care. Both within-subjects (same people interviewed at baseline and follow-up; referred to in this report as the 'Repeat group') and between-subjects (different people interviewed at follow-up; the 'Control group') samples were included to allow for the detection of any possible priming effect that might have occurred in the Repeat group. That is, where interviewing a person about rheumatic fever before the campaign launch increased their attention towards rheumatic-fever related information, thereby elevating the impact of the campaign among those respondents.

Although the research design allows for detecting priming effects, the need for simplicity and clarity in this report means that any priming effects are not presented or discussed. Instead, the analyses in this report combine the results for the Repeat and Control groups, which may have the effect of slightly over-stating the shift in awareness and/or behaviour associated with the campaign. However, as stated in the report, the results for the Repeat and Control groups were similar and any over-estimation of shifts following implementation of the campaign is therefore likely to be small.

Despite the limitations of the analysis approach, the findings in this report show that the 2014 rheumatic fever campaign reached the target audience effectively and that its implementation was associated with increases in awareness about the causes and effects of rheumatic fever, as well as the actions that can be taken to prevent it.

REVIEWED INTERNALLY BY

Hayley Guiney (Researcher) and Dr Darren Walton (Manager Research & Evaluation)

NOT EXTERNALLY REVIEWED

ACKNOWLEDGEMENTS

HPA would like to thank those respondents who took the time to participate in this research. Their responses will be used to help understand the impact of the campaign and contribute to the development of future rheumatic fever interventions.

DISCLAIMER

This research has been carried out by an independent party under contract or by instruction of HPA. The content should not be taken to imply or endorse HPA policy, strategy or health promotion activities.

Rheumatic Fever Survey Phase 2

Prepared for: Health Promotion Agency

Contents

1. Sponsors and Contractors

The survey was commissioned by the Health Promotion Agency and undertaken by TNS New Zealand Limited.

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Survey Contractor	TNS New Zealand Limited Level 3, 435 Khyber Pass Road Newmarket PO Box 6621, Wellesley Street Auckland 1141
Survey Sub-Contractor (Data Collection)	DigiPoll Limited P O Box 4059 Hamilton East Hamilton
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2. Background

The Health Promotion Agency (HPA) is a Crown entity and has a statutory primary objective to ensure that "New Zealanders experience less harm, injury, illness and disease".

The HPA is a Crown entity that leads and delivers innovative, high quality, and cost-effective programmes and activities that promote health, wellbeing and healthy lifestyles, and prevent disease, illness and injury. HPA also enables environments that support health and wellbeing and healthy lifestyles and reduce personal, social and economic harm.

As part of these responsibilities, HPA has developed a campaign to inform parents and caregivers about the risks of rheumatic fever and strategies to reduce the risk of developing the illness. HPA's programme of work in this area is part of the government's commitment to deliver a set of 10 better public services results, one of which is to support vulnerable children. Reducing the incidence of rheumatic fever is part of the broader objectives relating to support for vulnerable children.

The Ministry of Health and HPA implemented a Winter 2014 Rheumatic Fever Awareness Campaign which ran from May 2014 until August 2014. The campaign was aimed at raising awareness of the serious impact rheumatic fever can have on the lives of children, young people and their families. The campaign focussed on helping to increase knowledge of the link between sore throats and rheumatic fever, the serious heart damage that it can cause and the impact this has on at-risk families and communities. A range of resources were produced for the campaign including television commercials, radio and print advertisements, online videos and banners, and posters for bus shelter advertising and other outdoor settings.

The key messages promoted by the campaign were:

- A sore throat can lead to rheumatic fever if it's left untreated. Rheumatic fever is very serious and causes heart damage.
- Every time your child has a sore throat it could be serious. Don't ignore, take them to a doctor or nurse straight away to get it checked.
- We know it is a big ask to get your child checked every time they have a sore throat, but it is important. Do it for them.

These were supported by a number of calls to action including:

- Every time your child has a sore throat it could be serious – take them to a doctor or nurse straight away to get it checked. Ring Healthline on 0800 611 116 to find out where your nearest free sore throat clinic is.
- If you are prescribed a course of antibiotics, please take them for the whole 10 days or they might not work.

The purpose of this report is to evaluate the Winter 2014 Rheumatic Fever Awareness Campaign. The report details results from the post-campaign research, Phase 2, which was conducted between September and October 2014. The post-campaign research has been designed to measure changes in knowledge and attitudes towards rheumatic fever and the treatment of sore throats compared to the baseline position from the pre-campaign research, Phase 1, which was conducted in 2013. The effectiveness of the campaign has also been evaluated in terms of recall, message out-take and calls to action.

3. Summary

The evaluation comprises a baseline pre-campaign survey, Phase 1, followed by a post-campaign survey, Phase 2. The pre-campaign survey was conducted between 24th July and 22nd August 2013, prior to the campaign launch in 2014. The post-campaign survey was conducted between 8th September and 31st October 2014, being directly after the completion of the Winter 2014 Rheumatic Fever Awareness Campaign.

In Phase 2, a total of 800 responses were collected via telephone interviews. Respondents were included in the study if they were parents or caregivers of any child aged 4 to 18 years and who had at least some involvement in decisions about when to take a child in their care to the doctor or a health nurse. There were two key groups of respondents in Phase 2: 'Repeat' being those who had been interviewed at Phase 1 and 'Control' being new respondents who had not been interviewed at Phase 1. To achieve a similar respondent profile between the two groups, Repeat respondents were interviewed first and then for each Repeat respondent, a Control respondent was interviewed from within the same telephone exchange (it not being feasible to match respondents at an Area Unit level via telephone interviewing).

The following summarises the key out-takes from the study.

Winter 2014 Rheumatic Fever Awareness Campaign

Overall the 2014 campaign has been highly effective with high recall, strong message out-take and a call to action to take children with sore throats to be checked by a doctor or nurse.

Campaign Awareness and Exposure

The campaign has reached 76% of the target audience with two in three recalling television advertising about rheumatic fever on prompting and one in four recalling radio information. The television imagery being remembered is most commonly the twin brothers talking about rheumatic fever although there is moderate recall of the father and mother on prompting. Radio recall is a mix of people talking about experiences with rheumatic fever and health professionals on talkback radio. The television advertising is most likely to be recalled by the key target groups of Māori and Pacific people while radio is of high recall among Pacific people as well.

Healthcare and community centres have also been effective at supporting the campaign. One in three parents on average recall seeing or hearing rheumatic fever advertising via this channel, and specifically reaching those in more deprived areas and those of Māori or Pacific Island background.

Personal Relevance

Among those aware of the campaign, three in five (61%) agree that the campaign is talking to people like them. However, one in four (25%) feel that the campaign is not aimed at people like them while 13% are undecided. Perceived relevance is highest among those of Māori, Pacific Island or Asian ethnicity.

Message Understanding

The campaign is viewed by almost all (92%) as being easy to understand which is reflected in the message out take. The overwhelming message being recalled is to take children with a sore throat to the doctor (74% among those aware of the campaign) with lower numbers mentioning that sore throats are serious (26%) and that rheumatic fever can damage the heart and require surgery (30%).

Calls to Action

Overall, three in five parents aware of the campaign claim to have engaged with a healthcare channel as a direct result. Just over half (54%) took a child with a sore throat to a doctor or nurse. This was often coupled with talking to a healthcare professional about rheumatic fever in general or phoning to talk to a doctor or nurse about a child with a sore throat specifically. Just over one in ten (13%) called Healthline for information or advice.

In addition, two in five parents aware of the campaign talked to a family member or friend about rheumatic fever in general and a similar number advised taking a child with a sore throat to the doctor. One in five (17%) were prompted to search for further information about rheumatic fever on the internet.

Impact on Attitudes and Knowledge

Knowledge about rheumatic fever

There has been a strong increase in awareness that rheumatic fever is caused by a sore throat (from 45% in Phase 1 to 66% in Phase 2 among the Control group) and only one in ten are now unaware that rheumatic fever can lead to permanent heart damage. Many parents however remain unsure whether rheumatic fever can be reoccurring (with only 43% agreeing)

In terms of prevalence, there has been an increase in awareness that rheumatic fever is more common in Māori children than Pakeha (from 41% in Phase 1 to 55% in Phase 2). Furthermore, awareness is highest among Māori parents. Similarly, there has also been an increase in awareness that rheumatic fever is more common in Pacific people than Māori (from 19% in Phase 1 to 28% in Phase 2). However, many parents remain unsure and three in five Pacific people in particular remain unaware of the heightened risk.

Knowledge about the treatment of sore throats

In terms of checking sore throats, there is increased agreement that all sore throats in school aged children should be checked by a doctor or nurse straight away (from 47% in Phase 1 to 55% in Phase 2). However, two in five parents still disagree and 7% are undecided. Furthermore, although slightly lower than in Phase 1, 30% of parents still think that if a child has a sore throat but no other symptoms they do not need to see a doctor at all. Although improving since Phase 1, these attitudes are most prevalent among those living in low deprivation areas and of NZ European background. Parents living in high deprivation areas and Māori and Pacific people specifically are most likely to agree that all sore throats should be checked even if there are no other symptoms.

There has been a slight lift in awareness that some schools will swab children with sore throats for the infection that leads to rheumatic fever (from 27% to 33%), however many parents remain uncertain or disagree. Parents living in high deprivation areas and Māori and Pacific people have the highest awareness that some schools swab children's throats. Similarly, although improving since Phase 1, only one in two parents agree that getting a child's sore throat checked by a nurse is usually free. Unsurprisingly, agreement is highest among those living in high deprivation areas but even among this group, one in three are unaware.

In terms of treatment, most parents remain aware that giving a child Pamol will not prevent rheumatic fever from developing (increasing from 79% in Phase 1 to 87% in Phase 2). Although improved on Phase 1, only three in five are aware that rheumatic fever can be treated with a doctor by antibiotics with the remaining parents typically uncertain rather than disagreeing. Positively almost all parents now disagree that a child being treated for a sore throat can stop taking their medicine when they feel well (from 82% in Phase 1 to 89% in Phase 2).

Implications for future campaigns

Knowledge of rheumatic fever has increased following implementation of the 2014 campaign and it has been an effective call to action for many to get children's sore throats checked. However, many parents remain unconvinced of the urgency of having sore throats checked, particularly those from lower deprivation areas, and there is still room to improve attitudes among those from higher deprivation areas.

The target audience knows that rheumatic fever is a serious disease that can lead to permanent heart damage.

Key areas of focus in future campaigns should be:

- Rheumatic fever is caused by sore throats and as such all sore throats need to be considered potentially serious
- All sore throats in children should be checked immediately
- Rheumatic fever is treatable if caught in time

4. Methodology

4.1 Methodology

4.1.1 Overview

The study is comprised of a baseline pre-campaign survey, Phase 1, followed by a post-campaign survey, Phase 2. The pre-campaign survey was conducted in July and August 2013, prior to the campaign launch in 2014. The post-campaign survey was conducted in September and October 2014, being directly after the completion of the Winter 2014 Rheumatic Fever Awareness Campaign.

Both surveys were undertaken by telephone using computer assisted telephone interviewing (CATI). Respondents were included in the study if they were parents or caregivers of any child aged 4 to 18 years of age and who had at least some involvement in decisions about when to take a child in their care to the doctor or a health nurse.

A total of 888 responses were collected during Phase 1 while a total of 800 responses were collected during Phase 2. There were two key groups of respondents in Phase 2: 'Repeat' being those who had been interviewed at Phase 1 and 'Control' being new respondents who had not been interviewed at Phase 1. A total of 375 responses were collected for Repeat group at Phase 2 and a total of 425 responses were collected for the Control group.

The inclusion of a Control group at Phase 2 was due to awareness and knowledge about rheumatic fever among the Repeat sample potentially being influenced from participating in the initial Phase 1 survey. Therefore, results at Phase 2 based on a repeat sample only may not have been representative of the general population. The inclusion of a Control group allowed for results between the two groups to be compared and for results to be reported separately if required.

To achieve a similar respondent profile between the two groups at Phase 2, Repeat respondents were interviewed first and then for each Repeat respondent, a Control respondent was interviewed from within the same telephone exchange (it not being feasible to match respondents at an Area Unit level via telephone interviewing).

4.1.2 Recap of Phase I Methodology

The Phase 1 survey was undertaken by telephone using computer assisted telephone interviewing (CATI). The survey was conducted between 24th July and 22nd August 2013. Respondent selection was based on a stratification using area units, this being the smallest geographical area that is able to be targeted using random digit dialling. Post data collection, address information relating to individual respondents was used to allocate the applicable Deprivation Index (D.I.) value at the meshblock level. Areas of high deprivation were over sampled to achieve a robust sample of the groups most at risk of developing rheumatic fever.

The survey design was based on capturing information relating to families and from those who have direct involvement in healthcare decisions for children within their care, and as such it was not strictly designed as a nationally representative survey. Prior to analysis, data was weighted to adjust for the oversampling within high deprivation areas so to be representative by the Deprivation Index and by region.

4.1.3 Phase 2 Methodology

Based on requirements of the Health Promotion Agency, the Phase II survey included two respondent groups as follows:

- Repeat: Respondents who completed the Phase I survey in 2013
- Control: Respondents who did not participate in Phase I

It was proposed that the 800 interviews would be distributed across the two sample groups as shown in Table 1.

Table 1: Proposed sample structure for Repeat and Control groups at Phase 2

Sample Group	Number of Surveys
Repeat	N = 400
Control	N = 400
Total	N = 800

The interviewing approach was developed based on the request of the Health Promotion Agency for the Control sample to match the Repeat sample as closely as could be achieved using a Computer Aided Telephone Interviewing (CATI) approach.

A face-to-face interviewing approach would have allowed for each new contact to be interviewed within the same meshblock of a Repeat respondent, providing a matched sample at the Deprivation Index score level based on meshblocks. The limitation of CATI interviewing was that households could only be matched at a telephone exchange level. Therefore, although each new contact was interviewed within the same telephone exchange of a Repeat respondent, they may have had a differing Deprivation Index score. Therefore the Deprivation Index score profile of the new Control sample could not be perfectly matched to the profile of the Repeat sample.

The methodology approach of Phase 2 was as follows:

1) Target quotas were set for the Repeat sample in terms of D.I. group, area and ethnicity. The quotas were based on the target profile of respondents developed at Phase I, being nationally representative, rather than the final profile of respondents achieved based on their meshblock level strata assignment.

2) The initial fieldwork phase was the 400 surveys among Repeats. Only those who gave permission during the 2013 survey to be re-contacted, were approached to be interviewed in Phase 2. Where there was inadequate available sample to fill a quota group at the D.I. level in terms of either area or ethnicity, replacement interviews were made for that strata group within other areas or ethnicities. Therefore the final profile of Repeats in terms of area and ethnicity for each Deprivation Index strata did not match target quotas.

3) The second fieldwork phase was the 400 surveys among new respondents. For each interview conducted among the Repeat sample, there was a corresponding interview with a new respondent. As it was not possible to target phone numbers for each new respondent based on the area unit of the Repeat respondent, phone numbers were matched to the corresponding telephone exchange.

4.2 Questionnaire design and testing

The Phase 2 questionnaire was based on the initial Phase 1 questionnaire. At Phase 1, the questionnaire was provided in a draft format by the Ministry of Health and the Health Promotion Agency. In preparation for interviewing, the questionnaire was initially reviewed by TNS and subjected to a series of cognitive tests with a selection of those who represent the primary audience for the study. Based on feedback from the cognitive interviews the questionnaire was further refined. A number of further changes were made to the questionnaire following a pilot phase.

At Phase 2, additional questions to evaluate the 2014 campaign were provided in a draft format by the Health Promotion Agency and reviewed by TNS. As the questionnaire was primarily based on the Phase 1 survey, further cognitive testing was not applied at Phase 2.

The pilot phase involved conducting 32 interviews for the purpose of establishing and verifying the CATI script, verifying the interview duration, verifying that the questionnaire logic was being correctly applied, and as a final check to ensure that were are no obvious issues with respondents being able to formulate answers.

The pilot was conducted by DigiPoll, a specialist CATI provider based in Hamilton who was contracted by TNS to complete the fieldwork for the rheumatic fever study in both Phase 1 and Phase 2. Interviews were conducted between 8th and 9th September 2014. All pilot interviews were conducted among the Repeat group only who had also participated in Phase 1.

The following were the key findings from the pilot phase:

- The interview duration averaged 21 minutes.
- Most respondents contacted were willing to do the survey.
- Not all respondents could be recontacted as some phone numbers had been disconnected. Where available, mobile phone numbers provided at Phase 1 were used to try to recontact these respondents.
- There were no reported issues with the new questions added to the survey and respondents finding them unclear or difficult to answer.

4.3 Sample Design

At Phase 1, area units were grouped into three sets for sampling based on Deprivation Index scores as follows:

- Low: Deprivation Index scores of 1 to 4
- Medium: Deprivation Index scores of 5 to 7
- High: Deprivation Index scores to 8 to 10

Some areas of known high deprivation were over-sampled, these being Tairawhiti, South Auckland, Porirua and Northland.

The sample structure adopted in both Phase 1 and Phase 2 followed the general structure detailed in Table 2.

Table 2: Strata groups at Phase 1 and Phase 2

Group Description	Phase 1 – Total	Phase 2 – Total	Phase 2 – Repeat	Phase 2 - Control
Low (1 to 4 Deprivation Index Scores)	N = 200	N = 200	N = 100	N = 100
Medium (5 to 7 Deprivation Index Scores)	N = 200	N = 200	N = 100	N = 100
High / Oversample (8 to 10 Deprivation Index Scores)	N = 400	N = 400	N = 200	N = 200
Total	N = 800	N = 800	N = 400	N = 400

At Phase 1, further quotas were applied to each stratum in terms of both area and ethnicity. These were based on the profile for each group from the 2006 Census and were applied to ensure that the sample was broadly representative of the population within each group.

The quotas for the Repeat sample in Phase 2 were the target quotas at Phase 1 for each stratum readjusted for the total interviews to be achieved. These quotas are shown in Table 3. The table also shows the available sample for each quota cell. The available sample is the number of respondents from the Phase 1 survey that indicated they could be re-contacted for a second survey. In total, 96% of respondents at Phase 1 agreed that they could be re-contacted.

Table 3: Quota targets and available sample at Phase 2

	Total		Low D.I		Medium D.I.		High D.I.	
	Target	Sample	Target	Sample	Target	Sample	Target	Sample
Total Interviews	400	854	100	299	100	218	200	337
Area:								
Auckland	143	319	35	107	28	70	80	142
Wellington	40	70	13	27	12	17	15	26
Other North Island	145	313	22	81	35	84	88	148
Christchurch	40	94	17	51	13	27	10	16
Other South Island	32	58	13	33	12	20	7	5
Ethnicity (Minimum targets)								
Māori	70	211	-	32	12	44	58	135
Pacific people	52	82	-	7	5	13	47	62

With the exception of the High D.I group within the South Island, the available sample exceeded the target for all quota groups. However, the feasibility of reaching the target quotas was also dependent on aspects such of the availability of the previous respondents for re-contact, their willingness to participate in a second survey and their still being at the same address and with the same contact numbers. It was anticipated that replacement interviews would therefore be required within some of the quota groups.

When replacement interviews were required because the available sample did not allow for a quota group to be met, the following criteria were applied:

- Replacement interviews were foremost re-allocated to ensure that the target quotas at the overall strata D.I. level were achieved
- Secondary allocation of replacement interviews were to achieve overall ethnicity targets at the total sample level
- The final allocation of replacement interviews was interviewing within other areas

4.4 Call Outcomes

A total of 753 available contacts were called for the Repeat group at Phase 2. Of these, 260 were not contactable and 125 were screened out as not eligible. Of the ineligible, 82 phone numbers were no longer in service and 43 no longer qualified, being a mix of the parent having moved away with no contacting details or no longer caring for children within the specified age groups. Of the 468 numbers that we reached, 375 provided a response, this representing a success rate of 80%.

Although the target for the Repeat interviews was n=400, it was not possible to meet the quota for the high D.I. group. The decision was made to interview an additional n=25 Control respondents from high D.I. areas rather than reallocating these interviews to Repeat respondents from either low or medium D.I. areas.

A total of 11,251 calls were made at Phase 1. Of these 4,978 were not contactable and 4.708 were screened out as not eligible. Overall, 1,565 numbers were reached who met the qualifying criteria in order to achieve the target of 425 interviews, this representing a success rate of 27%.

Table 4: Call Outcomes for the Repeat and Control group at Phase 2

	Repeat	Control
Uncontactable		
No answer	79	3502
Answer machine	33	1305
Appointments / Contact unavailable	140	N/A
Illness / hearing / language barrier	8	171
Total uncontactable	260	4978
Not Eligible		
- Business number	0	767
- Not qualifying	43	2867
- Number not in service	82	1074
Total not eligible	125	4708
Outcomes		
- Refused	93	1140
- Completed	375	425
Total Outcomes	468	1565

4.5 Data weighting and Analysis

Data Weighting

At Phase 1, data was weighted prior to analysis based on Deprivation Index at a meshblock level and based on area. To provide consistency between Phase 1 and Phase 2, a similar weighting structure was applied at Phase 2.

During interviewing at Phase 2, street addresses were collected for all new Control respondents. Repeat respondents were also asked if they were still living at the same address as at Phase 1 and new street addresses were collected for those who had moved.

Deprivation Index scores were then allocated to each respondent at the meshblock level for their current residential address. Although Phase 1 allocation was based on the D.I. score assigned to each meshblock by the 2006 census, Phase 2 allocation was based on the scores assigned by the 2013 census.

Each value on the 10 point Deprivation Index indicates the 10 percent of meshblocks of a similar deprivation level. The survey data was weighted to be representative of this distribution among both the Repeat and Control groups. The result of the weighting is shown in Table 5 alongside the unweighted sample count within each cell.

Table 5: Weighted proportions and unweighted counts by Deprivation Index

	Total Sample (Phase 2)		Repeat Group		Control Group	
D.I. Score	Weighted D.I. %	Unweighted Count	Weighted D.I. %	Unweighted Count	Weighted D.I. %	Unweighted Count
1	10%	69	5%	31	5%	38
2	10%	52	5%	24	5%	28
3	10%	59	5%	27	5%	32
4	10%	50	5%	18	5%	32
5	10%	72	5%	37	5%	35
6	10%	64	5%	37	5%	27
7	10%	75	5%	31	5%	44
8	10%	73	5%	39	5%	34
9	10%	110	5%	55	5%	55
10	10%	176	5%	76	5%	100
Total	100%	800	50%	375	50%	425

The data was further weighted so that the general area profile of each strata group of High, Medium and Low D.I. households was broadly representative of that group.

Prioritised Ethnicity

The standard ethnicity question for the health and disability sector was used within the questionnaire with respondents being permitted to associate with multiple ethnicities. The exact form of the survey question was as defined in Section 3.3 of the 'Ethnicity Data Protocols for the Health and Disability Sector – 2004'

Responses to ethnicity were then coded into a prioritised ethnicity variable using the 'Level 1' codes in paragraph 4.3 of the above document: Māori, Pacific Island, Asian, Other ethnic groups. Prioritisation followed the order defined in 'Table 2 Prioritisation for Level 2' of paragraph 4.3.

Respondents providing their ethnicity as other were recoded into Level 1 codes according to the classification structure provided within the Appendix of the 'Ethnicity Data Protocols for the Health and Disability Sector – 2004'. For example, a respondent providing their ethnicity as 'British' was recoded as Level 3 code '121' and therefore, Level 1 code 1 'European'.

Phase 2 Analysis

Comparison of the results at Phase 2 for the Repeat and Control groups indicated similar responses for most questions. Therefore, results for Phase 2 are based on the combined groups of Repeat and Control respondents unless otherwise stated.

Statistical Analysis

All statistical analysis has been conducted at the 95% Confidence Level for the following comparisons:

- Trend analysis between Phase 1 and Phase 2 results
- Comparisons between segments of interest such as prioritised ethnicity and D.I. score

4.6 Respondent Profiles

The weighted respondent profiles at Phase 1 and Phase 2 are shown in Table 6.

Table 6: Respondent profiles

	Total		High D.I.		Medium D.I.		Low D.I.	
	Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2
Gender								
Male	23%	22%	19%	16%	23%	21%	25%	27%
Female	77%	78%	81%	84%	77%	79%	75%	73%
Age								
30 years and under	7%	6%	12%	9%	7%	6%	4%	3%
31 to 40 years	33%	29%	37%	29%	33%	27%	29%	30%
41 to 50 years	46%	47%	34%	43%	47%	48%	55%	50%
Over 50 years	13%	18%	16%	18%	13%	19%	12%	17%
Area								
Auckland	33%	33%	32%	32%	29%	29%	36%	36%
Wellington	11%	11%	9%	9%	12%	12%	12%	12%
Other North Island	32%	32%	43%	43%	33%	33%	22%	22%
Christchurch	13%	13%	8%	8%	13%	13%	17%	17%
Other South Island	12%	12%	8%	8%	13%	13%	13%	13%

	Total		High D.I.		Medium D.I.		Low D.I.	
	Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2
Involvement in decisions to take child to a health care provider								
Primary decision maker	68%	64%	73%	61%	65%	63%	68%	60%
Joint decision maker	30%	34%	25%	37%	33%	36%	31%	38%
Some or no involvement	2%	2%	3%	2%	2%	1%	1%	2%
Prioritised ethnicity								
European	56%	64%	33%	40%	61%	71%	68%	77%
Māori	21%	19%	37%	35%	18%	18%	11%	9%
Pacific Islander	7%	7%	15%	17%	5%	3%	3%	3%
Asian	6%	9%	6%	7%	8%	8%	6%	10%
Other	10%	1%	9%	1%	7%	1%	13%	1%
Country of birth								
New Zealand	75%	75%	76%	75%	76%	75%	74%	74%
Australia	1%	1%	1%	0%	0%	2%	1%	1%
United Kingdom	4%	5%	2%	4%	3%	8%	7%	4%
Samoa	2%	1%	3%	4%	1%	0%	1%	0%
Cook Islands	1%	1%	1%	3%	1%	0%	0%	0%
Tonga	1%	1%	2%	2%	0%	0%	0%	0%
Niue	0%	0%	1%	1%	0%	0%	0%	0%
China	1%	1%	0%	1%	1%	0%	1%	1%
India	2%	2%	2%	1%	3%	1%	2%	3%
Other	13%	13%	11%	10%	14%	12%	14%	16%
Employment status								
Full time employment	50%	50%	38%	45%	54%	47%	55%	56%
Part time employment	27%	27%	28%	23%	25%	29%	28%	28%
Not in paid work but looking for a job	5%	7%	12%	12%	4%	5%	1%	5%
Homemaker / caregiver	11%	11%	14%	13%	11%	12%	12%	10%
Student	2%	1%	3%	0%	2%	3%	1%	0%
Retired	1%	1%	1%	2%	1%	1%	1%	0%
Receiving income support	1%	1%	2%	2%	0%	0%	0%	0%
Illness preventing employment	1%	1%	1%	2%	1%	2%	0%	0%
Don’t know	1%	1%	1%	1%	1%	1%	1%	1%
Household income								
Less than $20,000	6%	4%	15%	8%	5%	2%	0%	2%
$20,000-$39,999	12%	9%	18%	17%	13%	12%	7%	2%
$40,000-$79,999	24%	24%	26%	29%	26%	25%	22%	19%
$80,000-$119,999	27%	26%	19%	20%	29%	29%	32%	29%
$120,000 plus	19%	24%	19%	9%	17%	20%	29%	39%
Don’t know / Refused	10%	13%	14%	18%	9%	12%	9%	9%

	Total		High D.I.		Medium D.I.		Low D.I.	
	Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2
Have a regular GP								
Yes	97%	96%	95%	95%	98%	97%	97%	96%
No	3%	4%	5%	5%	2%	3%	2%	4%
Don't know	0%	0%	0%	0%	0%	0%	1%	0%
Enrolled in other type of health service								
Yes	8%	8%	14%	13%	6%	5%	5%	7%
No	92%	91%	86%	86%	94%	94%	95%	93%
Don't know	0%	0%	0%	0%	0%	1%	0%	0%
Have a Community Service Card								
Yes	1%	1%	2%	2%	0%	0%	0%	0%
No	99%	99%	98%	98%	100%	100%	100%	100%
Household member in health-related occupation								
Yes	17%	14%	16%	13%	16%	11%	20%	18%
No	82%	85%	84%	86%	84%	89%	80%	82%
Don't know	0%	0%	0%	1%	0%	0%	0%	0%
Base: (unweighted)	*888*	*800*	*359*	*359*	*223*	*211*	*306*	*230*

5. Detailed Results

5.1 Campaign Evaluation

5.1.1 Places recall seeing or hearing about rheumatic fever

Although 92% of parents had heard of rheumatic fever before at Phase 1, awareness has further lifted in Phase 2 with only 3% now unaware. Awareness levels remain lowest among Asian households at 79%, although this is an increase on the level of awareness at Phase 1 which was only 61% for this group. Awareness by deprivation group and ethnicity are summarised in Table 7.

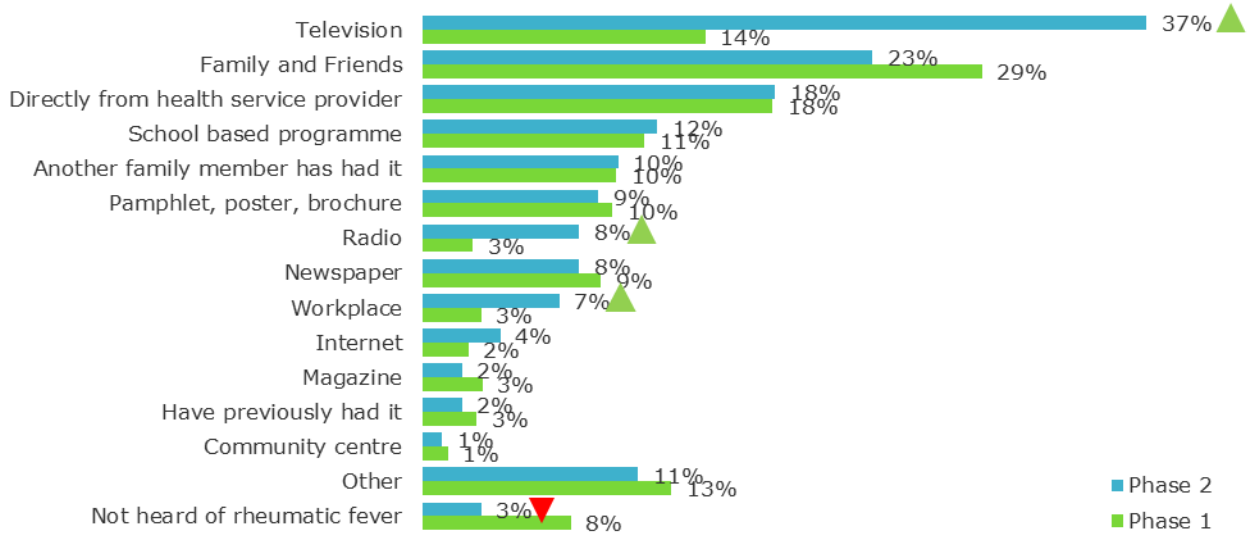
Table 7: Aware of rheumatic fever by D.I group and ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
Aware of rheumatic fever	97%	97%	97%	96%	100%▲	94%	79%▼	99%▲

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

When asked where they have seen or heard about rheumatic fever, television has increased significantly to 37% and now surpasses word of mouth as the most common means (at 23%). Secondary sources remain directly from a health service provider, school based programmes, pamphlets / posters / brochures and a family member having rheumatic fever previously. Although only recalled by 8%, radio has also increased significantly from 3% in Phase 1. The ways of finding out about rheumatic fever at Phase 1 and at Phase 2 are illustrated in Chart 1.

Chart 1: Ways heard about rheumatic fever at Phase 1 and Phase 2



▲/▼ Significantly higher / lower than Phase 1 at 95% Confidence Level

Word of mouth is most commonly recalled by those living in high D.I. areas. School based programmes are also more likely to be a means of hearing about rheumatic fever among those living in high D.I. areas and among Māori and Pacific people. The five most common ways of hearing about rheumatic fever are summarised in Table 8 by D.I. level and ethnicity.

Table 8: Ways heard about rheumatic fever by D.I group and ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
Television	37%	30%▼	38%	41%▲	33%	35%	20%▼	41%▲
Family and Friends	23%	29%▲	22%	20%	27%	33%	14%	22%
Directly from health service provider	18%	22%	14%▼	19%	22%	22%	13%	17%
School based programme	12%	16%▲	11%	10%	19%▲	21%▲	11%	10%▼
Another family member has had it	10%	14%▲	12%	5%▼	20%▲	15%	6%	7%▼

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

5.1.2 Places recall seeing or hearing about rheumatic fever advertising

Respondents at Phase 2 were asked whether they could recall seeing or hearing any advertising about rheumatic fever over the winter months. Overall 69% of parents could recall some form of advertising. Highest recall is among those living in high D.I. areas (79%) and Pacific people (81%).

Television advertising is most commonly remembered at 56% and is particularly high among Pacific people (73%). Health service providers are the second most common place to recall seeing advertising at 30%. Of note, this is double the level among those living in high D.I. areas (47%) than those living in medium or low D.I. areas. Māori and Pacific people are the most likely to recall advertising at health services providers.

Recall levels are more moderate for radio advertising, outdoors at bus stops or on posters and for billboards (at 16%, 10% and 4% respectively). All are most likely to be recalled by Pacific people. Only 6% recalled magazine advertising and 4% recalled seeing advertising online.

Places where parents recalled seeing or hearing rheumatic fever advertising is summarised in Table 9 by D.I. level and ethnicity.

Table 9 Places recall seeing or hearing rheumatic fever advertising by D.I group and ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
On TV	56%	61%	54%	54%	61%	73%▲	33%▼	56%
At a health services provider	30%	47%▲	22%▼	23%▼	41%▲	53%▲	28%	24%▼
On the radio	16%	18%	13%	17%	17%	32%▲	16%	14%▼
Outdoors at bus stops or on posters	10%	12%	6%▼	12%	11%	29%▲	12%	7%▼
In a magazine	6%	9%▲	4%	5%	8%	13%▲	5%	5%▼
On the internet	5%	7%	4%	5%	8%	10%	7%	4%▼
Outdoors on billboards	4%	5%	3%	3%	6%	11%▲	4%	2%▼
Don't recall any advertising	31%	21%▼	37%▲	35%	25%	19%▼	45%▲	32%

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

Messages recalled

On being asked what they remember from the advertising, the main unprompted recall is of the two twin brothers talking about rheumatic fever (40%) with few mentioning the father (2%) or mother (4%) talking. Other mentions are of the messages that rheumatic fever can damage the heart and require surgery and that you should take children with a sore throat to the doctor.

5.1.3 Prompted awareness of TV and radio advertisements

Respondents were provided with a brief description of the television and radio advertising and asked if they recalled seeing or hearing each one. Overall almost two in three (64%) parents remember seeing at least one of the television ads. Given that all versions of the ad include the twin brothers, it is not surprising that highest recall is for the ad featuring two brothers talking about rheumatic fever (53%) followed by a boy talking about having rheumatic fever (38%). Recall of the ads featuring the father talking and the mother talking is more moderate at 27% and 20% respectively.

Overall, radio advertising is remembered by almost one in four (22%). Radio advertising featuring people talking about their own or their child's experiences of rheumatic fever is most likely to be remembered at 16%. Talkback radio featuring health professionals talking about rheumatic fever is recalled by 11%.

The campaign was particularly effective at reaching the core target of Māori and Pacific people and those from high D.I areas. Both groups have high recall of the television advertising although the radio advertising is more likely to be recalled by Pacific people. NZ Europeans have average recall of the television advertising but are the least likely to recall any radio advertising. In contrast, recall of the television advertising is relatively low among Asian households at only 35% and this group are as likely to recall radio advertising, with the talkback radio featuring healthcare professionals being particularly noticed (at 26%).

Prompted awareness of the specific television and radio advertisements are summarised in Table 10 by D.I. level and ethnicity.

Table 10: Prompted awareness of television and radio advertising by D.I group and prioritised ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
Any TV advertising	**64%**	**70%▲**	**60%**	**61%**	**73%▲**	**79%▲**	**35%▼**	**63%**
Two twin brothers talking	53%	59%▲	50%	51%	62%▲	69%▲	21%▼	53%
A boy talking about having rheumatic fever	38%	44%▲	39%	33%▼	42%	52%▲	15%▼	39%
A father talking about his son	27%	32%	28%	23%▼	26%	50%▲	10%▼	28%
A mother talking about her son	20%	25%▲	19%	17%	25%	50%▲	10%▼	17%▼
Any radio advertising	**22%**	**24%**	**19%**	**23%**	**23%**	**40%▲**	**30%**	**18%▼**
People talking about their own or their child's experiences	16%	17%	14%	15%	13%	33%▲	20%	14%▼
Health professionals on talkback Radio	11%	15%▲	7%▼	11%	17%▲	21%▲	26%▲	6%▼

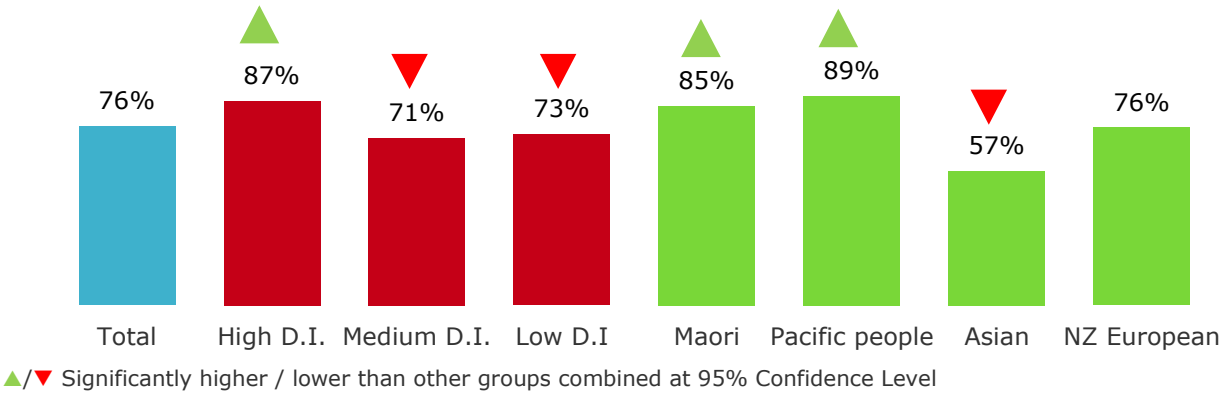
▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

5.1.4 Overall campaign reach

Combining general campaign recall with the prompted television and radio advertising recall, overall three in four parents remember seeing or hearing the campaign. Recall is highest among those living in high D.I. areas and Māori and Pacific people.

Overall rheumatic fever campaign recall by D.I. group and prioritised ethnicity is shown in Chart 2.

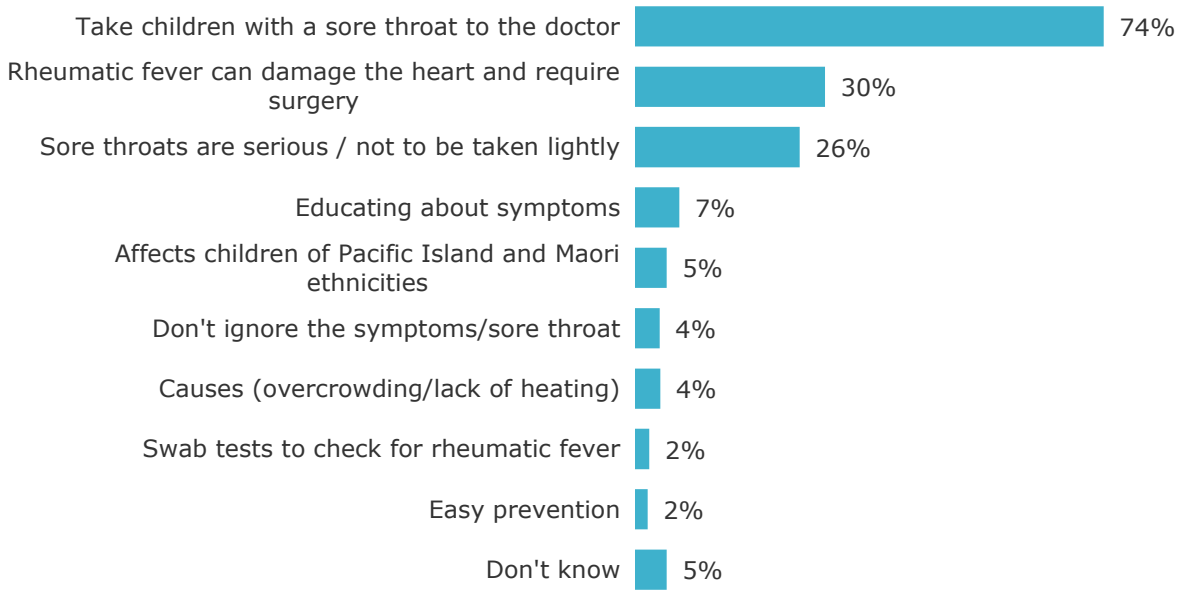
Chart 2: Total rheumatic fever campaign recall



5.1.5 Message out-take

Respondents aware of the campaign were asked what they thought were the main messages of the advertising. Message out-take is overwhelmingly one of taking children with a sore throat to the doctor which is mentioned by three in four (74%). This is supported by the messages that rheumatic fever can damage the heart and requires surgery (mentioned by 30%) and that sore throats are serious (mentioned by 26%). Lower numbers recalled that it predominantly affects children of Māori and Pacific people ethnicity, the causes (such as overcrowding and lack of heating) and that swab tests can check for rheumatic fever. The main messages recalled by those aware of the campaign are shown in Chart 3.

Chart 3: Main messages of the advertising campaign (among those aware of the campaign)



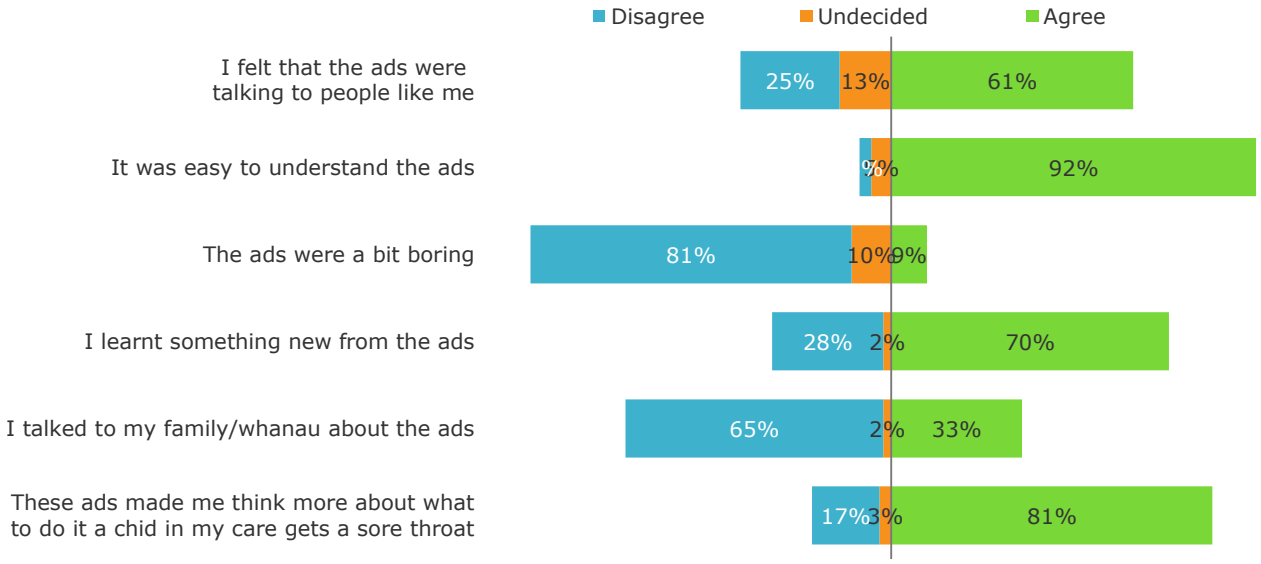
Following are examples of the messages recalled by respondents:

"Sore throats, go to the doctors, get swabbed, get medical advice, ring the health line."
"Go to the doctors and don't be scared to go. If it's nothing that's ok, but it could be something more serious."
"If a child has a sore throat, it's best to take them to the doctors. Left untreated it will lead to Rheumatic fever."
"Do something and quickly. It can be fatal if it's ignored or left for a couple of days."
"Basically any kind of sore throat or anything bothering you, need to take to the doctor straight away because it can become serious if you leave it."
"Get sore throats checked as these may lead to heart conditions that would affect them for the rest of their lives."
"Early detection, if it is a sore throat then get it checked straight away or there could be dire consequences."
"It's a lot more common than I thought. They suggest that all sore throats should be checked. It's a lot more serious condition than I thought."

5.1.6 Relevance and engagement

The majority of parents aware of the campaign agree that it was easy to understand the ads (92%). Although three in five agree that the campaign was talking to people like them, one in four disagree with the remainder unsure. Despite this, most parents agree that they have learnt something new from the ads (70%) and were prompted to think more about what to do if a child in their care got a sore throat (81%). One in three were also prompted to discuss the ads with their family or whanau. Attitudes towards the campaign are shown in Chart 4.

Chart 4: Campaign relevance and engagement (among those aware of the campaign)



Looking at differences between groups, NZ Europeans are the least likely to feel that the campaign was talking to people like them. They are also the least likely to agree that they learnt something new from the ads, thought about what to do if a child in their care got a sore throat or discussed the ads with family. Although being highly effective among Māori, the groups with which the campaign most strongly resonated are Pacific people and Asians. Attitudes towards the campaign are summarised in Table 11 by D.I. group and prioritised ethnicity.

Table 11: Attitudes towards the campaign by D.I group and prioritised ethnicity (among those aware of the campaign)

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
Ads were talking to me or people like me	61%	65%	62%	57%	69%▲	77%▲	80%▲	54%▼
It was easy to understand the ads	92%	91%	90%	94%	85%▼	96%	94%	93%
The ads were a bit boring	9%	9%	10%	8%	11%	10%	8%	8%
I learnt something new	70%	70%	70%	70%	71%	87%▲	93%▲	65%▼
I talked to my friends or family/whanau	33%	40%▲	30%	28%▼	49%▲	55%▲	58%▲	22%▼
Thought about what to do if a child in my care gets a sore throat	81%	82%	82%	78%	82%	90%	96%▲	77%▼

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

5.2 Knowledge about Rheumatic Fever

5.2.1 Cause of rheumatic fever

Positively, there has been a sharp increase in awareness that rheumatic fever is caused by a sore throat from 45% in Phase 1 to 66% in Phase 2 among the Control group, being even higher among the Repeat group at 76%. The increase in awareness has been statistically significant among all D.I. groups and all prioritised ethnicity groups. However, with 4% disagreeing and with 22% still unsure, there remains the need to further raise awareness of the link between sore throats and rheumatic fever among parents.

Awareness levels that rheumatic fever is caused by a sore throat continues to remain lowest among Asians, although up from 28% in Phase 1, due to their lower awareness of rheumatic fever in general. Awareness levels in Phase 2 by D.I. group and prioritised ethnicity are shown in Table 12.

Table 12: Knowledge that 'Rheumatic fever is caused by a throat infection' by D.I. group and prioritised ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
True	71%	78%▲	66%▼	70%	80%▲	73%	60%▼	70%
False	4%	3%	2%	5%	1%	5%	4%	4%
Don't know	22%	16%▼	29%▲	21%	18%	15%	16%	25%▲
Unaware of rheumatic fever	3%	3%	3%	4%	0%▼	6%	21%▲	1%▼

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

5.2.2 Consequences of rheumatic fever

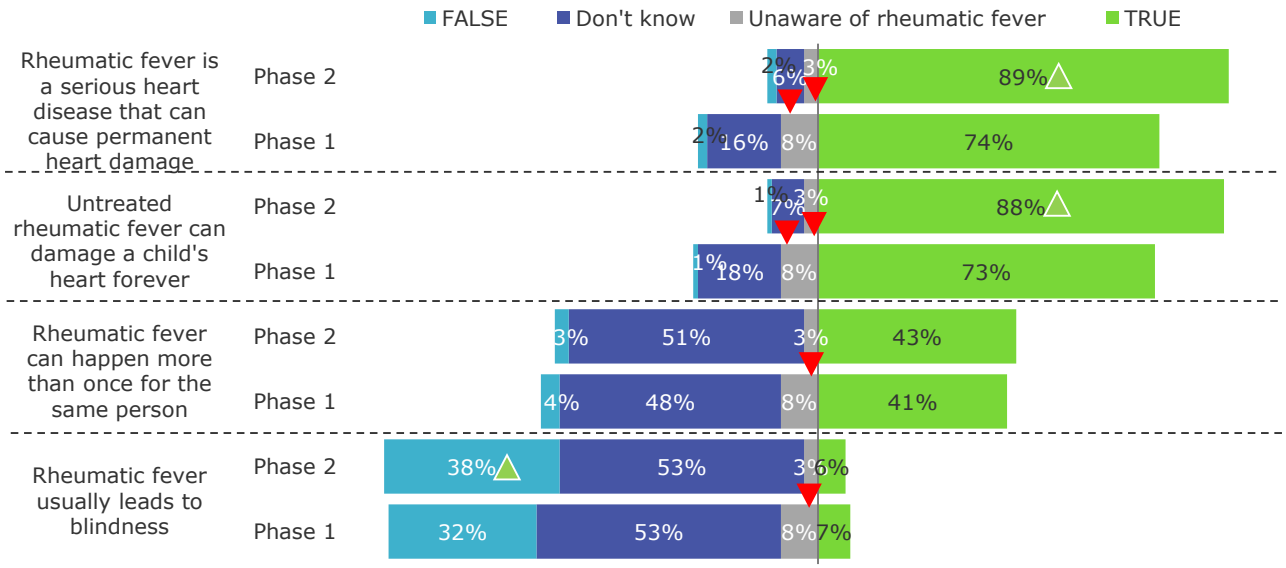
Awareness that rheumatic fever can cause permanent heart damage has increased significantly since Phase 1, with almost nine in ten parents now aware (89%) compared to 74% previously. A similar proportion (88%) is also now aware that untreated rheumatic fever can damage a child's heart forever. The increase in awareness has been among all D.I. groups and all prioritised ethnicity groups. Asians have the lowest awareness that rheumatic fever can cause heart damage overall (at 70%), although this is due to being less aware of rheumatic fever in general.

Few parents (6%) agree with the misleading statement that rheumatic fever usually leads to blindness. However, only two in five know that this is definitely incorrect with half unsure. NZ Europeans have the highest awareness that this statement is incorrect.

It is not surprising that many parents remain uncertain that rheumatic fever can be reoccurring given that this message was not the focus of the 2014 campaign. Only 43% of parents are aware of this fact, similar to Phase 1, while 51% remain unsure. Levels of awareness are not significantly different by D.I. group or by prioritised ethnicity.

Knowledge levels in terms of the consequences of rheumatic fever from Phase 1 to Phase 2 are shown in Chart 5.

Chart 5: Knowledge of the consequences of rheumatic fever at Phase 1 and Phase 2



▲/▼ Significantly higher / lower than Phase 1 at 95% Confidence Level

Differences in knowledge about the consequences of rheumatic fever by D.I. group and by prioritised ethnicity are shown in Table 13.

Table 13: Knowledge of the consequences of rheumatic fever by D.I. group and prioritised ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
Rheumatic fever is a serious heart disease that can cause permanent damage								
True	89%	93%▲	90%	86%▼	93%	86%	70%▼	91%▲
False	2%	1%	0%	3%▲	1%	0%	3%	2%
Don't know	6%	4%	8%	6%	6%	7%	6%	6%
Unaware of RF	3%	3%	3%	4%	0%▼	6%	21%▲	1%▼
Untreated rheumatic fever can damage a child's heart forever								
True	88%	90%	90%	86%	92%	86%	68%▼	90%▲
False	1%	1%	%	1%	1%	0%	0%	1%
Don't know	7%	6%	7%	8%	7%	7%	11%	7%
Unaware of RF	3%	3%	3%	4%	0%▼	6%	21%▲	1%▼
Rheumatic fever can happen more than once for the same person								
True	43%	45%	42%	42%	44%	41%	37%	44%
False	3%	3%	2%	3%	3%	5%	0%	3%
Don't know	51%	49%	54%	51%	53%	48%	41%	52%
Unaware of RF	3%	3%	3%	4%	0%▼	6%	21%▲	1%▼
Rheumatic fever usually leads to blindness								
True	6%	7%	5%	7%	9%	9%	10%	5%▼
False	38%	36%	37%	39%	33%	18%▼	24%▼	43%▲
Don't know	53%	54%	55%	50%	58%	67%▲	45%	51%
Unaware of RF	3%	3%	3%	4%	0%▼	6%	21%▲	1%▼

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

5.2.3 Treatment of rheumatic fever

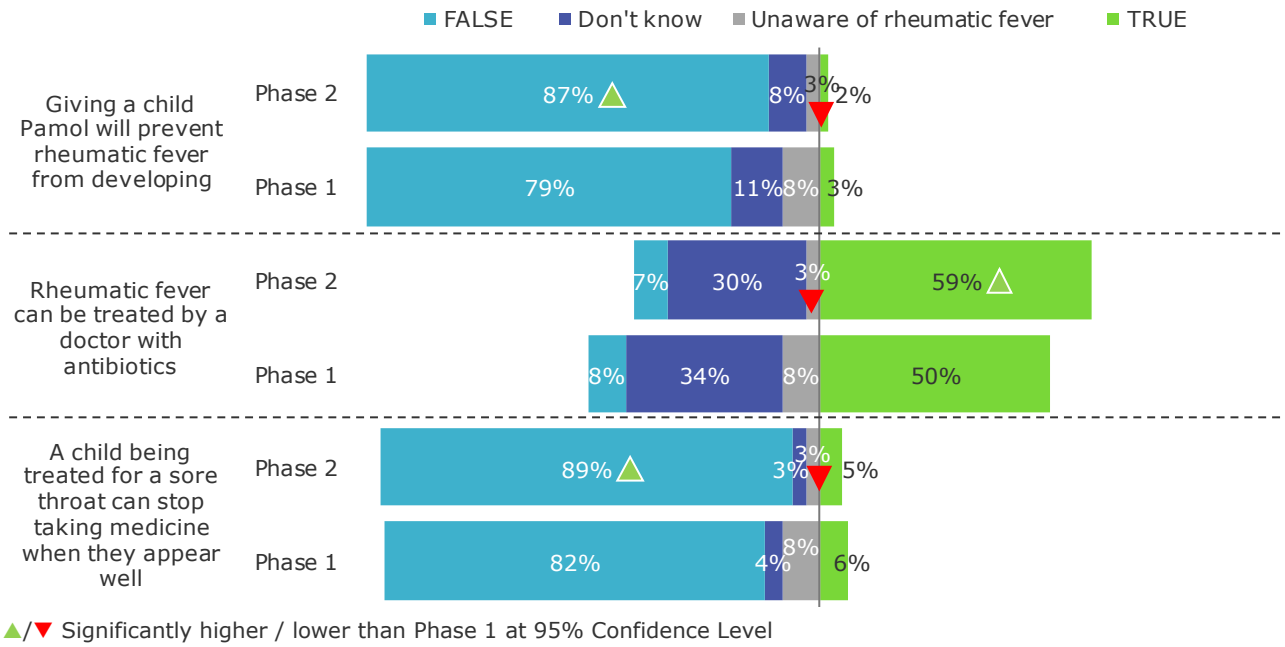
Most parents are now aware that giving a child Pamol will not prevent rheumatic fever developing, increasing from 79% in Phase 1 to 87% in Phase 2. The increase in awareness has been among those living in both high and low D.I. areas. Those living in low D.I areas have the highest level of awareness overall however this is due to heightened levels among NZ Europeans. Pacific people are the most likely to believe that Pamol will stop rheumatic fever from developing at 14%.

There has also been an increase in awareness that rheumatic fever can be treated by a doctor with antibiotics, from 50% in Phase 1 to 59% in Phase 2. However, 30% of parents remain unsure how it is treated and 7% continue to believe that antibiotics don't help. The increase in awareness has been among those living in both high and medium D.I. areas and those from Māori and Pacific people households specifically. Comparing across groups, the level of awareness is similar within all D.I. groups but is lowest among Asian households.

Most parents (89%) disagree that a child being treated for a sore throat can stop taking medicine when they appear well and being an increase on the level in Phase 1 (82%). Disagreement has increased among those from high D.I groups and among most prioritised ethnic groups, the exception being NZ Europeans who already had high awareness of the need to finish medication. Both Pacific people and Asian are the most likely to agree that medication can be stopped before it is finished.

Knowledge levels in terms of the treatment of rheumatic fever from Phase 1 to Phase 2 are shown in Chart 6.

Chart 6: Knowledge of the treatment of rheumatic fever at Phase 1 and Phase 2



▲/▼ Significantly higher / lower than Phase 1 at 95% Confidence Level

Differences in knowledge about the treatment of rheumatic fever by D.I. group and by prioritised ethnicity are shown in Table 14.

Table 14: Knowledge of the consequences of rheumatic fever by D.I group and prioritised ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
Giving a child Pamol will prevent rheumatic fever from developing								
True	2%	3%▲	2%	1%▼	1%	14%▲	2%	1%▼
False	87%	84%	83%▼	92%▲	83%	67%▼	69%▼	93%▲
Don't know	8%	10%	12%▲	3%▼	15%▲	12%	8%	5%▼
Unaware of RF	3%	3%	3%	4%	0%▼	6%	21%▲	1%▼
Rheumatic fever can be treated by a doctor with antibiotics								
True	59%	63%	60%	56%	60%	68%	48%▼	60%
False	7%	8%	7%	6%	11%▲	9%	9%	5%▼
Don't know	30%	26%	30%	34%	29%	17%▼	22%	34%▲
Unaware of RF	3%	3%	3%	4%	0%▼	6%	21%▲	1%▼
A child being treated for a sore throat can stop taking medicine when they appear well								
True	5%	6%	4%	5%	6%	11%▲	11%▲	3%▼
False	89%	88%	91%	88%	91%	75%▼	63%▼	93%▲
Don't know	3%	3%	3%	3%	3%	8%▲	5%	2%
Unaware of RF	3%	3%	3%	4%	0%▼	6%	21%▲	1%▼

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

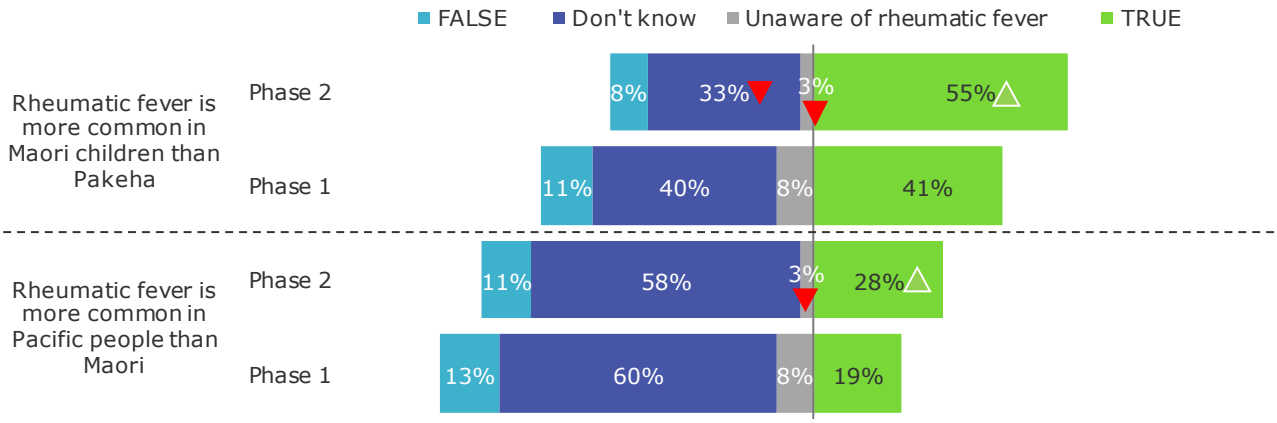
5.2.4 Prevalence of rheumatic fever

There has been a lift in awareness that rheumatic fever is more common in Māori children than Pakeha from 41% to 55%. Awareness has increased among all D.I. groups and among both Māori and NZ Europeans. Furthermore, those of Māori background are now the most aware of the heightened risk among Māori children at 65%.

There has also been a lift in awareness that rheumatic fever is more common in Pacific people than Māori although only one in four are aware of this fact (28%) and many remain unsure (58%). Pacific people have the highest level of both agreement and disagreement that there is heightened risk for them. However, with only 38% of Pacific people agreeing, there is the need to still raise awareness of the heightened risk among this group.

Knowledge of the heightened risks of rheumatic fever among Māori and Pacific people from Phase 1 to Phase 2 is shown in Chart 7.

Chart 7: Knowledge of the prevalence of rheumatic fever at Phase 1 and Phase 2



▲/▼ Significantly higher / lower than Phase 1 at 95% Confidence Level

Differences in knowledge about the prevalence of rheumatic fever by D.I. group and by prioritised ethnicity are shown in Table 15.

Table 15: Knowledge of the prevalence of rheumatic fever by D.I. group and prioritised ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
Rheumatic fever is more common in Māori children than Pakeha								
True	55%	55%	55%	55%	65%▲	45%	25%▼	58%
False	8%	10%	6%	9%	8%	20%▲	7%	8%
Don't know	33%	33%	36%	32%	27%	28%	47%▲	34%
Unaware of RF	3%	3%	3%	4%	0%▼	6%	21%▲	1%▼
Rheumatic fever is more common in Pacific people than Māori								
True	28%	24%	33%▲	27%	29%	38%	19%	28%
False	11%	15%▲	8%	10%	11%	23%▲	13%	9%
Don't know	58%	59%	56%	59%	61%	33%▼	47%▼	62%▲
Unaware of RF	3%	3%	3%	4%	0%▼	6%	21%▲	1%▼

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

5.3 Knowledge about the Treatment of Sore Throats

5.3.1 Advice for serious and minor sore throats

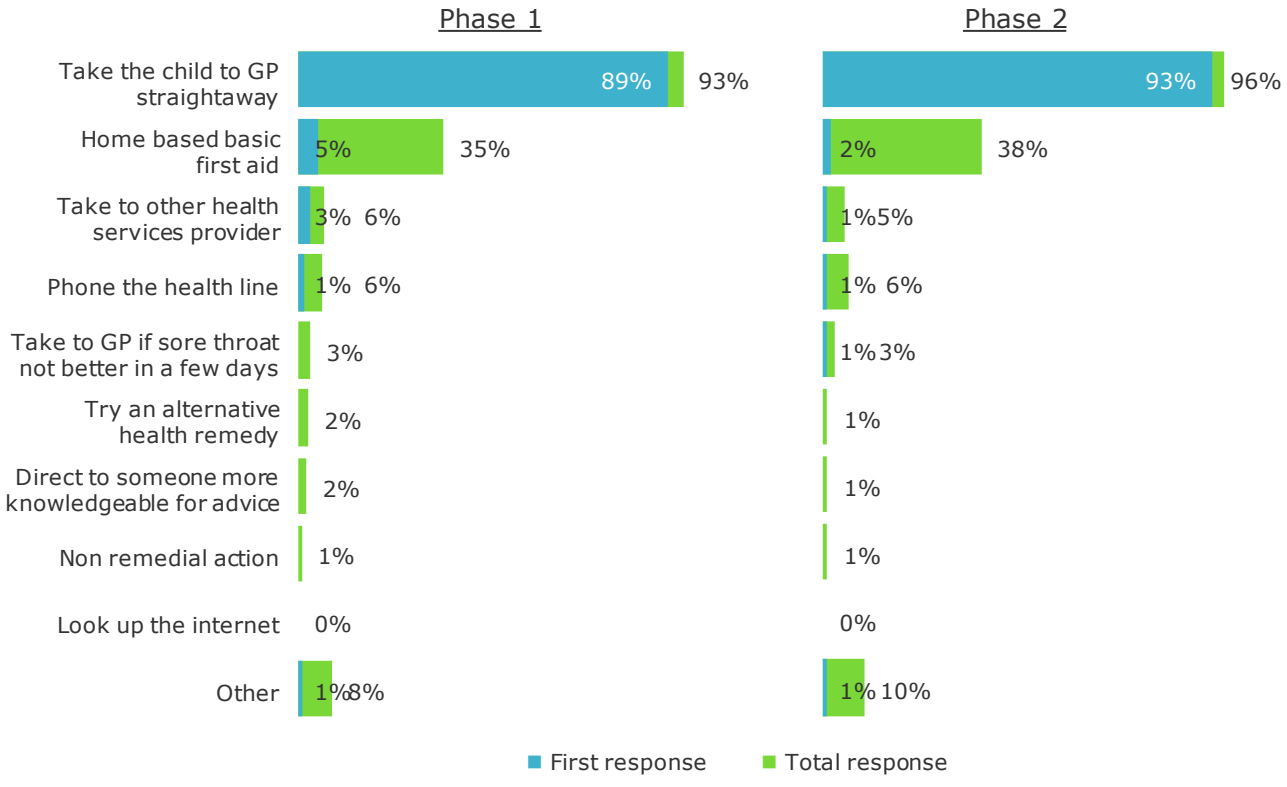
Serious Sore Throats

In order to test likely reactions and the propensity to seek medical help for sore throats, respondents were given a scenario where a neighbour asked for advice for her sick child. The scenario depicted a seriously sore throat as follows:

Imagine your neighbour asks you for some advice. Her 8 year old child Jamie is home from school with a sore throat. Jamie says it hurts to swallow, and Jamie feels hot to touch. Your neighbour says she can see red and white spots when she looks down Jamie's throat, and when she touches the sides of Jamie's neck, Jamie says it's sore. What would you likely suggest to your neighbour?

When presented with such a situation, the overwhelming initial response is to seek immediate medical advice. Overall 96% would advise taking the child to the doctor immediately, which is similar to the level in Phase 1 (93%), while 5% would recommend going to another health service provider. The proportion who would recommend phoning the health line remains stable at 6%. As a supporting action, two in five parents (38%) would recommend home based basic first aid. The recommended advice provided by parents at Phase 1 and Phase 2 is illustrated in Chart 8.

Chart 8: Advice to neighbour for a serious sore throat at Phase 1 and Phase 2



▲/▼ Significantly higher / lower than Phase 1 at 95% Confidence Level

The response of advising taking the child to the doctor immediately is consistent across all deprivation groups and all ethnic groups. Those of NZ European background are most likely to also advise using home based basic first aid while Māori and Pacific people are less likely to advise this option. The five most common responses provided for a serious sore throat are summarised in Table 7.

Table 7: Advice for a serious sore throat by D.I. group and prioritised ethnicity

	Total	D.I. Group			Prioritised Ethnicity			
		High	Medium	Low	Māori	Pacific people	Asian	NZ European
Take the child to GP straightaway	96%	96%	97%	96%	94%	94%	93%	98%▲
Home based basic first aid	38%	31%▼	37%	43%▲	24%▼	18%▼	39%	44%▲
Phone the health line	6%	7%	5%	5%	5%	3%	7%	6%
Take to other health services provider	5%	9%▲	5%	3%▼	11%▲	7%	3%	4%▼
Take to GP if not better in few days	3%	2%	3%	4%	3%	1%	9%▲	2%

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

Minor Sore Throats

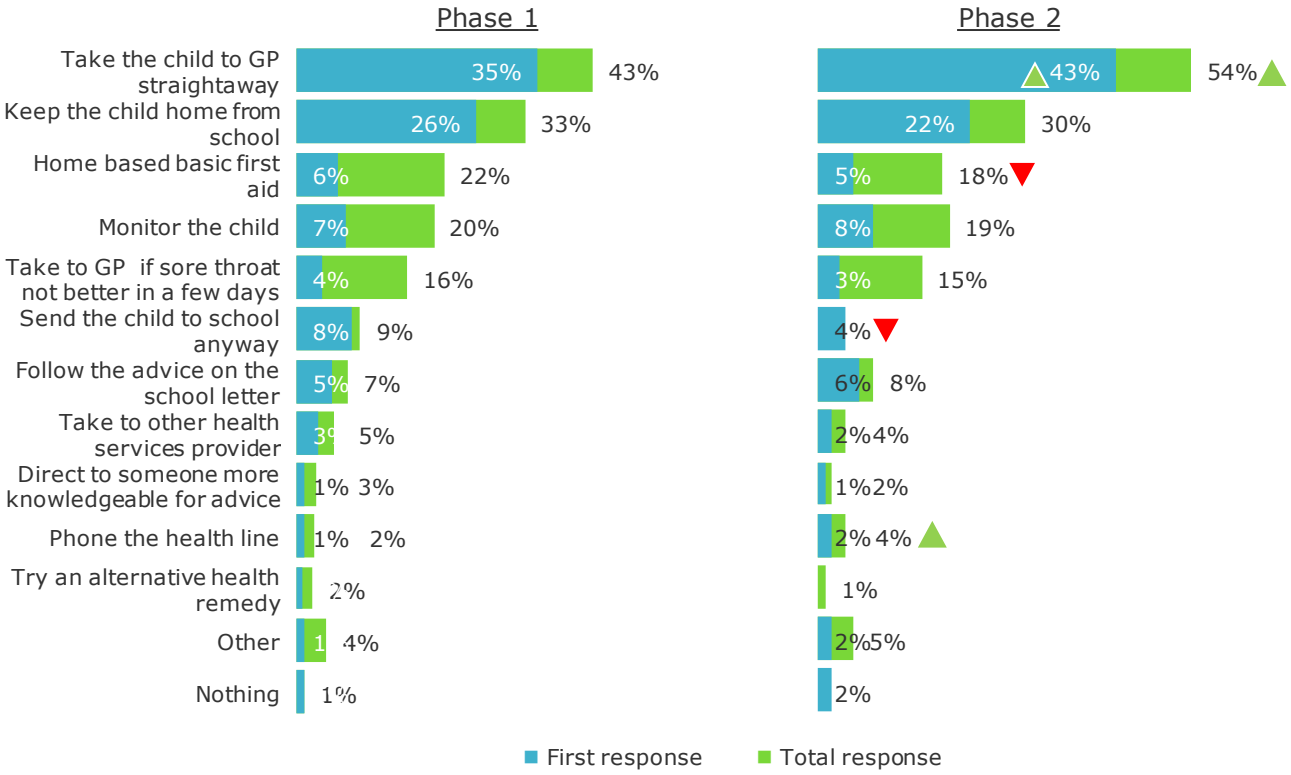
In order to further test likely reactions and the propensity to seek medical help for sore throats, respondents were given a scenario where a friend asked for advice for her sick child. The scenario depicted a minor sore throat as follows:

A friend shows you a letter from the school that says a lot of children currently have infected sore throats and that children with sore throats should be kept home, and be seen by a doctor or nurse. He says his child has had a sore throat for a couple of days but does not feel hot and has not been complaining about it. What would you suggest your friend does?

Although only half (54%) would advise taking the child to the doctor immediately, this is significantly higher than the Phase 1 level of recommendation (at 43%). Reflective of Phase 1, 15% would only advise taking the child to the doctor if the sore throat wasn't better within a few days. Other common responses remain monitoring the child (19%) and home based basic first aid (18%). Although only 30% would actively advise keeping the child home from school, only a minority (5%) would advise sending the child to school anyway.

The recommended advice provided by parents at Phase 1 and Phase 2 is illustrated in Chart 9.

Chart 9: Advice to friend for a minor sore throat at Phase 1 and Phase 2



▲/▼ Significantly higher / lower than Phase 1 at 95% Confidence Level

The increase in advising taking the child to the doctor immediately for a minor sore throat is across all deprivation groups, although only being statistically significant among those from Medium and Low D.I. areas. Increases have also been seen among Māori, Pacific people and NZ European, although only being statistically significant among NZ European. Levels remain stable among those of Asian ethnicity. The proportion of parents advising to go immediately to the doctor in Phase 1 compared to Phase 2 is shown in Table 8.

Table 8: Advice for a minor sore throat – 'Take the child to GP immediately'

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
Phase 2	54%▲	64%	48%▲	49%▲	64%	79%	48%	48%▲
Phase 1	43%	57%	35%	39%	55%	68%	47%	36%

▲/▼ Significantly higher / lower than Phase 1 at 95% Confidence Level

Comparing across groups, those from high D.I. areas remain the most likely to recommend immediate medical attention, influenced by the high response among Māori and Pacific people (with four in five Pacific people now advising this option). Parents of Asian ethnicity are the most likely to recommend home based first aid while NZ Europeans are the most likely to advise keeping the child home from school and monitoring. The five most common responses provided for a minor sore throat are summarised in Table 9 by D.I. area and by prioritised ethnicity.

Table 9: Advice for a minor sore throat by D.I. group and prioritised ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
Take the child to GP straightaway	54%	64%▲	48%	49%▼	64%▲	79%▲	48%	48%▼
Keep the child home from school	30%	22%▼	36%▲	30%	23%▼	15%▼	29%	33%▲
Home based basic first aid	18%	14%	16%	21%▲	12%▼	6%▼	32%▲	19%
Monitor the child	19%	13%▼	19%	23%▲	12%▼	11%	15%	22%▲
Take to GP if not better in a few days	15%	10%▼	17%	18%	9%▼	7%	22%	17%

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

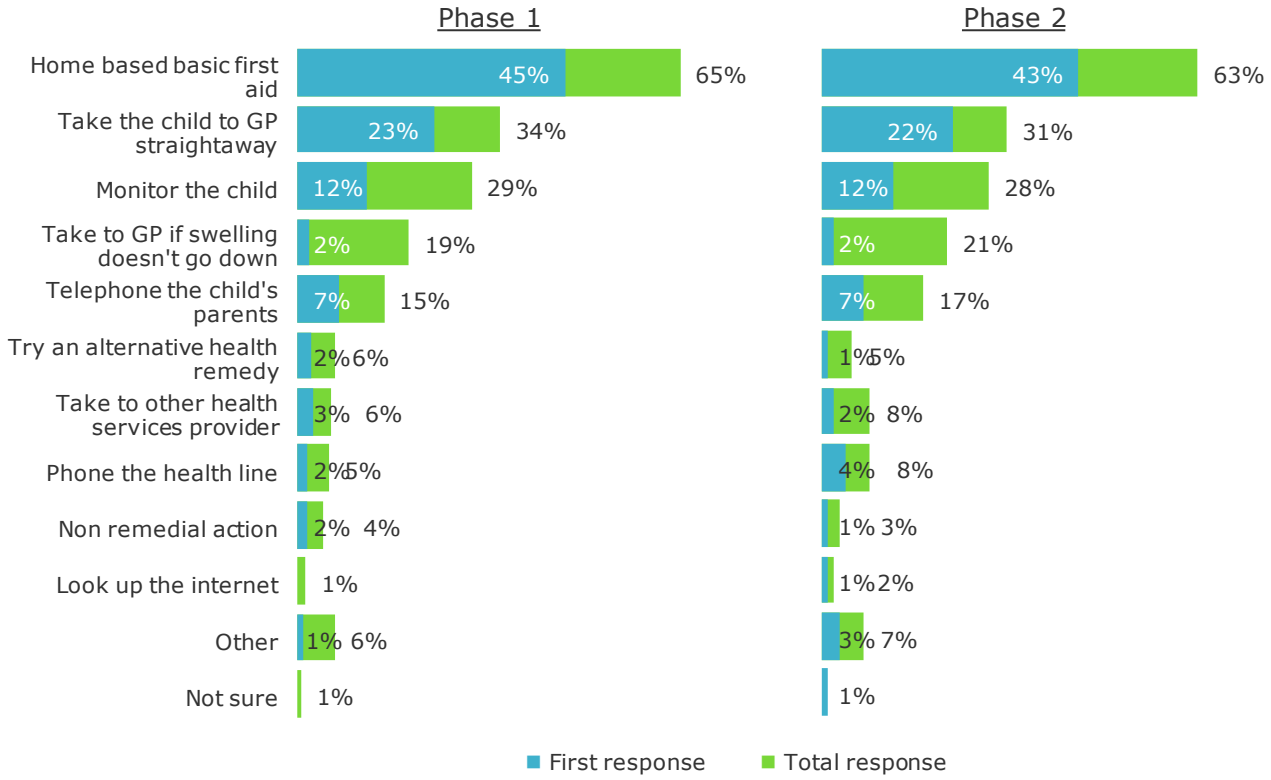
Bee Stings

By way of a contrast, a further scenario sought responses to a bee sting for a child who was in their care. The scenario read as follows:

A six-year old left in your care has been stung by a bee on his foot. This is the second time in a month he's had a bee sting. When he was last stung he did not have a reaction and was fine, but he is crying and still in pain. What would you be likely to do?

Overall responses remain stable between Phase 1 and Phase 2. The most common response (63%) to a bee sting is to provide home based basic first aid to the child such as scraping out the sting. Other common responses are to monitor the child (31%), to telephone the child's parents (17%) and to take to a doctor if the swelling doesn't go down (21%). Despite health guidelines of only going to a doctor if signs of an allergic reaction, almost one in three parents (31%) still claim that they would take the child to the doctor immediately. The responses provided by parents at Phase 1 and at Phase 2 are illustrated in Chart 10.

Chart 10: Actions for a bee sting at Phase 1 and Phase 2



▲/▼ Significantly higher / lower than Phase 1 at 95% Confidence Level

Comparing across groups, Pacific people and Asians have the highest propensity to seek medical attention for a bee sting (at 62% and 64% respectively) while Māori and NZ Europeans are more likely to provide home based first aid (67% and 68% respectively). Those of Asian background are also the only group to be more likely to seek immediate medical attention for a bee sting than for a minor sore throat. The five most common actions for a bee sting by D.I. group and prioritised ethnicity are summarised in Table 10.

Table 10: Actions for a bee sting by D.I. group and prioritised ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
Home based basic first aid	63%	60%	68%▲	61%	67%	39%▼	37%▼	68%▲
Take the child to GP straightaway	31%	43%▲	29%	25%▼	40%▲	62%▲	64%▲	20%▼
Monitor the child	28%	22%▼	30%	32%	21%▼	10%▼	13%▼	35%▲
Take to GP if the swelling doesn't go down	21%	18%	20%	24%	26%	15%	7%▼	22%
Telephone the child's parents	17%	15%	17%	18%	17%	6%▼	11%	19%▲

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

5.3.2 Attitudes towards taking a child to the doctor for a sore throat

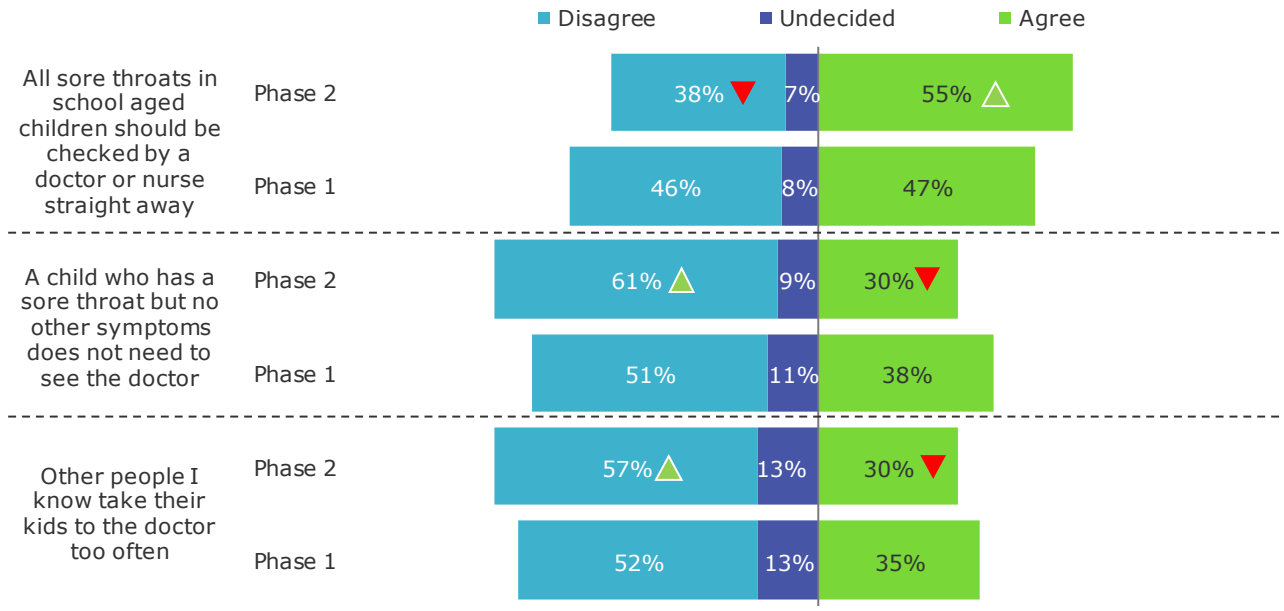
There has been an increase in agreement since Phase 1 that all sore throats in school aged children should be checked by a doctor or nurse straight away, from 47% in Phase 1 to 55% in Phase 2. The lift in agreement has been among those living in high and medium D.I areas and among NZ Europeans. However, with 38% of parents still disagreeing there is a need to further communicate the urgency of having sore throats checked immediately.

There has also been an increase in disagreement that a child who has a sore throat but no other symptoms does not need to see the doctor (from 51% to 61%). The increase in disagreement has been across all D.I. areas and among NZ Europeans. Three in ten parents however remain unconvinced, again highlighting the need to further communicate that all sore throats should be checked regardless.

Although lower than in Phase 1, 30% of parents continue to think that others take their kids to the doctor too often.

Agreement towards having a child's sore throat checked by a doctor or nurse at Phase 1 and Phase 2 is illustrated in Chart 11.

Chart 11: Attitudes towards taking a child to the doctor at Phase 1 and Phase 2



▲/▼ Significantly higher / lower than Phase 1 at 95% Confidence Level

Comparing across groups, those from high D.I. areas are most likely to agree that a child's sore throat should be checked immediately (76%). The main differences however are between ethnicities. Although there has been an increase among NZ Europeans, it is this group who remain the most unconvinced to the urgency, with around one in two disagreeing compared to fewer than one in five among the other ethnic groups.

It is also those living in high D.I. areas that are most likely to disagree that a child with a sore throat but no other symptoms doesn't need to see the doctor. Again, it is NZ Europeans who are most likely to believe that a sore throat on its own doesn't need to be checked at 37% compared to 21% or under among the other ethnic groups.

Differences in attitudes towards taking a child to the doctor for a sore throat by D.I. group and by prioritised ethnicity are shown in Table 11.

Table 11: Attitudes towards taking a child to the doctor by D.I group and prioritised ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
All sore throats in school aged children should be checked by a doctor or nurse straight away								
Agree	55%	76%▲	52%	41%▼	76%▲	88%▲	74%▲	42%▼
Disagree	38%	20%▼	42%	48%▲	17%▼	10%▼	19%▼	50%▲
Undecided	7%	4%▼	6%	11%▲	7%	3%	7%	8%
A child who has a sore throat but no other symptoms does not need to see the doctor								
Agree	30%	18%▼	37%▲	35%▲	19%▼	13%▼	21%	37%▲
Disagree	61%	75%▲	56%	54%▼	74%▲	79%▲	68%	54%▼
Undecided	9%	8%	7%	11%	7%	7%	10%	9%
Other people I know take their kids to the doctor too often								
Agree	30%	30%	26%	34%	26%	42%	46%▲	28%
Disagree	57%	58%	60%	53%	63%	39%▼	40%▼	59%
Undecided	13%	12%	14%	12%	11%	19%	14%	13%

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

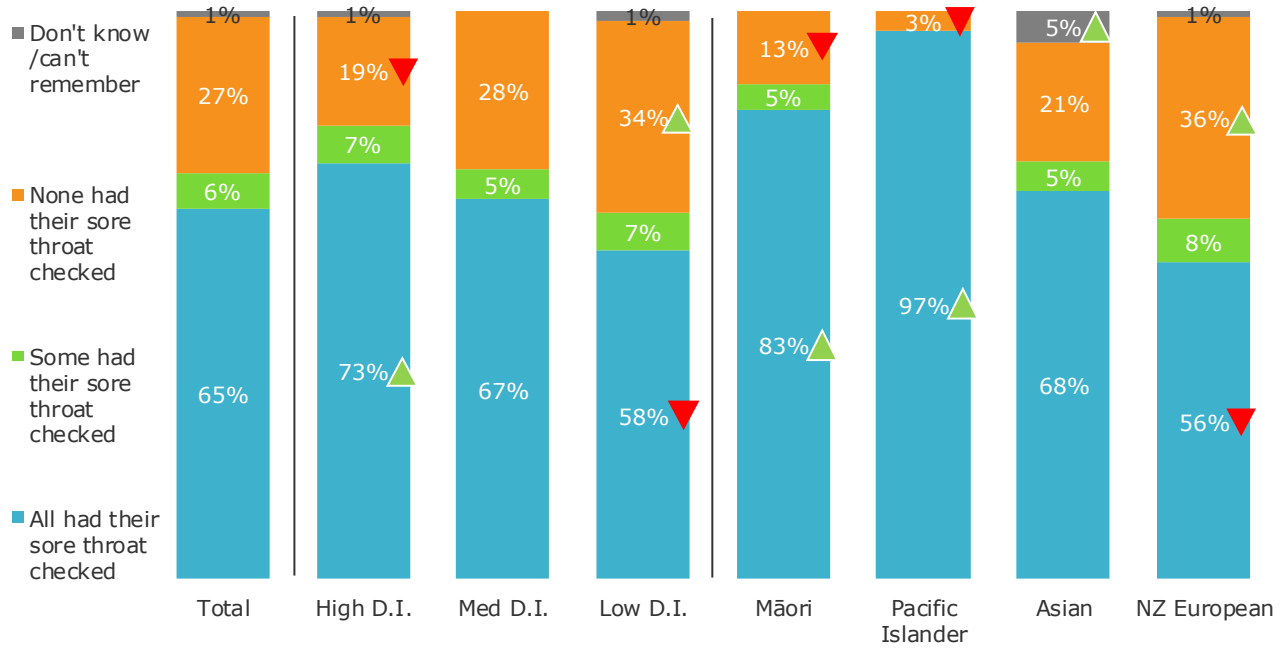
Behaviour – Taking the child to the doctor

To further check propensity for having a child's sore throat checked, parents were asked if any of the children in their care had a sore throat so bad in the past year that they had to stay home from school. Overall three in five parents reported at least one child having a bad sore throat, with almost one in five (19%) having several children with a bad sore throat.

Parents were then asked if their child's sore throat was checked by a doctor or nurse. Although the majority reported having all, or at least some, of their children's sore throats checked, one in four parents did not take their children to the doctor or nurse for checking. In line with general attitudes, it is those from high D.I. areas and Māori and Pacific people specifically, who are taking their children to be checked. The level is lowest among NZ Europeans with only three in five taking their children to the doctor for checking.

The proportion of parents taking their children with sore throats to be checked by a doctor or nurse over the past year is shown in Chart 12.

Chart 12: Child's sore throat checked by a doctor (among those with a child with a sore throat)



▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

5.3.3 Knowledge of sore throat checking

When asked in relation to rheumatic fever, there has been an increase in awareness that all sore throats need to be checked by a doctor from 40% in Phase 1 to 53% in Phase 2. This is a similar level of agreement to having all sore throats in school age children checked immediately (55%) as shown in section 5.3.2. This suggests that parents aware that sore throats need to be checked in general are also typically aware of the urgency required.

The increase in awareness that all sore throats need to be checked by a doctor is across all D.I. areas and all prioritised ethnic groups. However, 37% of parents disagree highlighting the need to further reinforce this message among parents.

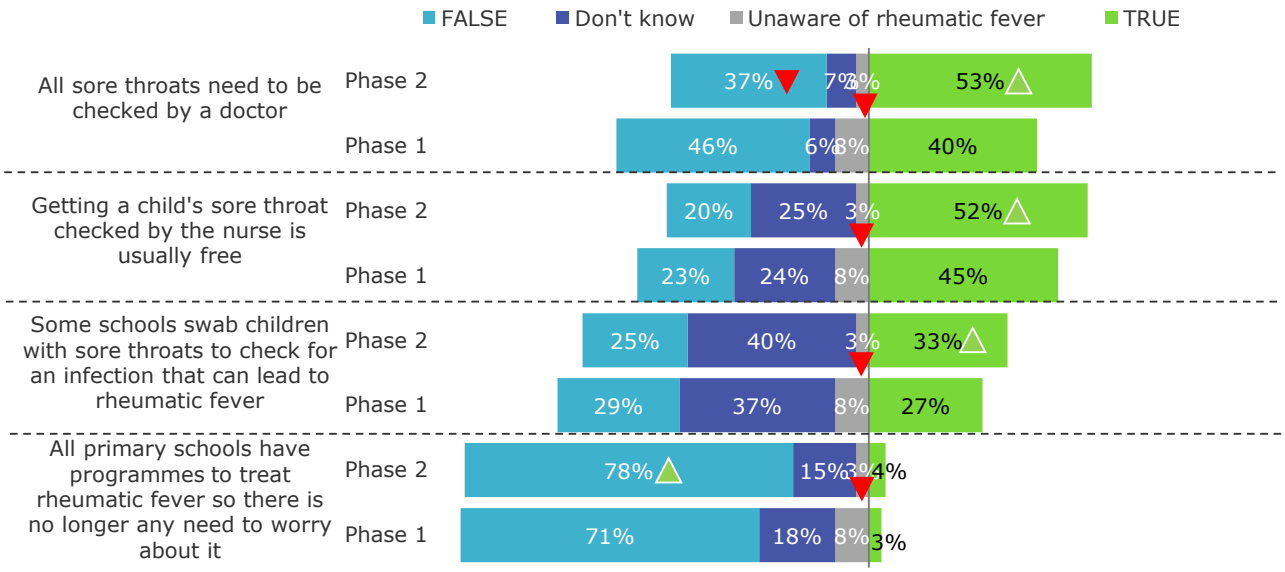
One in two parents is now aware that getting a child's sore throat checked by a nurse is usually free. The increase in awareness has been among those living in high and medium D.I. areas with levels remaining unchanged among those living in low D.I. areas.

Only one in three parents are aware that some schools swab children with sore throats although this is higher than in Phase 1 (at 27%). Increases have been among both Māori and Pacific people. But with one in four parents disagreeing and many unsure, there remains a high degree of uncertainty.

Three in four parents now disagree that all primary schools have programmes to treat rheumatic fever so there is no need to worry about it, being a slight increase on Phase 1 (at 71%). The remainder are typically unsure with only 4% agreeing overall.

Attitudes towards checking for rheumatic fever at Phase 1 and Phase 2 are illustrated in Chart 13.

Chart 13: Awareness of checking for rheumatic fever at Phase 1 and Phase 2



▲/▼ Significantly higher / lower than Phase 1 at 95% Confidence Level

Comparing across groups, those living in high D.I. areas and Māori and Pacific people are most likely to be aware that all sore throats should be checked by the doctor. They also have the highest awareness that getting checked by a nurse is usually free and that some schools swab for sore throats. NZ Europeans are least likely to be aware that all sore throat should be checked.

Differences in awareness of checking for rheumatic fever by D.I. group and by prioritised ethnicity are shown in Table 12.

Table 12: Awareness of checking for rheumatic fever by D.I group and prioritised ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
All sore throats need to be checked by a doctor								
True	53%	74%▲	49%	42%▼	74%▲	84%▲	57%	43%▼
False	37%	18%▼	43%▲	47%▲	15%▼	8%▼	17%▼	50%▲
Don't know	7%	6%	6%	8%	11%▲	1%	6%	6%
Unaware of RF	3%	3%	3%	4%	0%▼	6%	21%▲	1%▼
Getting a child's sore throat checked by a nurse is usually free								
True	52%	67%▲	47%	44%▼	68%▲	74%▲	42%	46%▼
False	20%	14%▼	22%	22%	10%▼	6%▼	31%▲	23%▲
Don't know	25%	16%▼	29%	30%▲	21%	14%▼	6%▼	30%▲
Unaware of RF	3%	3%	3%	4%	0%▼	6%	21%▲	1%▼
Some schools swab children with sore throats to check for an infection that can lead to rheumatic fever								
True	33%	48%▲	28%	24%▼	54%▲	58%▲	29%	24%▼
False	25%	15%▼	28%	30%▲	17%▼	8%▼	23%	29%▲
Don't know	40%	35%	41%	42%	28%▼	28%	27%▼	46%▲
Unaware of RF	3%	3%	3%	4%	0%▼	6%	21%▲	1%▼

	Total	D.I. Group			Prioritised Ethnicity			
		High	Medium	Low	Māori	Pacific people	Asian	NZ European
All primary schools have programmes to treat rheumatic fever so there is no longer any need to worry about it								
True	4%	9%▲	1%▼	2%▼	6%	21%▲	7%	1%▼
False	78%	74%▼	80%	81%	74%	51%▼	52%▼	86%▲
Don't know	15%	14%	16%	13%	20%▲	22%	20%	11%▼
Unaware of RF	3%	3%	3%	4%	0%▼	6%	21%▲	1%▼

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

5.4 Campaign impact

5.4.1 Actions as a result of the campaign

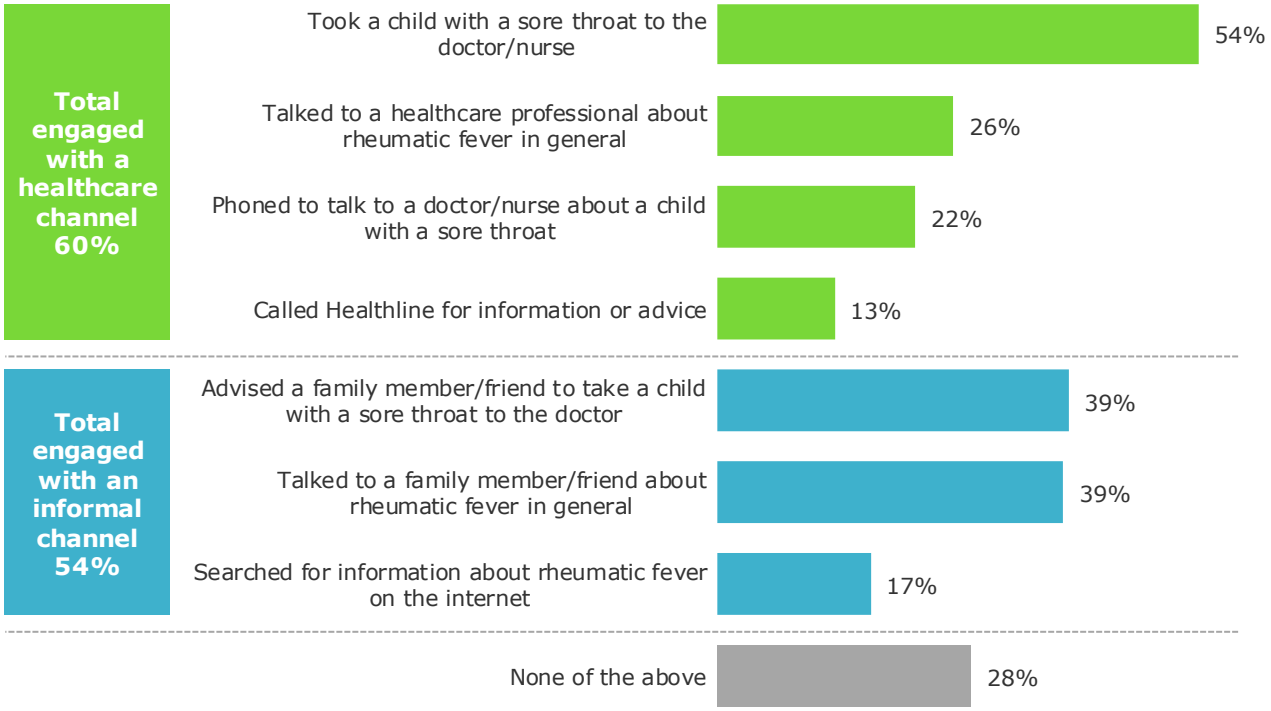
To measure the direct impact that the campaign has had on actions, parents who recalled seeing or hearing the 2014 rheumatic fever campaign were given a list of actions and asked which, if any, they had done as a direct result of the campaign. This was asked of all parents rather than only those whose child had a sore throat at the time.

Overall, three in five parents aware of the campaign claim to have engaged with a healthcare channel as a direct result. Just over half (54%) took a child with a sore throat to a doctor or nurse. This was often coupled with talking to a healthcare professional about rheumatic fever in general or phoning to talk to a doctor or nurse about a child with a sore throat specifically. Just over one in ten (13%) called Healthline for information or advice. Of note, most parents who called either Healthline or a doctor or nurse to discuss a child, also took a child with a sore throat to be checked suggesting that the general recommendation they received was to bring the child to be checked.

Just over one in two parents (54%) engaged with an informal channel as a direct result of the campaign. Typically this was either talking to a family member or friend about rheumatic fever in general or advising them to take a child with a sore throat to the doctor. One in five (17%) parents aware of the campaign were prompted to search for further information about rheumatic fever on the internet.

The actions taken as a direct result of seeing or hearing the rheumatic fever campaign as shown in Chart 14.

Chart 14: Actions as a direct result of the rheumatic fever campaign (among those aware of the campaign)



Comparing across groups, Māori and Pacific people were most likely to engage with the healthcare channel and were the most likely to take a child with a sore throat to the doctor (at 69% and 75% respectively) as a direct result of seeing the campaign. They were also the most likely to talk to family and friends including advising taking a child to the doctor. NZ Europeans were the least likely to engage in any actions as a result of the campaign. Those of Asian background were the most likely to search for information on the internet.

The actions taken as a direct result of seeing or hearing the rheumatic fever campaign as shown in Table 13 by D.I. group and prioritised ethnicity.

Table 13: Actions as a direct result of the rheumatic fever campaign (among those aware of the campaign)

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
Total engaged with a healthcare channel	*60%*	*63%*	*55%*	*60%*	*75%▲*	*81%▲*	*65%*	*52%▼*
Took a child with a sore throat to a doctor or nurse	54%	58%	49%	54%	69%▲	75%▲	47%	46%▼
Talked to a HCP about rheumatic fever in general	26%	38%▲	18%▼	22%▼	39%▲	55%▲	36%	17%▼
Phoned to talk to a doctor / nurse about a child with a sore throat	22%	27%▲	22%	17%▼	32%▲	32%	23%	17%▼
Called Healthline for information or advice	13%	18%▲	12%	10%	16%	19%	14%	11%
Total engaged with an informal channel	*54%*	*66%▲*	*46%▼*	*50%*	*75%▲*	*73%▲*	*65%*	*43%▼*
Advised a friend or family member to take a child to the doctor	39%	55%▲	28%▼	33%▼	57%▲	67%▲	50%	28%▼
Talked to a friend or family member in general	39%	49%▲	34%	33%▼	63%▲	57%▲	44%	27%▼
Searched for information on the internet	17%	23%▲	14%	15%	21%	20%	35%▲	14%▼
None of the above	28%	24%	34%▲	28%	12%▼	14%▼	25%	36%▲

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

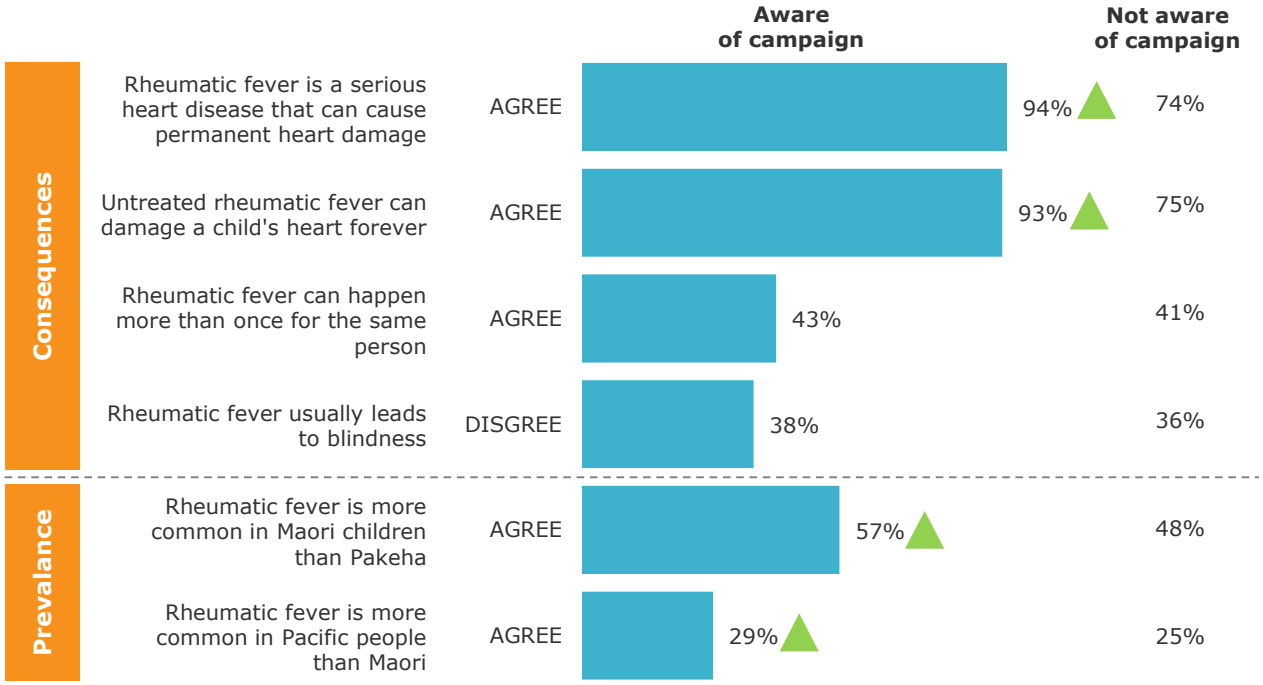
5.4.2 Impact on knowledge about rheumatic fever

Almost all parents aware of the campaign (94%) now know that rheumatic fever is a serious heart disease, being significantly higher than among those unaware of the campaign (74%). Not surprisingly, given that these were not campaign messages, those aware of the campaign are no more likely to know that rheumatic fever can be reoccurring or that it doesn't cause blindness.

In terms of prevalence, there is slightly higher awareness that rheumatic fever is more common among Māori than Pakeha children among those aware of the campaign. However, there is no difference in terms of knowing that rheumatic fever is more common among Pacific people than Māori.

The awareness of the consequences and prevalence of rheumatic fever among those aware of the campaign is shown in Chart 15.

Chart 15: Awareness of the consequences and prevalence of rheumatic fever (among those aware and unaware of the campaign)



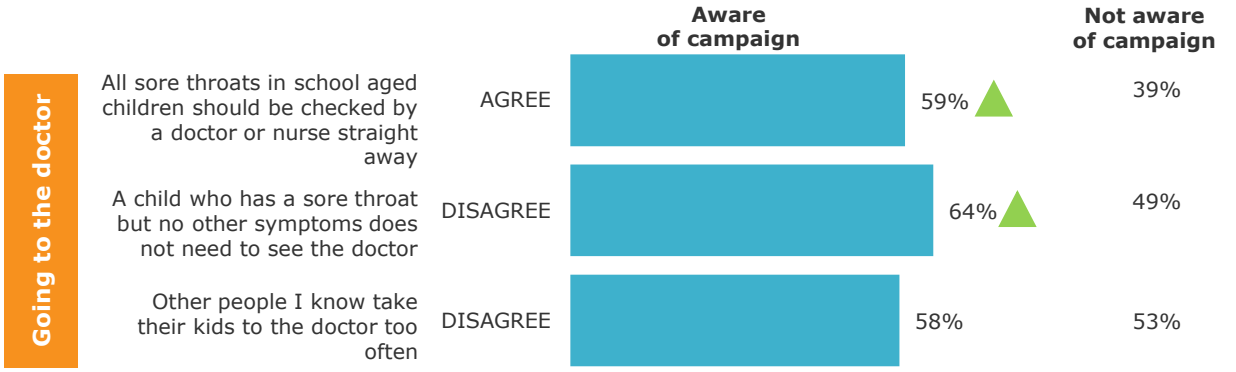
▲/▼ Significantly higher / lower than among those unaware of the campaign at 95% Confidence Level

5.4.3 Impact on knowledge about the treatment of sore throats

Those aware of the campaign have a better understanding of the importance of taking a child with a sore throat to the doctor. They are significantly more likely to agree that all sore throats in school aged children should be checked by a doctor or nurse straight away (59%). They are also more likely to disagree that a child with a sore throat but no other symptoms doesn't need to see the doctor (64%). However, even among those reached by the 2014 campaign, there is a need to further build knowledge on both these points.

Attitudes towards taking a child to the doctor for a sore throat in general among those aware of the campaign are shown in Chart 16.

Chart 16: Attitudes towards taking a child to the doctor in general (among those aware and unaware of the campaign)

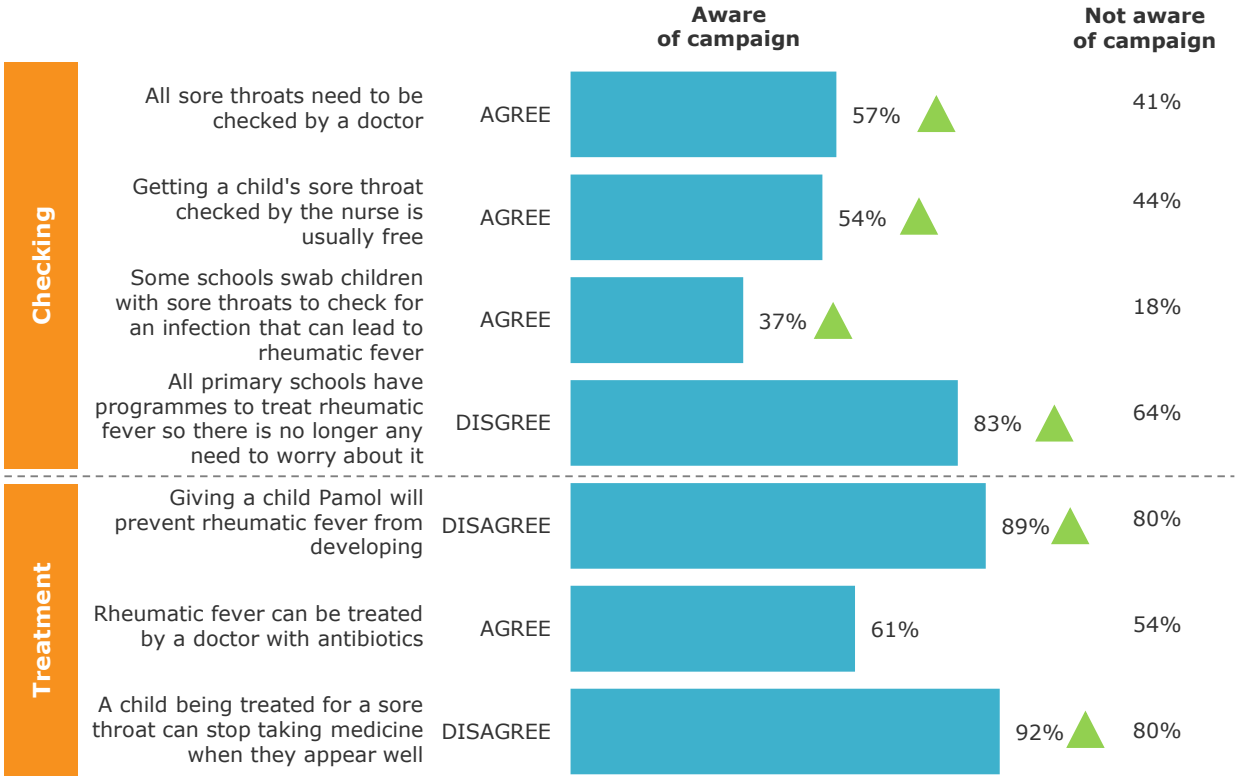


▲/▼ Significantly higher / lower than among those unaware of the campaign at 95% Confidence Level

In relation to rheumatic fever specifically, those aware of the campaign are also generally more knowledgeable about both the checking of sore throats and treatment of rheumatic fever. They are more likely to agree that all sore throats need to be checked by a doctor (57%). They also have higher awareness that getting a child's throat checked by a nurse is usually free (54%) and that some schools swab children with sore throats to check for rheumatic fever (37%). In terms of treatment, they have higher awareness that giving a child Pamol will not prevent rheumatic fever (89%) and that a child can't stop taking their medicine when they appear well (92%). Awareness that rheumatic fever can be treated by antibiotics doesn't however differ by awareness of the campaign.

Awareness of the checking of sore throats and the treatment of rheumatic fever among those aware of the campaign are shown in Chart 17.

Chart 17: Awareness of the checking of sore throats and treatment of rheumatic fever (among those aware and unaware of the campaign)



▲/▼ Significantly higher / lower than among those unaware of the campaign at 95% Confidence Level

5.5 Environmental differences

5.5.1 Degree of crowding

Two in five households have at least five people in total living within the household. However, a typical household is comprised of two adults (68%) and one to two children (72%). Māori and Pacific people households tend to be largest, with almost half of Māori households (47%) and two in three Pacific people households (68%) having five or more people living in them. Those living in high D.I. areas are also more likely to have higher numbers within the household than those living in low D.I. areas.

On average, one in ten households is single parent, although being twice this level (22%) among Māori households. At the other end of the spectrum, although only one in five households has three or more adults overall, this is a common occurrence among Pacific people households (at 49%).

In terms of the number of children, only 28% of households have three or more in total. However, this is most common among Māori households (39%) and Pacific people households (48%).

The total number of people, adults and children are shown in Table 14.

Table 14: Total number of adults and children in the household by D.I group and Prioritised Ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
Total number of people								
One to two	5%	5%	8%▲	4%	10%▲	3%	1%	5%
Three to four	55%	51%	55%	59%	44%▼	29%▼	73%▲	59%▲
Five to six	32%	30%	30%	35%	32%	36%	23%	33%
Seven plus	7%	14%▲	7%	2%▼	15%▲	32%▲	3%	2%▼
Total number of adults								
One	12%	14%	15%	7%▼	22%▲	11%	7%	10%▼
Two	68%	63%	63%▼	75%▲	57%▼	38%▼	76%	73%▲
Three	14%	12%	15%	14%	16%	22%	8%	13%
Four plus	7%	10%▲	8%	3%▼	6%	29%▲	9%	4%▼
Total number of children								
One	30%	31%	34%	26%	28%	21%	41%▲	30%
Two	42%	35%▼	39%	49%▲	34%▼	31%	41%	45%▲
Three	18%	17%	19%	19%	18%	20%	13%	19%
Four plus	10%	17%▲	8%	6%▼	21%▲	28%▲	4%	6%▼

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

Most houses have three to four bedrooms (80%) on average. Larger households of four or more bedrooms are only 34% of households within high D.I. areas to 59% of households within low D.I. areas.

The total number of bedrooms in the house by D.I. group and prioritised ethnicity are shown in Table 15.

Table 15: Total number of bedrooms in the household by D.I group and Prioritised Ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
One to two	7%	10%▲	8%	4%▼	13%▲	4%	9%	5%▼
Three	45%	56%▲	46%	37%▼	46%	52%	47%	45%
Four	35%	22%▼	33%	46%▲	30%	21%▼	36%	38%▲
Five or more	13%	12%	13%	13%	12%	22%▲	8%	13%

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

It is not surprising therefore that although only 12% of households use areas other than bedrooms for sleeping, this is highest among high D.I. areas (18%) and lowest among low D.I. areas (7%). It is also most common among both Māori (24%) and Pacific people (27%) households to use areas other than bedrooms for sleeping. The main area that is used is the lounge, with low numbers using a sleep out, garage or the dining room.

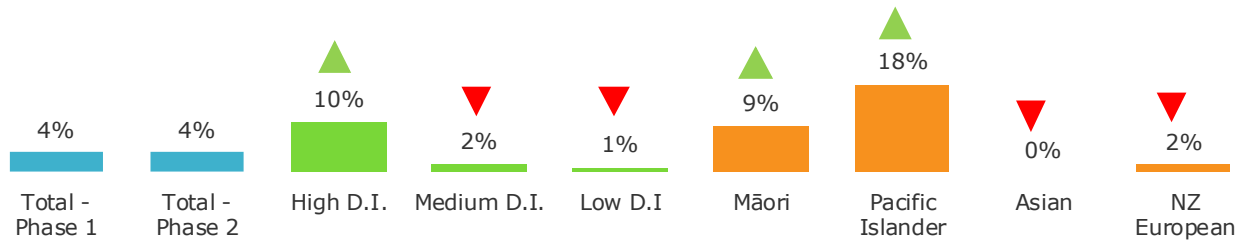
The Canadian National Occupancy Standard (CNOS) provides factors to determine overcrowding:

- No more than two people shall share a bedroom
- Parents or couples may share a bedroom
- Children under 5 years, either of the same sex or opposite sex may share a bedroom
- Children under 18 years of the same sex may share a bedroom
- A child aged 5 to 17 years should not share a bedroom with a child under 5 of the opposite sex
- Single adults 18 years and over and any unpaired children require a separate bedroom

This study does not include the gender of children and therefore it has not been possible to completely replicate the CNOS. However, for the purposes of the survey, we have determined that a dwelling is overcrowded if (1) more than two adults share a bedroom, (2) more than two children share a bedroom or if (3) adults and children are sharing a bedroom. The proportion of dwellings classified as 'crowded' will therefore differ slightly from a result achieved by applying the CNOS, but in any event, respondents to this survey that are classified as 'crowded' are also likely to be crowded using the CNOS.

Applying the modified classification, overall 4% of houses were determined to be crowded as in Phase 1. Typically these are within high D.I. areas and most are occupied by Māori or Pacific people. The incidence of crowding is summarised in Chart 18.

Chart 18: Degree of crowding by D.I area and prioritised ethnicity



▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

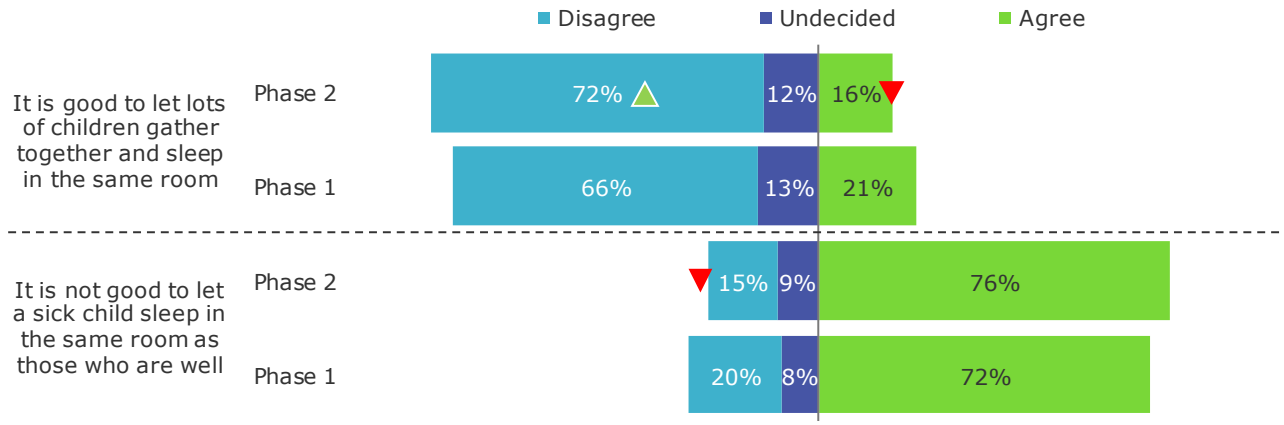
5.5.2 Attitudes towards children sleeping together

Almost three in four parents (72%) disagree that it is good to let lots of children gather together and sleep in the same room. Although lower than the pre-campaign survey, there are still 16% of parents however who think that children can sleep together with the remainder uncertain.

A similar number of parents (15%) also believe that a sick child can sleep in the same room as those who are well although the majority of parents (76%) disagree.

Attitudes towards children sleeping in the same room at Phase 1 and Phase 2 are illustrated in Chart 19.

Chart 19: Attitudes towards children sleeping in the same room at Phase 1 and Phase 2



▲/▼ Significantly higher / lower than Phase 1 at 95% Confidence Level

Comparing across groups, Māori are the least likely to disagree that it's good to let lots of children gather together and sleep in the same room. However, this is due to a higher number being undecided rather than a higher number agreeing.

Those from Asian households are most likely to disagree that it is good to let lots of children gather together and sleep in the same room. However, they are also the most likely to think that it is good to let a sick child sleep in the same room as those who are well (25%).

Attitudes towards children sleeping in the same room are summarised in Table 16.

Table 16: Attitudes towards children sleeping in the same room by D.I group and prioritised ethnicity

		D.I. Group			Prioritised Ethnicity			
	Total	High	Medium	Low	Māori	Pacific people	Asian	NZ European
It is good to let lots of children gather together and sleep in the same room								
Agree	16%	14%	19%	15%	20%	11%	11%	16%
Disagree	72%	72%	68%	74%	62%▼	80%	83%▲	72%
Undecided	12%	14%	12%	12%	18%▲	9%	6%	12%
It is not good to let a sick child sleep in the same room as those who are well								
Agree	76%	74%	75%	78%	72%	83%	71%	77%
Disagree	15%	18%	15%	14%	17%	9%	25%▲	15%
Undecided	9%	8%	10%	8%	11%	9%	4%	9%

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

Among those living in crowded houses, most are aware that is isn't good to let children gather together in and sleep in the same room (65%), being a similar level to those not living in crowded conditions. Similarly, most are aware that it isn't good to let a sick child sleep in the same room as those who are well (66%). However, there is still room to further improve these attitudes among those living in crowded conditions.

Attitudes towards children sleeping in the same room by living condition are shown in Table 17.

Table 17: Attitudes towards children sleeping in the same room by living condition

			Living Condition	
		Total	Crowded	Uncrowded
It is good to let lots of children gather together and sleep in the same room	DISAGREE	72%	65%	72%
It is not good to let a sick child sleep in the same room as those who are well	AGREE	76%	66%	76%

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

5.5.3 Knowledge and attitudes by living condition

Parents living in crowded households have a similar level of knowledge about the consequences of rheumatic fever as those living in uncrowded conditions. They also have a similar level of knowledge about the higher risk of rheumatic fever among Māori and Pacific people.

In terms of checking sore throats, there is very high agreement among those living in crowded houses that all sore throat need to be checked by a doctor at 82%. There is also very high agreement that getting a child's sore throat checked by the nurse is usually free and that some schools swab children with sore throats to check for infection.

Attitudes towards the treatment of rheumatic fever don't differ by living condition.

Knowledge of the consequences and treatment of rheumatic fever and getting sore throats checked are shown in Table 18 by living condition.

Table 18: Attitudes towards rheumatic fever by living condition

			Living Condition	
		Total	Crowded	Uncrowded
Rheumatic fever is caused by a throat infection	AGREE	71%	84%	71%
Rheumatic fever is a serious heart disease that can cause permanent heart damage	AGREE	89%	90%	89%
Untreated rheumatic fever can damage a child's heart forever	AGREE	88%	91%	88%
Rheumatic fever can happen more than once for the same person	AGREE	43%	55%	42%
Rheumatic fever usually leads to blindness	DISAGREE	38%	39%	38%
All sore throats need to be checked by a doctor	AGREE	53%	82%▲	52%▼
Getting a child's sore throat checked by the nurse is usually free	AGREE	52%	73%▲	51%▼
Some schools swab children with sore throats to check for an infection that can lead to rheumatic fever	AGREE	33%	73%▲	31%▼

		Total	Living Condition	
			Crowded	Uncrowded
All primary schools have programmes to treat rheumatic fever so there is no longer any need to worry about it	DISAGREE	78%	69%	79%
Giving a child Pamol will prevent rheumatic fever from developing	DISAGREE	87%	76%	87%
Rheumatic fever can be treated by a doctor with antibiotics	AGREE	59%	68%	59%
A child being treated for a sore throat can stop taking medicine when they appear well	DISAGREE	89%	85%	89%
Rheumatic fever is more common in Māori children than Pakeha	AGREE	55%	58%	55%
Rheumatic fever is more common in Pacific people than Māori	AGREE	28%	19%	28%

▲/▼ Significantly higher / lower than other groups combined at 95% Confidence Level

5.6 Summary

Since the implementation of the Rheumatic Fever campaign the highest increases in awareness (14% or greater increase) has been that:

- Rheumatic fever is caused by a throat infection
- Rheumatic fever is a serious heart disease that can cause permanent damage
- Untreated rheumatic fever can damage a child's heart forever
- All sore throats need to be checked by a doctor
- Rheumatic fever is more common in Māori children than Pakeha

Although increasing since the implementation of the Rheumatic Fever campaign, there has been more moderate increases in awareness (6% to 10% increase) that:

- All sore throats in school aged children should be checked by a doctor or nurse straight away
- A child who has a sore throat but no other symptoms does need to see the doctor
- Getting a child's sore throat checked by a nurse is usually free
- Some schools swab children with sore throats to check for an infection that can lead to rheumatic fever
- Giving a child Pamol will not prevent rheumatic fever from developing
- Rheumatic fever can be treated by a doctor with antibiotics
- A child being treated for a sore throat cannot stop taking medicine when they appear well
- Rheumatic fever is more common in Pacific people than Māori
- It is not good to let lots of children gather together and sleep in the same room

The rheumatic fever related attitudes and behaviours that did not change significantly after implementation of the campaign were:

- Rheumatic fever can happen more than once for the same person
- It is not good to let a sick child sleep in the same room as those who are well