Healthy Attitudes and Community Engagement project: Evaluation report

Report prepared for the Health Innovation Centre

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Acknowledgements

We wish to thank the persons
who so kindly participated in this evaluation.

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1 SUMMARY

INTRODUCTION

- The initiative being evaluated was undertaken by the Health Innovation Centre as part of the Healthy Families NZ initiative.
- The overall aim was "to increase the conversation within isolated communities about modifiable aspects of long term conditions with the anticipation of motivating a community response to making change."
- A mobile health service was delivered using free pop-up opportunistic testing at places like supermarket carparks, to identify people with, or at risk of, diabetes, preventable chronic illnesses and long term conditions.
- Other components were: community speaking engagements, healthcare professionals' two day workshops, and health and awareness promotion via social media.
- Dr Tom Mulholland was the lead person and he was supported by Barbara Docherty, Kate Berridge and a team of nurses.

EVALUATION METHOD

- The **process evaluation** was informed primarily by review of initiative documentation and interviews with the three personnel who delivered the initiative, plus the initiative administrator.
- Data for the **outcomes evaluation** of patients who attended the mobile clinics was collected via follow-up phone interviews with 200 patients, at least three months after they received their testing.

KEY FINDINGS

Based on a generic rubric, the initiative was given an overall merit rating of 'very valuable' (the second highest level). The merit ratings for the individual components were as shown below.

COMPONENT OF INITIATIVE	MERIT RATING
Design	Extremely valuable
Implementation by Health Innovation Centre	Very valuable
Overall implementation	Valuable
Outcomes	Very valuable
Overall	Very valuable

The fol**lowing are the key learnings:**

- **This initiative was a highly effective way to reach persons not regularly accessing primary care services.**
- **The nature of the initiative and the way in which advice was delivered produces high levels of reported behaviour change and improvements in the health conditions.**
- **Initiatives such as this can produce a reasonable level of follow-up with GPs, but it would**

be worthwhile seeing whether this can be improved, especially for Māori.

- **There needs to be sufficient forward planning and lead times, so that all key stakeholder groups are adequately organised, sufficiently engaged with the initiative, sufficiently clear about their responsibilities, and are able to fulfil on their required role.**
- **It is difficult to generate sufficient demand for two day workshops with health professionals, especially GPs.**

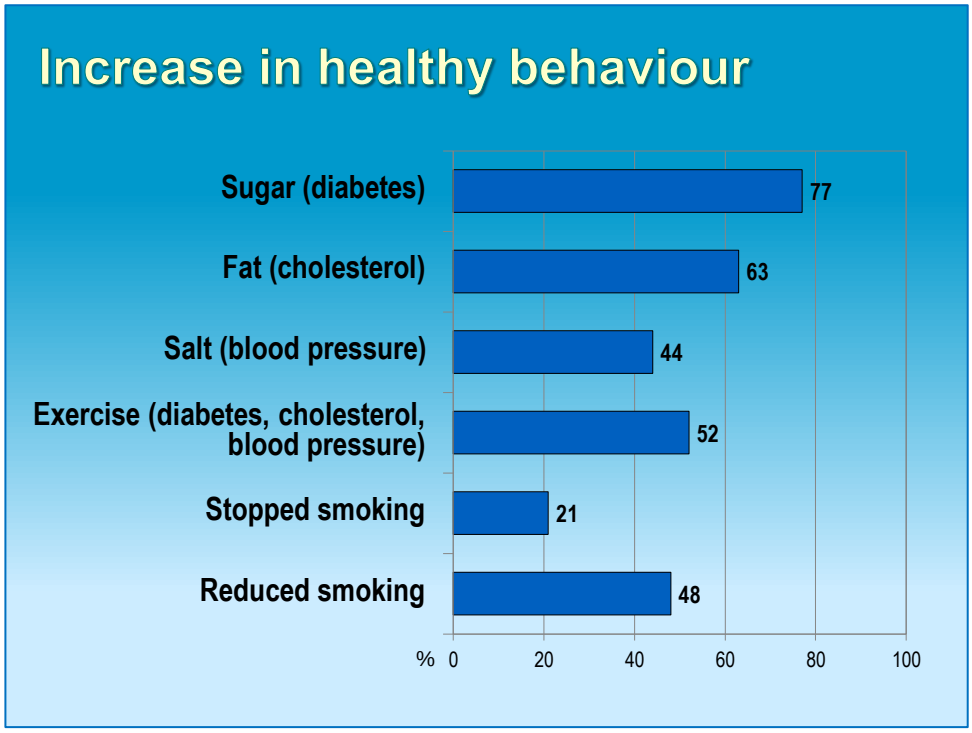
OTHER FINDINGS

Process evaluation

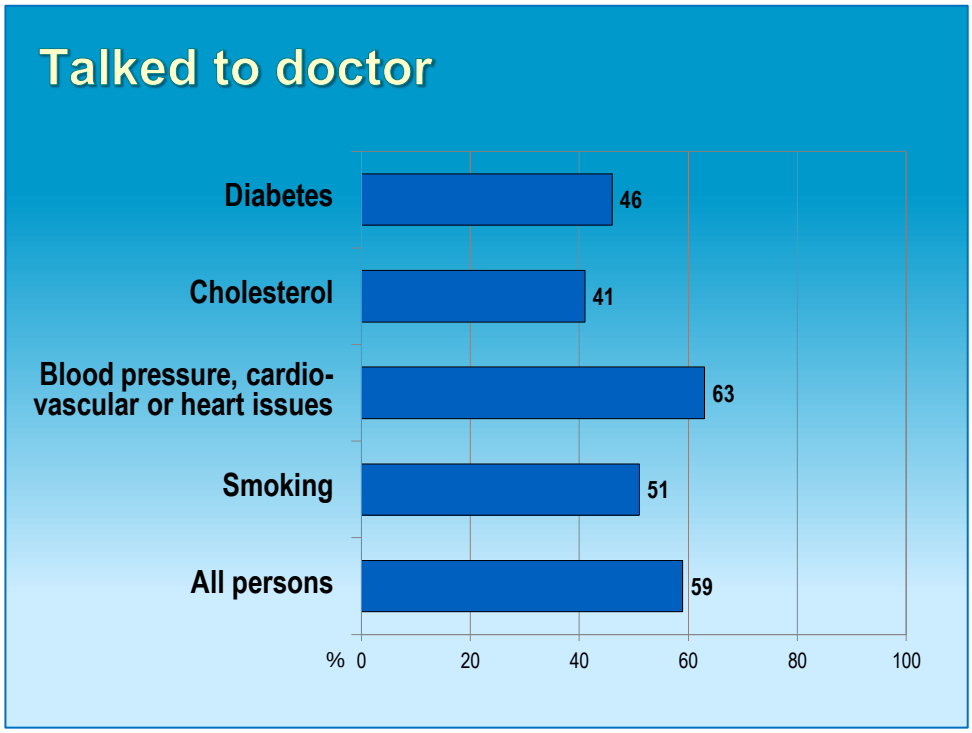
- 1,012 patients were tested at the mobile clinics (target of 1000).
- More than 2,000 persons attended community presentations by Tom. Thirty-four of the self - targeted 40 presentations were completed. The shortfall was mostly due to Healthy Families Manukau-Manurewa-Papakura not arranging any talks at the end of the contract, despite time allocation being made for them by the provider. The limited feedback available was very positive.
- Eighty-nine health professionals attended nine of ten two day workshops which had been planned. The target of ten workshops was not achieved and numbers were lower than expected in some of the others. The evaluation forms rated the workshops highly.
- The social media component was very successful, with three different videos receiving between 16,000 and 27,000 views. The total video views were 115,600 and Facebook page received a total of 3,506 likes. The main form of comment on Facebook was people encouraging their friends to be tested and sharing their own success stories to encourage others.
- There were some challenges with service delivery, including: variable support from the local Healthy Families teams, local DHBs and PHOs; personnel changes at the Ministry of Health; and insufficient project management by the Health Innovation Centre team early in the initiative.

Outcome evaluation

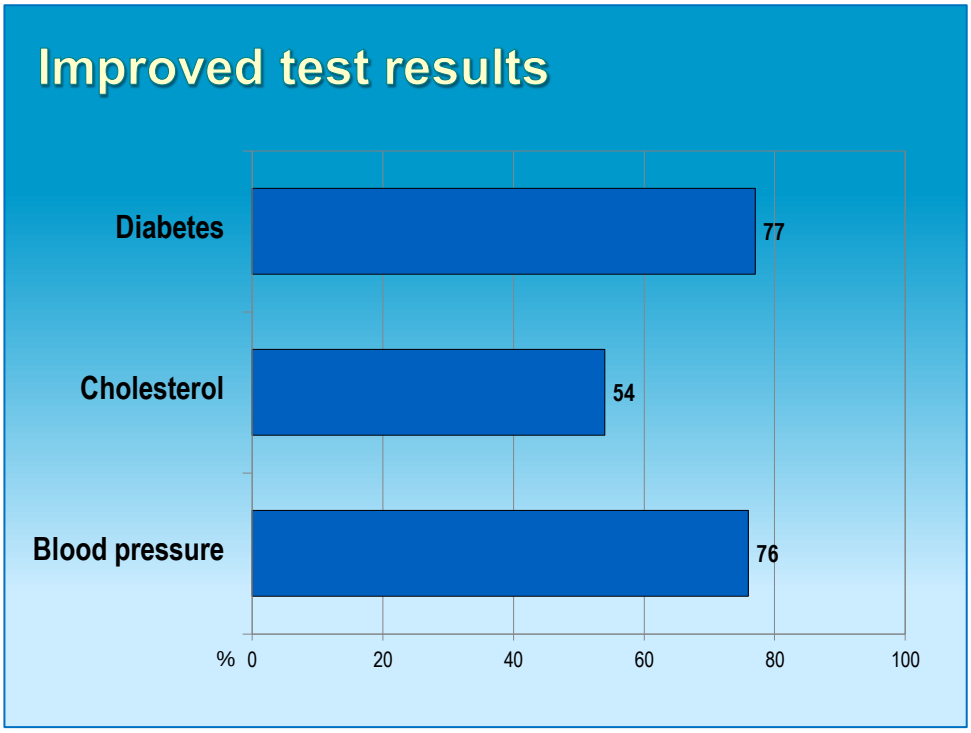
- The reported increases in healthy behaviour since the testing by Dr Tom were as shown in the graph below.



- Fifty-nine percent of all patients interviewed said they had talked to a doctor since the testing. The levels ranged between 41% and 63% for the different conditions.



- Between 54% and 77% reported improved test results.



- Forty-one percent of all those interviewed reported improved energy levels.
- Just over a third (34%) reported a weight reduction, while 16% reported an increase.
- Ninety-seven percent rated the meeting as helpful, with almost three quarters (72%) rating it as 'very helpful'.
- Eighty-eight percent agreed it had helped them learn their health numbers.

CONCLUSIONS

- The outcome data will have a degree of over-claiming, with some patients wanting to be seen to have done what the doctor had recommended. Even allowing for this, but taking into account the difficulty of getting people to make behaviour change and to get them to visit a GP, the results were very positive.
- There would appear to be a large unmet need in these communities, that a service such as this can help address.
- The model is definitely sustainable, if Tom continues to be the lead person.
- Given the unique nature of Tom's approach, including the use of the old ambulance and actively seeking those communities that are harder to engage (e.g. rural communities, forestry employees), it is difficult to know how effective any other service provider might be in attempting to deliver a similar type of service.

RECOMMENDATIONS

It is recommended that:

- the Ministry of Health give serious consideration to funding further similar initiatives, providing Dr Tom Mulholland is available as the lead;
- this should exclude professional training, unless sufficient demand can be demonstrated;
- there be sufficient funding to allow for the involvement of a social media agency and professional video production;
- there be sufficient funding to allow for a follow-up call to all at risk participants; and
- there is further evaluation to ascertain the benefits of the social media agency involvement and the follow-up calls.

2 INTRODUCTION

Dr Tom Mulholland has established 'Doctor on a Mission' where he takes his converted old ambulance to locations around the country and provides health checks and other services (https://www.facebook.com/drtomonamission). Following a competitive tendering process the Ministry of Health contracted Dr Tom Mulholland from the Health Innovation Centre (HIC), in partnership with, Barbara Docherty and Atlantis Healthcare to provide specified services as part of the Healthy Families NZ initiative. As specified in the contract with the Ministry of Health, "The overall aim is to increase the conversation within isolated communities about modifiable aspects of long term conditions with the anticipation of motivating a community response to making change."

The five components of the service that the Health Innovation Centre was contracted to provide in the ten Healthy Families NZ communities were:

1. A mobile health service
2. Community speaking engagements
3. Healthcare professional engagement
4. Health awareness and promotion, through use of social media
5. Evaluation of the effectiveness of the service for people at risk of long term health conditions.

Tom included Barbara in the team to reduce the risks associated with delivery being dependent solely on him, in case he became unavailable due to unforeseen circumstances. The Atlantis role in the initiative ended at an early stage. Barbara became unwell towards the end of the initiative and she was replaced by Kate Berridge. Due to the challenges of dealing with the variety of Healthy Families kaupapa and staff, a project manager Lisette Rawson was employed after the project began, to be the contact person with the Health Innovation Centre and Ministry of Health and stakeholders.

Mobile health service

The objective of the mobile health service was to provide 'pop-up clinics' ('More Heart and Diabetes Checks') to identify people with, or at risk of, diabetes, preventable chronic illnesses and long term conditions. To qualify for testing persons had to have not had a blood test for diabetes or cholesterol (lipids) in the previous three years. There was no charge for the testing. The results were to then be supplied to local GPs for follow-up services as required.

Patients were to be supplied with information and tools on health conditions and related management at a suitable level for the recipient's health literacy, as well as being culturally appropriate. Patients were also to be supplied with a referral to the local GP, or provided with primary care contact information as a way of enabling them to reconnect with their local primary care provider.

Conditions being tested for

The following conditions were tested for and the risk levels used in this initiative were as follows:

- Diabetes: A HbA1c greater than 40. This indicates pre-diabetes and potential diabetes and can lead to retinopathy, renal failure and small vessel disease, which can lead to amputation.
- High cholesterol: A Chol/HDL ratio greater than 4.0. This indicates hyperlipidaemia and can lead to an increase in cardiovascular disease.
- High blood pressure: Systolic greater than 140mmhg. This indicates hypertension and can lead to heart failure, stroke and myocardial infarction (heart attack).

- Lung capacity of smokers was tested to give a FEV6 reading.

Community speaking engagements

At the same time as he was doing testing in a community, Dr Mulholland was to also undertake speaking engagements that highlighted the risks of unhealthy lifestyle choices and the positive changes people can make to mitigate the risks.

Healthcare professional engagement

The Health Innovation Centre was also contracted to provide 10 two-day workshops utilising tools including 'Healthy Thinking' and 'Training and Development Services (TADS)' training. The sessions were to be undertaken in the ten Healthy Families NZ communities, with PHO involvement in the coordination of the workshops. Attendees to these workshops were to be charged $100 plus GST for the two days.

HINT training was the name given to the workshops, which stood for Healthy Innovation Neural Training. Barbara or Kate ran one day and Tom the other. Barbara and Kate's sessions addressed effective strategies for engaging with patients to increase the likelihood of behaviour change. Barbara modified her three day TADS training into a one day module. Tom's sessions addressed how to change your way of thinking, using his Healthy Thinking approach, which has been documented in his books and used in many previous workshops, including workshops evaluated for Farmstrong (Wyllie, 2016)[1].

Health awareness, through use of social media

This entailed the promotion of health awareness through social media, by publicising the services, success stories and links to supporting resources.

To achieve this, Tom revisited regions to follow-up with persons tested and identify case studies which could be used in social media.

Healthy Families NZ locations

The 10 locations were:

- The Far North
- Waitakere
- Manukau
- Manurewa-Papakura
- Rotorua
- East Cape
- Whanganui-Rangitikei-Ruapehu
- Lower Hutt
- Spreydon-Heathcote

[1] Wyllie A. (2016) Farmstrong impacts in first 13 months: July 2016, Report prepared for FMG, Mental Health Foundation, Movember and Accident Compensation Corporation.

- Invercargill

Manukau and Manurewa-Papakura combined operationally, as Manukau-Manurewa-Papakura.

Evaluation

Wyllie & Associates were brought in as evaluators after the initiative was underway, following the decision not to continue with Atlantis.

This is primarily an outcomes evaluation, addressing the question: How effective was it? Process evaluation components have also been included to address the quality of the initiative design and implementation.

3 EVALUATION METHOD

The **process evaluation** was informed by a review of initiative documentation and interviews with the three key personnel who delivered the initiative, plus the Health Innovation Centre project manager. All were interviewed by phone and there was a further face to face meeting with Tom.

Data for the **outcomes evaluation** of patients who attended the mobile clinics was collected via follow-up phone interviews with patients, at least three months after they received their testing. They had been provided with a Subject Information Sheet at the time of the testing, advising them of these follow-up interviews and were provided with the option of opting out.

A target of 200 completed interviews was set and this was achieved. The response rate was 55 percent, but this was mainly due to people not being successfully contacted before the regional quota was filled. There were in fact only two refusals, which was an extremely good result.

The interviews were undertaken by phone and the data recorded into a Survey Monkey questionnaire. Key demographic and risk factor data was entered on to the questionnaire prior to calling the patients, as this was needed to identify which sections of the survey they needed to be asked.

Most of the interviews were undertaken by a medical student, who was personally briefed by the evaluator beforehand. The balance was undertaken by a nurse who was involved in undertaking the testing, plus an experienced interviewer. Both were briefed by the evaluator prior to interviewing. Most interviews were recorded and the evaluator listened back to 10 percent of the interviews, as a quality control procedure. The interviews were undertaken between 26 June 2016 and 25 May 2017 and typically lasted five to 10 minutes.

In the reporting, any sub-group differences reported were statistically significant at the 95% confidence level, unless otherwise specified.

As the **community speaking** sessions were only 60 to 90 minutes it was not appropriate in most cases to ask participants to complete an evaluation form. However, some feedback was obtained from two of these meetings.

Participants at the **healthcare professionals' workshops** completed short evaluation forms at the end of the workshops.

The **merit of the initiative** has been evaluated using the following generic rubric. Merit has been assessed for:

- Quality of the design
- Quality of the implementation by the Health Innovation Centre
- Overall quality of the implementation
- Effectiveness (outcomes)
- Overall merit, based on these three

GENERIC RUBRIC	EXPLANATION
Extremely valuable	Clear example of exemplary performance or best practice; no weaknesses
Very Valuable	Very good or excellent performance on virtually all aspects; strong overall but not exemplary; no weaknesses of any real consequence
Valuable	Reasonably good performance overall; might have a few slight weaknesses but nothing serious
Marginally valuable	Fair performance; some serious (but non-fatal) weaknesses on a few aspects
Unacceptable	Clear evidence of unsatisfactory functioning; serious weaknesses across the board or on crucial aspects

4 PROCESS EVALUATION FINDINGS

4.1 INITIATIVE DESIGN

Mobile clinic

The initiative was designed by Dr Tom Mulholland, to reach persons who were at risk of health conditions but may not be registered or going to a GP. This was believed to be particularly prevalent in high needs areas, which were the regions the Healthy Families NZ initiative was working with. The assumption was that people would be willing to be tested if it was free and access was made easy, by taking the medical service to where the people were. This approach and the provision of a patient friendly form of engagement was expected to fulfil the aim of increasing the conversation about modifiable aspects of long term conditions, with the anticipation of motivating a community response to making change. Rather than this being a one-off intervention, the intention was to link these people to a local GP and encourage them to visit the GP.

The considerable merit of this design was evidenced by the following (details are provided in the Outcomes Evaluation chapter):

- High numbers queuing for testing and being tested
- A high level of pathology identified among those tested
- Identification of risk factors among persons that might normally be assumed to be low risk, such as normal BMI Caucasians with high HBA1C
- A high proportion reporting having taken actions to address their health conditions
- A high proportion reporting improved health numbers
- A high proportion reporting that the intervention had helped them to understand and learn their health numbers
- The health test results were provided to local GPs in most instances
- Around a half reported having visited a GP since the testing for each of the conditions
- Positive feedback from patients

It was reported by the team that feedback had included patients stating that they were more likely to listen to the korero, as they were being engaged with in their environment. This meant a more relaxed engagement and patients were able to make more of an effort to listen, to understand and change, because the service had made an effort to come and see them.

The team noted that many commented that they never saw a doctor, or if they did it was only when they were sick. Their health professional was often too busy sorting out illness, to be able to spend time on wellness and prevention.

Community speaking engagements

Taking the opportunity to utilise Toms skills as a public speaker (he is a sought after paid public speaker) while he was visiting a community for testing was also a positive design feature.

Healthcare professional engagement

The idea behind this was to educate the local GPs so that they were more skilled at engaging with their patients and assisting them to develop and implement change strategies to address their health conditions. This would make them familiar with the approach being used by Tom and the others when there were engaging with the patients.

While this was a worthy objective, the challenge was to get GPs to prioritise this sufficiently to be willing to take two days away from their practice. As reported in more detail later, the attendance at these workshops, particularly from GPs, was generally disappointing.

Barbara believed that it is nurses rather than GPs who do most of the behaviour change education in primary care. There was a much higher level of participation by nurses than GPs.

Health awareness, through use of social media

The intention was to use social media, particularly Facebook and You Tube, to increase the impact of the initiative, by highlighting success stories. Given the potential for high numbers of people to be reached, this was another strength of the initiative design.

Conclusions on merit of initiative design

Using the generic rubric specified in the Method chapter, the design is given the highest rating of 'extremely valuable'. While there were limitations to what could be achieved with the healthcare professional engagement component, in large part this was due to problems with implementation rather than design.

4.2 SERVICE IMPLEMENTATION

Overview of service implementation

The table below summarises the outputs for the initiative. There were challenges which contributed to variable numbers attending the community speaking engagements and some disappointing numbers attending the professional healthcare two day workshops. More details are provided below.

An estimated 2,253 attended community speaking engagements over 34 events, plus a podcast. The mean attendance at each engagement was 66. The 34 events plus podcast was less than the target of 40 which the Health Innovation Centre set for themselves.

The healthcare professionals' workshops were attended by 72 participants, with two in Rotorua and one in each of the other regions except Whanganui-Rangitikei-Ruapehu. This gave a total of nine workshops out of the targeted 10. There was a mean attendance of ten per workshop.

NUMBERS PARTICIPATING	Total number participating	Mean

Tested at mobile clinic	1,012	NA
Speaking engagements	2,253	66
Health professional 2 day workshops	89	10

NA = Not applicable

Challenges encountered

There were some challenges with the service intervention, many of which were beyond the control of those delivering the service.

Support from Healthy Families NZ teams

The level of support for the initiative by the Healthy Families teams in each region varied enormously. Some welcomed the initiative, whereas others saw it as an intrusion. It had been expected that the Healthy Families teams would organise locations for testing, organise and promote the community speaking engagements and healthcare professionals' workshops. There were only two regions where this was done really well and this was generally reflected in much higher levels of community speaking engagements, attendance at the healthcare workshops and media coverage. In the other regions there was often a lot of time required for Tom and others, especially the project manager, to plan the logistics of testing locations, community speaking engagements and healthcare professionals' workshops.

The two regions where the delivery worked particularly well were Healthy Families Invercargill and Healthy Families Lower Hutt. In Healthy Families Invercargill they had Tom booked for six well attended speaking engagements, 127 persons were tested, Mayor Tim Shadbolt got involved which provided a social media opportunity, and there was good local media coverage organised. In Lower Hutt, the Healthy Families team had organised the Mayor and Fats, a former gang member (more about this later) to take a key role, with both featuring on social media.

It had been planned that a speaking slot at the National Healthy Families NZ conference in Wellington in 2016 would enable Tom and the team to introduce and explain the initiative. Unfortunately they arrived at the conference to find that no speaking slot had been provided for them. This missed opportunity contributed to the communication problems and lack of support which followed for this contract. Tom would try and meet a Healthy Families NZ representative in each region in person with each visit. . He felt that there were differences in what Healthy Families NZ in each region wanted him deliver, what the national Healthy Families NZ team wanted and what he thought would be best. For example, in one region the Healthy Families team had organised for one of his community speaking engagements to be with nursing students, who were not the target audience. In another instance he finished up talking to a lunch time meeting of 10 warehouse staff, with no technology provided. He felt examples such as this were a poor use of the budget for his time.

Another factor contributing to the lack of support was that the regional Healthy Families teams were often still getting established, hiring staff and working out what they were going to do. This resulted in Tom often having to make several visits to regions to try and organise what was happening, which incurred unplanned costs.

This lack of support from the regional Healthy Families teams and in some cases the PHOs, resulted in disappointing numbers attending some of the speaking engagements and professional workshops.

The shortfall in the number of completed community speaking engagements was mostly due to Healthy Families Manukau-Manurewa-Papakura not arranging any talks at the end of the contract, despite time allocation being made for them by Tom. He encouraged the Manukau-Manurewa-Papakura Healthy Families representative to talk to a Healthy Families representative in another region to get ideas about how to successfully organise these events. By the time it was apparent that these engagements were not going to take place, there was no time left at the end of the contract period to organise replacements.

The initiative was not able to continue in Spreydon-Heathcote (Christchurch) after the Healthy Families lead provider had their contract terminated and Pegasus PHO declined to engage with the initiative.

In the Whanganui-Rangitikei-Ruapehu region, the Healthy Families team managed the health professionals training in conjunction with other activities for the Men's Health Month, so they took responsibility for the advertising. Despite plenty of interest and suggestion that people would attend, no one registered and the event had to be cancelled a few days beforehand.

Personnel changes at the Ministry of Health

Within the Ministry this initiative was contracted to Diabetes and Long Term Conditions, as well as Healthy Families NZ. At an early stage Tom's main contact at the Ministry of Health went on leave and then left and was not replaced for three months. This required the Healthy Families NZ lead to take a greater role. One of the consequences of these changes was that Ministry of Health communications to PHOs advising them where the testing was being undertaken were not sent for several months. There was also some uncertainty about the role the regional Healthy Families teams were to take in assisting with the initiative.

DHB and PHO support

In addition to the lack of support from the Pegasus PHO in Spreydon-Heathcote, there was also low attendance at the healthcare professionals' workshop in Manukau-Manurewa-Papakura because the DHB decided they did not want people to attend the workshop.

The Health Innovation Centre engaged with PHOs to identify who in the PHO should be contacted to send out the email invitations, which were then sent to that person. There was some follow-up by the Health Innovation Centre to see if the invitations had been sent.

It had been expected that representatives of PHOs would be present at testing to assist with identifying who qualified to be tested and who their GP was (if they were unsure). There was only one region where a PHO representative attended the testing and this was in Lower Hutt. In most regions there were multiple PHOs, so this approach was not particularly feasible and the PHOs were not a vehicle which could be used to assist with linking patients to their GP if they couldn't recall who it was. If a patient was being tested with their husband/wife and one did not have a doctor, the test results were, with the patient's agreement, sent to their husband/wife's GP. Where there was no partner and no known GP, patients were given a contact for a local GP and the test results were sent there. Tom reported that about 20 test results were sent back saying the patient was no longer registered with that PHO.

Project management early in the initiative

At the beginning of the initiative Tom was trying to project manage it, but this was not an effective strategy and, on the Ministry of Health's recommendation, the Health Innovation Centre contracted a part-time project manager. This made a valuable difference in reporting and efficiency of communication between the various parties.

Personnel changes in delivery team

There were some changes in personnel within the delivery team, but this did not have a marked impact on delivery. The ambulance manager, who was also doing testing, left part way through. Barbara Docherty had health problems nein the last quarter of this contract and had to be replaced by Kate Berridge. The approach that Barbara was speaking about at the health professional workshops was one she had developed herself, so it was not possible to replicate this. The initiative was fortunate to be able to replace her with Kate, as she had also developed an approach to working more effectively with persons with health conditions, which she was able to use as the basis of the workshop day.

Mobile Health Service

Numbers tested

The team set their own target of 1000 persons to be tested and the number actually tested was 1,012. The table below shows the numbers tested in reach region. No testing was undertaken in Spreydon-Heathcote or Whanganui-Rangitikei-Ruapehu for the reasons noted previously. It can be seen from the table that the numbers tested provided a good spread across the regions. It should be remembered that Manukau-Manurewa-Papakura was two Healthy Families' initiatives combined, so the greater numbers in this combined region was appropriate.

HEALTHY FAMILIES REGION	Tested N=
The Far North	121
Waitakere	112
Manukau-Manurewa-Papakura	297
Rotorua	103
East Cape	98
Lower Hutt	156
Invercargill	125
Total	1,012

Service delivery

The converted ambulance would set up at the venue, a common one being supermarket carparks. Tables would be set up and testing undertaken nearby by a nurse or nurses. Following the testing either Tom, Barbara or Kate would discuss behaviour change with the patients with at risk results.

Over 90 percent of the behaviours change discussions were undertaken by Tom. It had been planned that Barbara would do more, but this was affected by her moving to Wellington part way through the project, when Tom had been expecting her to do Auckland based work, and then her being unwell near the end of the contract. Each patient took about 15 minutes in total to process.

Each of the three clinical leads had their own approach. Barbara's approach was based on TADS training for brief opportunistic interactions (BOI), whose development she had led over 20 years, beginning at Auckland University. It includes a Personal Assessment Choice Tool (PACT©) which is a very short questionnaire to allow the patient a picture in their mind of their personal behaviours and mental health risks. No one else sees their answers in case their responses are misinterpreted or the risk that health professionals will choose the behaviour they believe the person should change.

From this the person is asked to prioritise one thing (the most important to them) on the questionnaire which they would like to focus on changing. (The questionnaire in this context is destroyed immediately after the patient interaction is complete. Patients never take it away with them regardless of the context.) Personally making their own choice and focussing initially on one thing is different from health professionals telling them all the things they believe they need to do differently to improve their health. The BOI language used is important, so that the patient really feels they are making their own choice and subsequent ongoing self-management. Once they had chosen a behaviour they were then asked: "How do you think making a change to …. [behaviour] might make your blood tests look different in a few months' time?"

There was not always time or a suitable place to complete the PACT© at the sites being used, particularly the supermarkets. In those instances Barbara would use a similar approach but not get them to complete the questionnaire. She would begin by saying: "There are no doubt many things going on in your life right now, but if there was one thing you just don't want in your life any more, something you wish you could change , what would that be?" She would then ask the question about impact on blood tests, at which point they would often ask her questions to get more understanding. Barbara noted that when she did follow-up phone calls she could see people starting to make links between the one thing they had chosen to address and other behaviours they had in their lives. In her follow-up calls, if they reported change, she asked about the main benefit they were getting from this. This would ensure more honest responses, as they would not be able to list benefits if they had not actually been making changes.

Kate's experience and research has identified that the way health professionals interact with patients has a tendency to shame them, which exacerbates the behaviour they are trying to change. She did acknowledge that her approach with patients took longer – 10 to 15 minutes with them, following the testing.

Tom tended to engage with patients in a non-judgmental way, based on what their results were. He noted that many people had not seen a GP and were doing shopping or were in a forest, so time was somewhat limited to investigate too many other causes for pathology. Tom asked patients what in their results was of concern and focussed on that and getting them to follow up with the GP. Those who mentioned stress issues (e.g. in relation to giving up smoking), he gave a copy of one of his books on Healthy Thinking. He thought he had probably provided about 50 of these books to different patients.

Kate felt that Tom manages to avoid any shaming process, as he is good at getting down to the patient level. Tom prepared a behavioural change plan with each patient, which was written on a wallet card for the patient to take away with them.

Barbara felt the inconsistency in approach between the three of them was a weakness. Tom wanted an approach that could be scaled up for others to use, but he felt that this was not an option with Barbara's approach. He was also concerned that, using Barbara's approach, there was no record kept of what issues the patient had identified and which issue they were going to focus on, which limited what could be documented and evaluated.

Tom noted that the public, business and health sector had been largely welcoming of the initiative. Places like supermarkets, malls and companies had welcomed the mobile clinic. Some had offered extra resources in terms of promotion of visits and announcements of the mobile clinic over store PA systems. The mobile health service and range of testing had been well received by individuals. Tom felt that taking health and wellness to the people had improved rural and marginalised people's perception of the health sector.

Details of the patient and their test results were filled out on a form, a copy of which was posted to the patients' GP. This form included the advice/ behavioural change plan discussed with the patient.

Patient follow-up

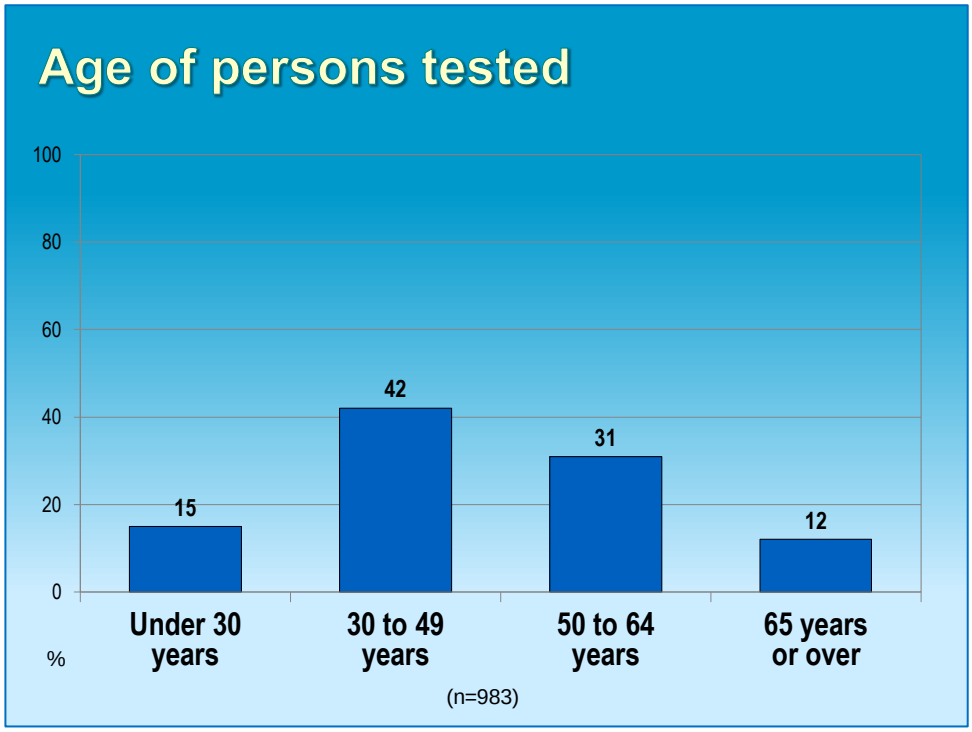
Although there was no follow-up specified in the contract, apart from the evaluation, the team had initially intended that there would be follow-up via texting. This was to be organised via Atlantis Healthcare, but was identified as problematic because of the cost and the fact that some people would not have mobile phones.

Tom undertook ad-hoc follow-up with some patients when he returned to regions. He used this re-contacting as a means of finding good success stories to highlight in social media.

Barbara personally undertook three month follow-up calls with all of the small number of patients she had engaged with, to support them in their efforts to make change. She felt that this was one of the things that worked well – having "robust" follow-up conversations. She felt it would have been interesting to have done some longer term follow-up as well, to see the results.

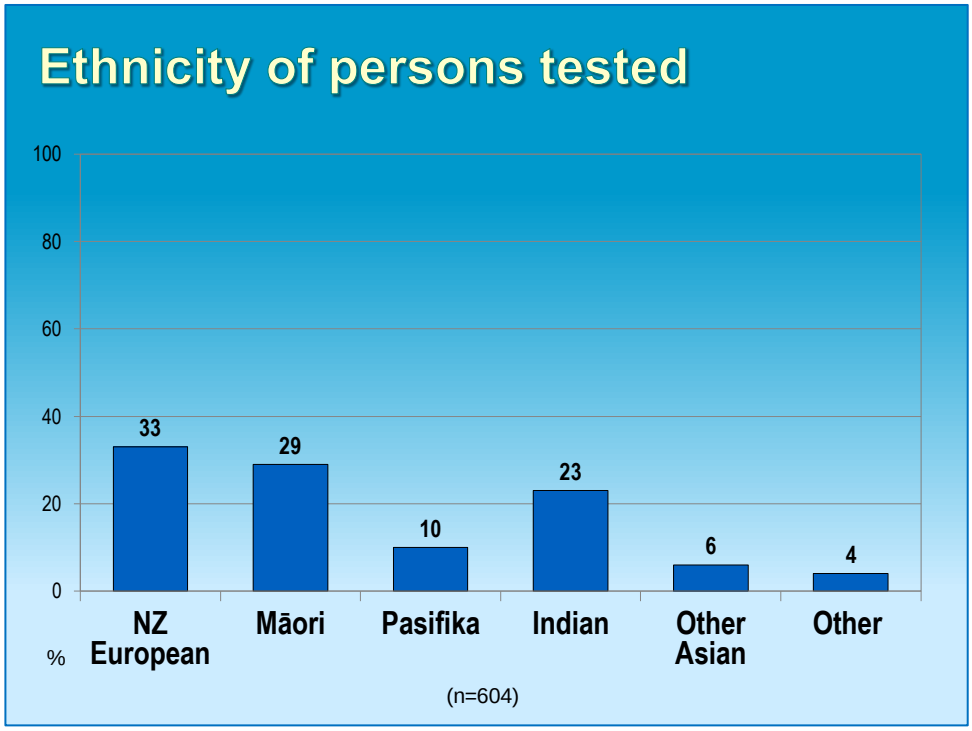
Profile of those tested

Of the 856 tested where gender was recorded, 44% were male. The graph below shows the spread across age groups.



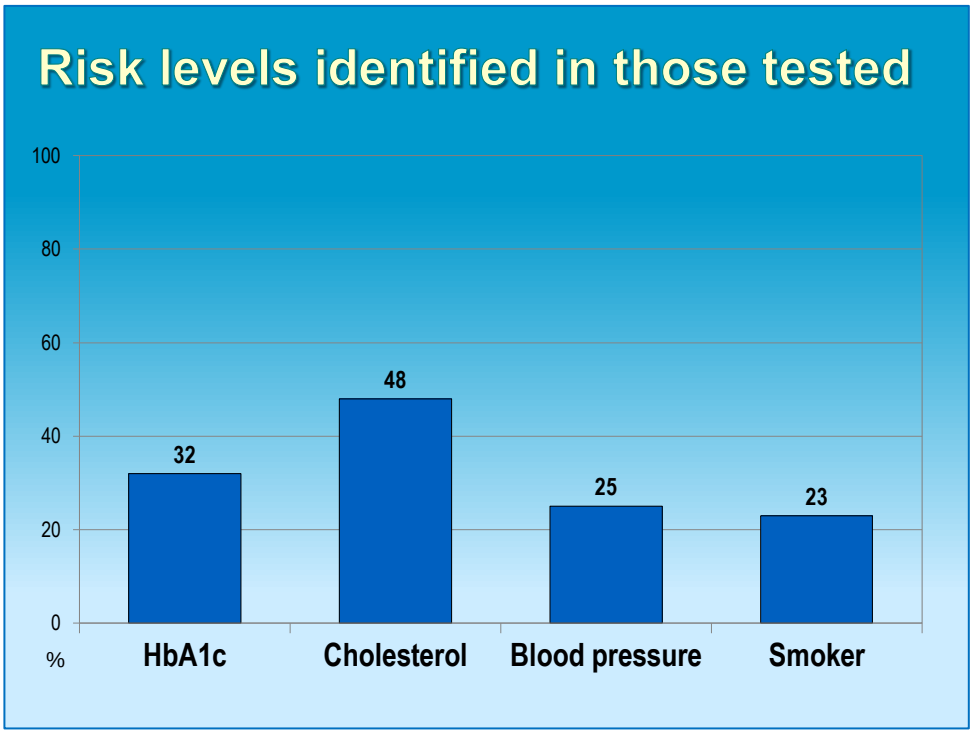
Just under half (48%) of those interviewed in the follow-up survey had been tested at supermarkets or grocery outlets.

The ethnicity data shown in the graph below is based on 604 persons with at least one at risk condition, who had ethnicity data recorded. This was the data base from which the follow-up interviews were selected. Although not all testing had been completed at the time this data base was formed, all seven regions were included, so it should be reasonably representative. Persons were recorded for all ethnic groups they reported.



Proportion with at risk levels

There were 763 persons (75% of those tested) who identified as being at risk of one of the health conditions. As shown in the graph below, the most prevalent condition was high cholesterol (ratios of 4.0 or higher were present in 48% of those tested), followed by being at risk of diabetes (HbA1c levels of 4.0 or higher were present in 32%). A quarter had high blood pressure (a systolic level of 140 or over) and 23% were smokers.



Tom noted that some of those tested were working in dangerous environments, such as driving large trucks, logging and farming. Often people working in these industries were more likely to have high blood pressure, but work long, physical hours. They may be more likely to smoke tobacco and have deteriorating lung function. Symptoms can lead to non-fatal and fatal accidents if they were to lose concentration or black out.

While being a smoker put someone at risk, basic lung function testing was also done in this group. This often revealed a significant drop in FEV6, with some people having lost 45% of predicted lung capacity for their predicted height weight and age.

The table below shows how the proportion with risk levels varied by region. The only region which did not find at risk persons at least 70% of the time was Invercargill. This may reflect the types of settings where testing was done, rather than this region having healthier residents.

Proportion Identified as at risk for….	The Far North (n=121) %	Waitakere (n=112) %	Manukau Manurewa Papakura (n=297) %	Rotorua (n=103) %	East Cape (n=98) %	Lower Hutt (n=156) %	Invercargill (125) %
Diabetes (HbA1c)	34	24	31	31	43	40	18
Cholesterol	50	50	47	50	56	47	42
Blood pressure	18	24	25	22	34	22	29
Smoker	28	27	17	32	36	18	20
Any of these	82	76	76	78	78	72	58

Community speaking engagements

The numbers shown in the table below are based on approximations of the attendances. They total 2,253, from 34 events. Large numbers were reached in some regions. In East Cape there were attendances of approximately 300, 200 and 150, plus there were three other well attended presentations. In Invercargill there were five different presentations, with between 50 and 70 attending four of these. Spreydon-Heathcote also included a Youth TEDX podcast on You Tube with https://www.youtube.com/watch?v=WWSvl_mTmB4 and 6236 views.

Table : Numbers attending community speaking engagements by region

HEALTHY FAMILIES NZ REGION	Number attendingcommunity speaking engagement N=	Number of events N=
The Far North	190	4
Waitakere	55	4
Manukau-Manurewa-Papakura	270	2
Rotorua	310	4
East Cape	830	7
Whanganui-Rangitikei-Ruapehu	62	1
Lower Hutt	84	4
Spreydon-Heathcote	210	3
Invercargill	242	5

All of the community speaking engagements were undertaken by Tom. These generally lasted 60 to 90 minutes. They took place in a range of community settings such as rugby clubs, libraries and Council buildings. Tom felt that these community speaking engagements were likely to be capturing people who may not be engaged with a GP. He felt the health promotion messages regarding diabetes, heart health and lifestyle changes had been well received. Some were requested by Healthy Families teams

for their own team members, as that would help them promote future community speaking engagements.

Tom reported an example of the impact of one of the community presentations. As part of their event, Healthy Families Whanganui-Rangitikei-Ruapehu had free blood testing available. There was limited uptake of this prior to the presentation, but this increased greatly following the presentation.

Only two of these engagements had evaluation forms completed. At an Invercargill Chamber of Commerce organised meeting, all but one of 21 persons reported that they enjoyed the presentation. At the Whanganui-Rangitikei-Ruapehu presentation, 43% reported that it 'exceeded' their expectations, 48% that it 'mostly' met their expectations and the remaining seven percent that it 'somewhat' met them. The delivery of the presentation was rated as 'excellent' by 60%, 'very good' by 29% and 'good' by the remaining 10%.

Comments were only available from the Invercargill workshop. These included:

> *"Was excellent – pity it wasn't longer."*
>
> *"He had a great way of getting the healthy lifestyle message across and not make the presentation boring."*
>
> *"Really enjoyed the presentation, Dr Tom was an amazing presenter and the delivery was very inspiring."*
>
> *"It was very good – obviously there was only a short time to cover off a huge topic but it wetted the appetite and would get a few reflecting and thinking about their own and their family's health and wellbeing, which is what it's all about."*
>
> *"Yes, I thought he was very funny."*
>
> *"A very topical issue and one that any information to assist in improving the workplace is welcome."*

On reflection, Tom thought that if he was doing it again, he would put more focus on workplace speaking engagements rather than with the general community.

Healthcare professional engagement

Eighty-nine health professionals attended the two day workshops. Nine of the planned ten workshops were completed although, as shown in the table below, one of these only had one person attending and another three. The reasons for this were explained in the Challenges section above.

Nurses, mainly practice nurses, accounted for most of the participants, with doctors accounting for less than 10 percent of those attending. Others who attended included: ambulance staff, occupational therapists, dieticians, nutritionists, physiotherapists, pharmacists and radiologists.

HEALTHY FAMILIES NZ REGION	Attended healthcare professional workshop N=
The Far North	14
Waitakere	14
Manukau-Manurewa-Papakura	3

Rotorua (2 workshops)		15+17
East Cape		12
Lower Hutt		7
Spreydon-Heathcote		1
Invercargill		6
	TOTAL	**89**

To increase likely attendance at these two day workshops, the team went through an involved process with the Royal College of GPs to get continuing education (GME) credits for those who attended. Attendance by nurses contributed to their hours of professional training for their professional portfolios.

As already noted, some of the attendance at these two day workshops with healthcare professionals was disappointing. The implementation team acknowledged that they were initially uncertain of the role that the Healthy Families NZ teams in each region were going to play in assisting with recruitment. In one region the local team had worked out a plan to contact all the GPs within a 5km radius of their Healthy Families NZ region and, if this did not generate enough attendees, to approach those within 10km. However the Healthy Families NZ national office then advised them that it was not their role to be assisting with recruitment for these workshops.

Following this, Tom discussed the recruitment difficulties with the Ministry of Health, who then started giving more support by promoting the workshops with DHBs and PHOs. Tom felt this did lead to improved enrolments.

Evaluation forms were completed at the end of the health professional workshops. These were developed prior to the involvement of Wyllie & Associates in the evaluation. Tom reported that it was not easy to access all of these forms to supply to the evaluator at the end of the project. These were summarised and reported in the quarterly reports. He reported that all participants gave ratings of either 4 or 5 on the 1 to 5 scale, where 1 was 'Strongly disagree' and 5 was 'Strongly agree'. The items rated were as follows:

- The handouts/materials were of a high standard
- The workshop content will be relevant to my practice
- The information provided added to my knowledge of the field
- The facilitation was of a high standard
- Overall the quality of this workshop was high

Barbara received some feedback that some participants in her workshop felt frustrated that they were not getting taught enough to be able to make changes. They got a taste, but the full training is a three day course. However she expected attendees would have gone away with a few skills, to assist them to speak more effectively with their patients.

Participant comments included in the provider's quarterly reports to the Ministry of Health included:

"This was the best 2 day workshop I think I have attended."

“Very enjoyable, I wish I had done it sooner.”

“It was useful and does not need improvement - Keep going!”

“I will use this tool in my professional life to help with stressful situations.”

"Excellent workshop, shame I was the only one who attended."

"Both presenters passionate about their subject."

"Very insightful facilitators, very interesting."

"Excellent couple of days, thank you so much, pity not many attendees to benefit from what you offered us."

Health awareness, through use of social media

The use of social media greatly extended the reach of communications designed to build awareness and encourage behaviour change for diabetes, cholesterol, blood pressure and smoking. The Facebook page, Dr Tom On A Mission, gained a total of 3506 likes.

Best Performing Posts

The top four best performing posts, based on likes, are listed below. Posts related to Mongrel Mob member, Fats, received the most amount of engagement.. Following closely behind these three posts, was an article about anti-smoking. From this information, it might be assumed that the audience responds well to having a character, as well as content that is relatable and tells a good story, rather than just statistics.

The 'Dr Tom Meets Fats' and Anti-Smoking article both had over 100 shares. With the average Facebook user having a total of 338 Facebook friends, the 488 shares from just these four posts would have resulted in 164,944 newsfeeds.(There is no method to measure how many of these people actively saw the postings.)

Best performing posts:

1. Dr Tom Meets Fats = 776 likes - 327 shares
2. Picture of Fats after getting HBA1C numbers down = 520 likes - 1 share
3. Fats progress video = 429 likes – 37 shares
4. Article by Dr Tom published in Sunday Star Times and Stuff on Anti-Smoking = 418 likes – 123 shares

Best Performing Videos

There were a total of 115,600 video views. The top three best performing are listed below.

Videos were the best tool to get access to the largest amount of people. They had the highest amount of likes, and they were shared the most. People were more likely to tag their friends to watch videos, than to view a photo.

Top three performing videos:

1. Dr Tom Meets Fats: 27, 000 views.

2. Dr Tom on a Mission – The Mission: 19, 000 views.

3. Fats progress video: 16, 000 views.

Most Talked About Issues

The most common responses on the Facebook page were people tagging their friends and family on content posts and suggesting they get checked.. The second most common theme of discussion on the posts was people sharing their own success stories. An example was a commenter letting Dr Tom know that they were once a smoker for 36 years, but managed to kick the habit.

Other findings

In Spreydon-Heathcote a TED X Youth presentation, which was one of the community presentations, was videoed and included on You Tube. At the time this report was prepared there had been 6,236 online views. This was funded by a third party.

In Invercargill a podcast was undertaken for Radio Southland. If was not known what reach it had.

Tom felt that the level of hits on social media, especially with Fats, was something that will really make a difference in the community.

He also noted that sufficient financial investment in social media is key to get quality videos, exposure and connections, shares, likes and behavioural change.

Conclusions on service implementation

Conclusions on merit of provider implementation

Given the initiative performance on the service implementation was significantly affected by factors largely beyond the control of the Health Innovation Centre, the merit of the HIC performance has been separately rated from the overall performance.

The initiative was successful in achieving its target of 1000 patients tested. It was also very successful in reaching people who were at risk of health conditions. With the possible exception of Pasifika, there was good representation of the different ethnic groups who were likely to be at risk.

Overall the numbers who attended community speaking engagements was also at a high level, with some of the turn outs being impressively large. These high numbers countered somewhat the fact that fewer than the targeted number of workshops were completed.

The healthcare professional workshops did not achieve the target of 10 workshops with only nine delivered due to the Whanganui one being cancelled at the last minute at the end of the contract, so there was no chance to reallocate or reschedule. The attendances generally were not as high as had been expected. This therefore detracted from the overall rating for quality of service delivery.

The social media component was highly successful, with large numbers being reached by some of the content. This was particularly impressive given the low budget allocated for this component. Not only

were large numbers being reached, but the comments indicated the social media was being used by viewers to encourage their friends and family to get their numbers checked. The sharing of stories allows others to see there is possibility for rehabilitation. The Facebook page was providing a healthy and positive space for people to discuss these issues.

Taking all of the above into account, the merit of the Health Innovation Centre implementation has been assessed as 'very valuable' (the second highest rating). The overall merit of the implementation has been assessed as 'valuable' (the third highest rating).

Challenges

A combination of factors resulted in this initiative having a somewhat problematic beginning. In terms of its timing, it was probably in hindsight too early in the life-cycle of some of the Healthy Families teams for them to be able to fully support it. This was coupled with Tom trying to manage the administration and reporting of this initiative, when he really needed someone else to support him in that role, plus the delays in changes of personnel within the Ministry of Health.

Working across different parts of the health sector (in this case Healthy Families, PHOs, and DHBs) and trying to engage them all at the appropriate time in the desired role is never an easy task. So the situation that evolved with this initiative might have been somewhat predictable.

The key learning is that there needs to be sufficient forward planning and lead times, so that all key stakeholder groups are adequately organised, sufficiently engaged with the initiative, sufficiently clear about their responsibilities, and are able to fulfil on their required role.

Follow-up

It is likely that the programme would have been even more successful had there been systematic follow-up with each person, to support them to re-engage with their GP and make behaviour changes. However, such follow-up is costly and so the benefits of that have to be weighed up against the additional cost. In this initiative it was not considered financially viable to undertake this in any systematic way.

The main aim of the initiative as designed and implemented was to make patients aware of their numbers, health risks and get them re-engaging with their GPs. Given they had been tested by Dr Tom and assisted to identify what changes they should make, many probably didn't see a need to re-engage with their GP until they had tried out the changes. So any follow-up to check, to see whether they had re-engaged with their GP and to encourage them to do so, would not want to be done sooner than at three months. If this was being done, it would have been appropriate to undertake the evaluation interviews a little later than this, so that patients were not being called twice in close succession.

Increasing social media impact

Social media agencies are able to direct communications towards target groups and this should result in a much larger reach than the already impressive levels achieved. Improving the quality of the videos may also increase their appeal, viewership and impact.

Other learnings

One of the conclusions Tom drew from this initiative was that everyone needs to be tested because you can't predetermine who is at risk. Some patients they tested, who they thought may have abnormal results actually had normal results, while others who looked healthy and fit on the outside were in fact undiagnosed type 2 diabetics.

Tom also noted that rural areas, such as the East Cape, have significantly more challenges compared to urban areas in terms of the resources needed to for rural and remote communities. He also noted that health literacy was very low in some areas.

5 OUTCOME EVALUATION FINDINGS

Two hundred persons completed follow-up interviews, undertaken at least three months after their testing. The smaller regions were over-sampled, so that there were more similar proportions in each region. In hindsight it would have been preferable if more interviews had been undertaken in the Manukau-Manurewa-Papakura region.

Region	Completed interviews (N=
The Far North	35
Waitakere	30
Manukau-Manurewa-Papakura	26
Rotorua	36
East Cape	32
Lower Hutt	21
Invercargill	20
TOTAL	200

The numbers answering for each health condition (those with at risk levels) were as shown in the table below.

HEALTH CONDITIONS INTERVIEWED ABOUT	N=
Diabetes (HbA1c)	102
Cholesterol	151
Blood pressure	81
Smoking	63

Comparisons were made between the composition of those who completed interviews and those from whom they were selected [2]. This was to see how representative those who completed the interviews were of the group they were selected from. Often surveys under-represent Māori and Pasifika. While there was some evidence of this for Pasifika (6% vs 10% of all those at risk from whom the sample was drawn), this was not the case for Māori (31% vs 29%). Those interviewed under-represented the proportion of Asian persons (who were mostly Indian) identified with risk factors in the testing (17% vs 29%), but the 17% is more consistent with their share of the population, so is an acceptable level. The

[2] The sample was drawn before all the testing had been completed, as it had to be based on those where there was at least three months between testing and the interviews.

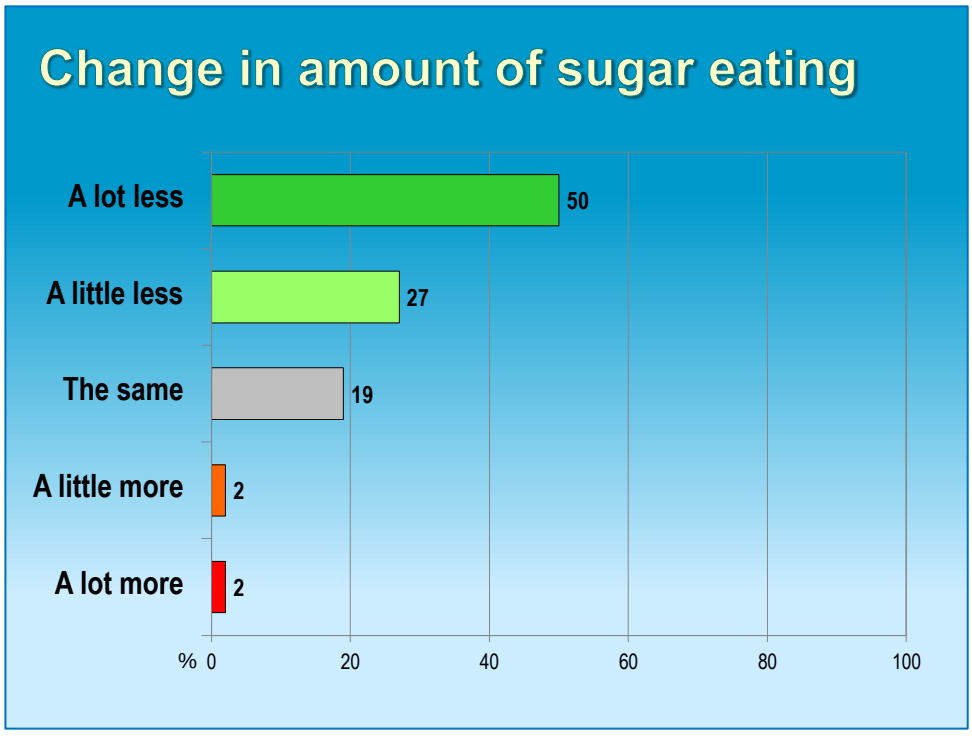
South Auckland Healthy Families contact was Indian, which probably contributed to high proportions of Indians being tested, but not so many Pasifika. The completed interviews were representative of the sample they were selected from in terms of age: under 30 year olds (13% vs 15%), 30 to 49 year olds (37% vs 39%), 50 to 64 year olds (37% vs 33%) and those aged 65 years and over (13% vs 13%). Data was not available on the gender of those who were at risk, but 44% of all those tested were male and 49% of those who completed follow-up interviews were male.

Main issue focussed on since testing

The first question in the follow-up interviews asked what the main issue was that they had been focussing on since the testing with Dr Tom. Most frequently mentioned were: eating less sugar (16%), doing more exercise (13%), losing weight (9%), eating less fat (7%), stopping/cutting down on smoking (4%), amount eaten (3%), and eating less salt (3%). There were 22 percent who said they had not been focussing on anything.

Diabetes

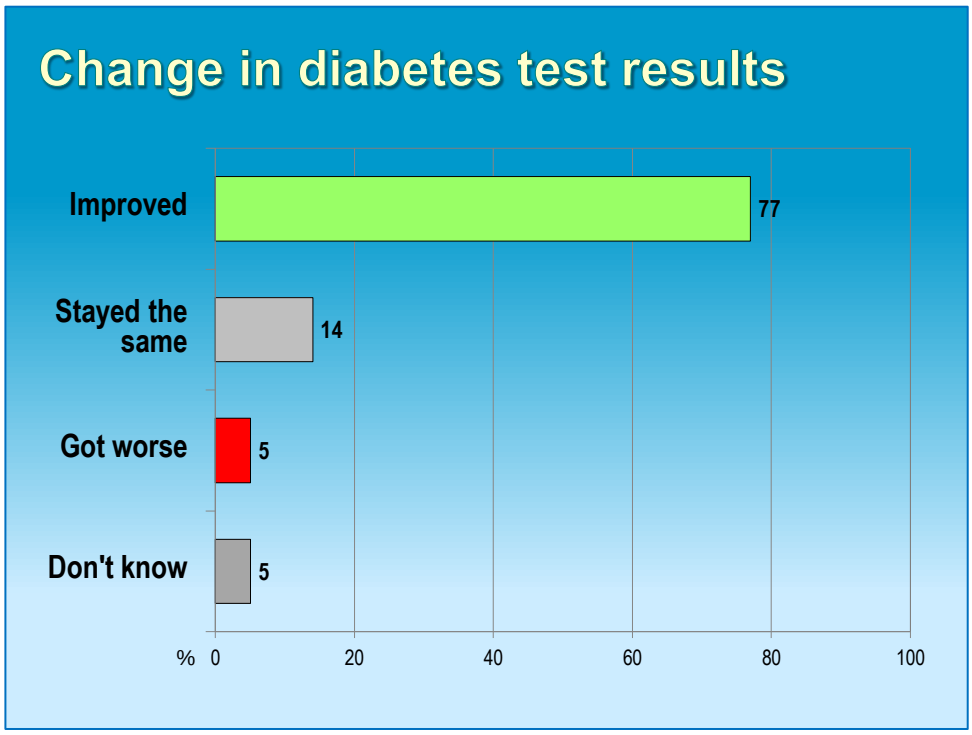
There were 102 persons who completed the diabetes section of the follow-up survey. As shown in the graph below more than three quarters (77%) reporting eating less sugar since they were tested by Dr Tom, while only 4% were eating more. Males were more likely than females to report eating 'a lot less' sugar (60% vs 44% for females). Asian participants were also more likely than the rest of the participants to report eating 'a lot less' sugar (60% vs 51%).



Forty-six percent said they had talked with another doctor about their diabetes risk since seeing Dr Tom and 43% had had a doctor or nurse test their diabetes levels. Males were more likely to report

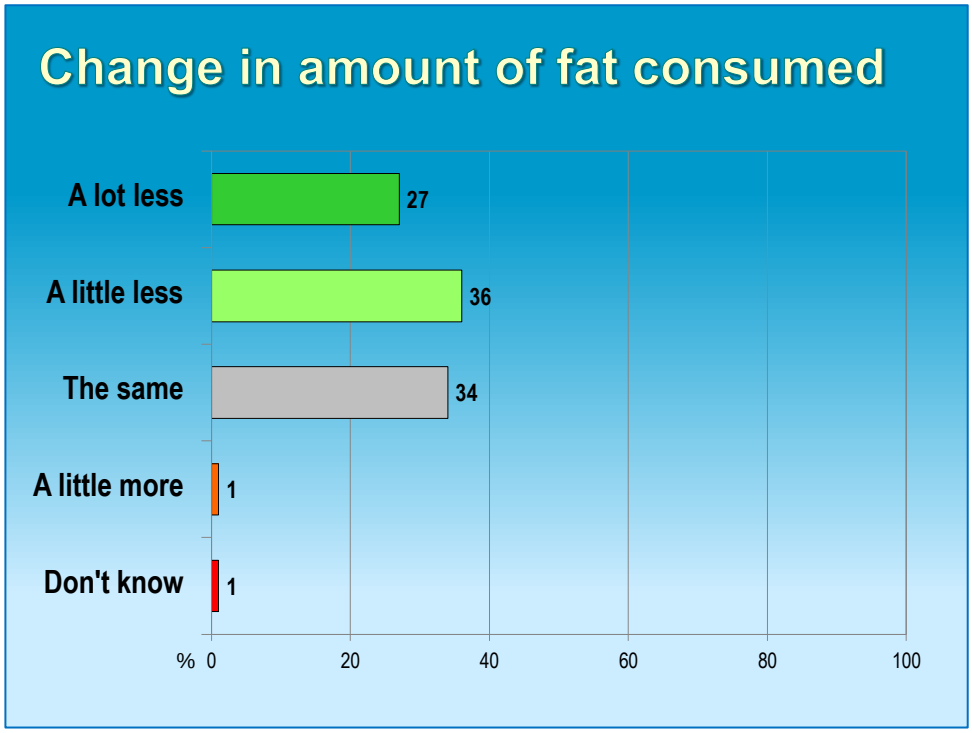
having visited a doctor (55% vs 39%) and having been tested (50% vs 37%). Those aged 65 years and over were also more likely to report having talked to a doctor about their diabetes (59% vs 43% for the others) and to have been tested (65% vs 38%).

Of those who had been tested (n=44), 77% reported that their test results had improved, as shown in the graph below. Of those tested 39% knew it was a HbA1c test and 16% listed levels that were of a level that was probably their HbA1c level.



Cholesterol

Of the 151 who had a cholesterol ratio of 4.0 or higher, 63% reported having reduced the amount of fat they consumed (see graph below). New Zealand Europeans were less likely to report a reduction (50% vs 73% for the other ethnicities combined).

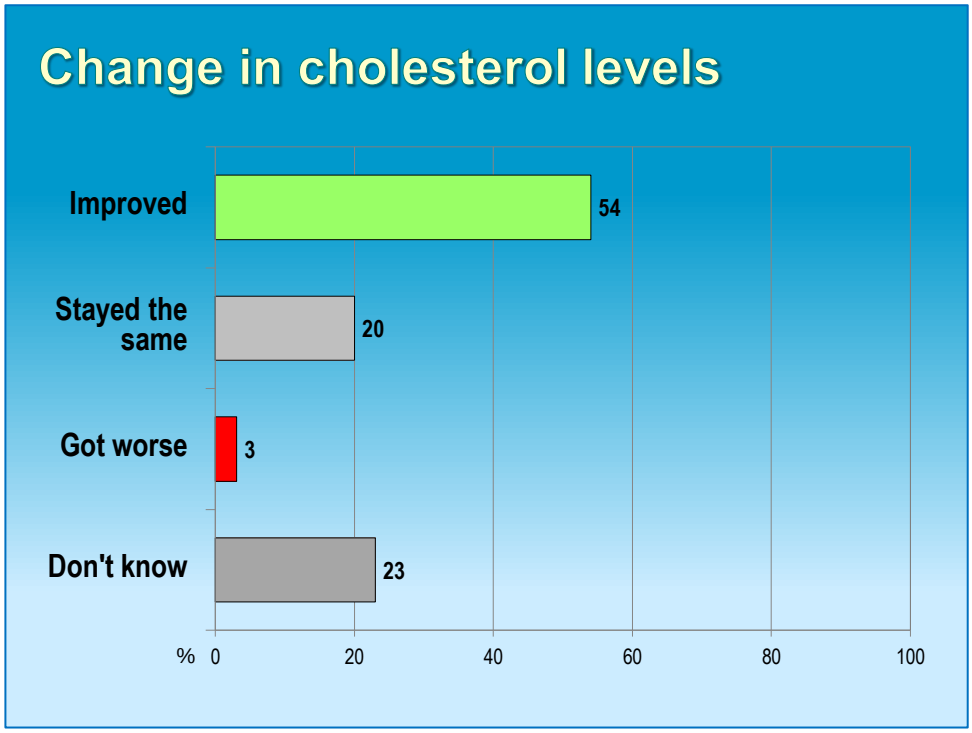


Since seeing Dr Tom, 41% reported having talked to another doctor and 40% having been tested for their cholesterol levels by a doctor or nurse. Males were more likely to report having been tested (45% vs 37% for females), but they were similar to females for having discussed it with a doctor (39% vs 42%).

Those aged under 30 were particularly low for having seen a doctor (13%) and those aged 30 to 49 years (35%) were also lower than those aged 50 years and over (54%). Māori were less likely to have seen a doctor (31% vs 42% for all others) and to have been tested (29% vs 44%).

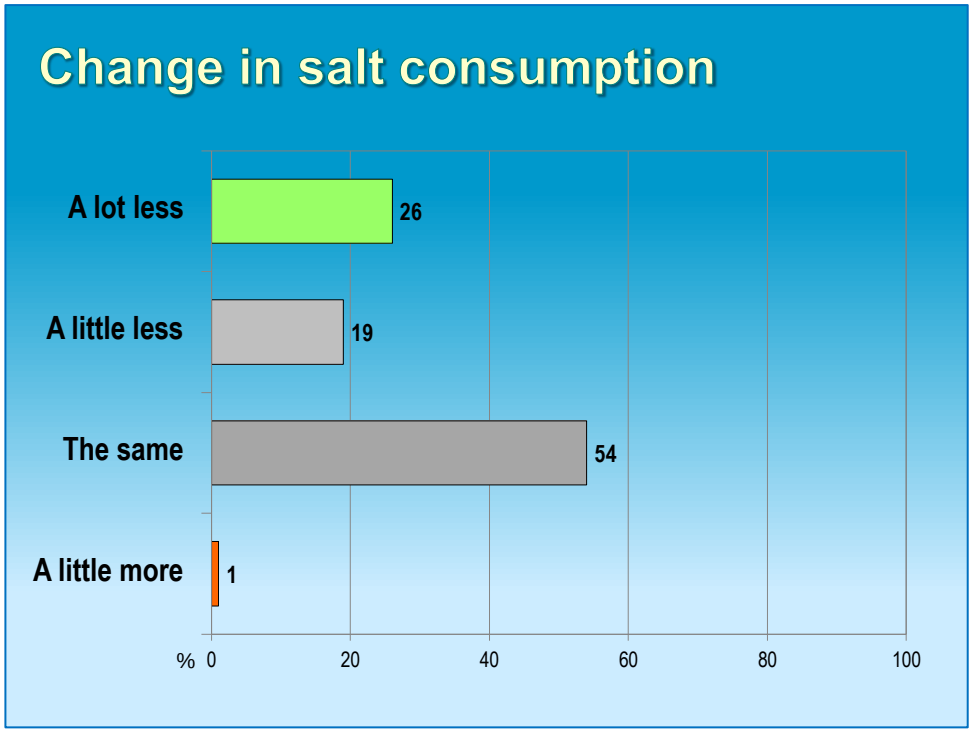
Of this 61 persons who had been tested, just over half (54%) reported that their cholesterol levels had improved. There were almost a quarter who did not know. Males were more likely to report improved results (62% vs 44% for females).

Of those who had been tested, 16% provided a level which was probably their cholesterol ratio.



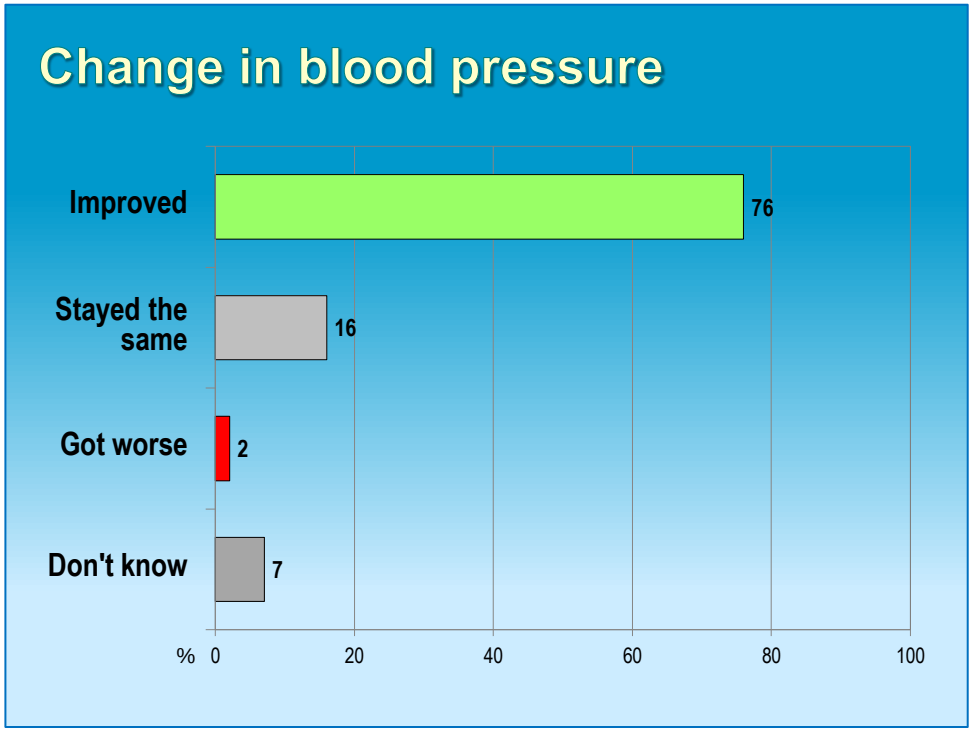
High blood pressure

Of the 81 persons interviewed who had been identified as having high blood pressure, 44% reported reduced salt consumption. Males were more likely to report eating 'a lot less' salt (42% vs 14% for females). The proportion reporting eating 'a lot less' salt increased with decreasing age. The level was 14% among those aged 65 years and over, 20% among those aged 50 to 64 years and 40% among those aged under 50 years. New Zealand Europeans were particularly low for having reduced their salt consumption (30% vs 56% for all others).



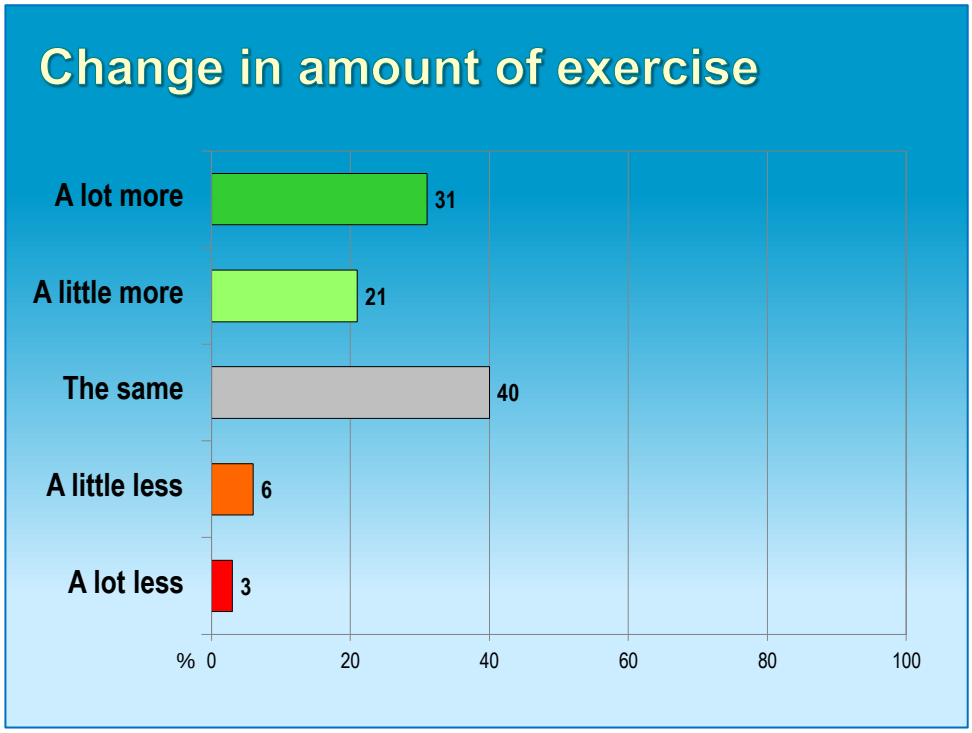
Sixty-three percent said they had talked about blood pressure, cardiovascular or heart issues with another doctor since seeing Dr Tom and 73% said their blood pressure had been tested. Males were more likely to report having seen a doctor (69% vs 58%), but levels were similar between males and females for having been tested (72% vs 74%). Visits to doctors increased with age. Among those aged under 50 years the levels was 45%, among 50 to 64 year olds it was 69% and in the oldest age group it was 79%. Māori were less likely to have seen a doctor (50% vs 64%) and to have been tested (61% vs 76%).

More than three quarters (76%) of the 58 tested reported an improved blood pressure. Males were more likely to do so (88% vs 66%). Of those tested 38% knew at least the first number of their blood pressure.



Exercise

All of but two of those interviewed were at risk for at least one of diabetes, cholesterol or blood pressure. Of these 198 persons just over half (52%) reported having increased their amount of exercise since they were tested by Dr Tom. Males again reported higher levels than females (58% vs 45%). New Zealand Europeans again reported lower levels of improvement, especially for 'a lot more' (28% vs 38%), but the differences were not statistically significant.

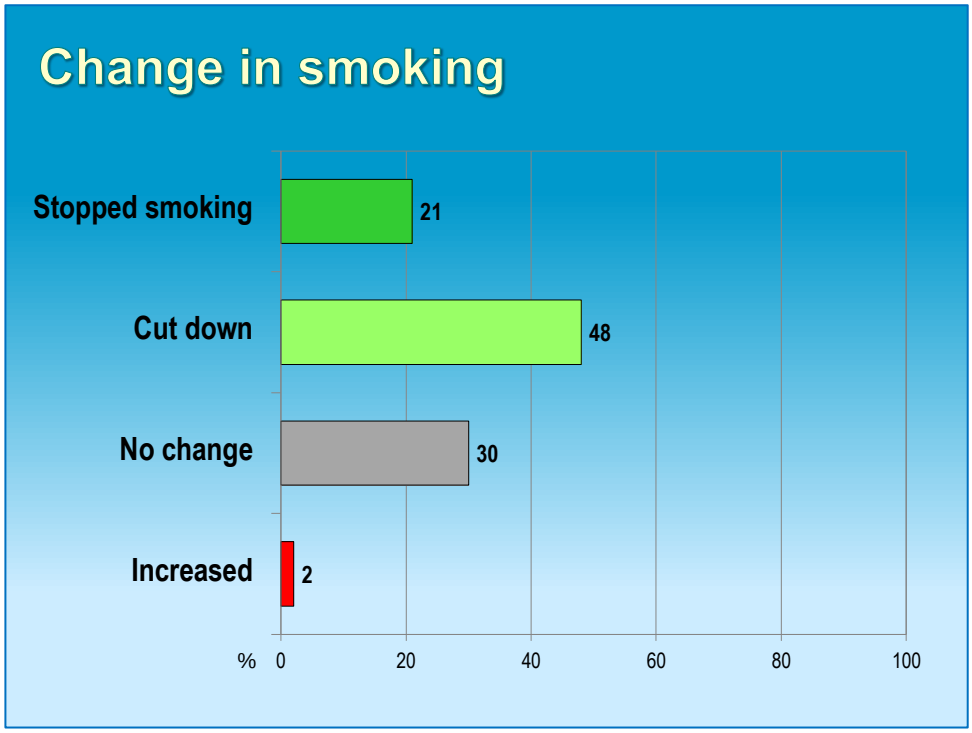


Smokers

Of the 63 smokers interviewed, 21% reported having stopped smoking since their meeting with Dr Tom and another 48% said they had reduced their tobacco consumption. (If they asked, they were told that e-cigarettes and occasional social smoking still counted as smoking.) All but one of the persons who had stopped smoking had done so for at least a month, which gave a percentage for those who had quit for a month plus of 19%. Males were more likely to report having stopped (32% vs 11% for females). Māori smokers were less likely than others to report having stopped (7% vs 28%).

Of the 43 who had stopped or reduced smoking, 37% reported that coughing was less of a problem and 44% that it was easier to breathe. Just over half (51%) had talked with another doctor about their smoking since seeing Dr Tom. Females were more likely to have talked to a doctor about their smoking (60% vs 39%).

Of the 32 who had talked to another doctor, 78% reported that this doctor had advised them to contact other services that might be able to stop them smoking and 66% said the doctor had prescribed products that might be able to help them stop smoking.

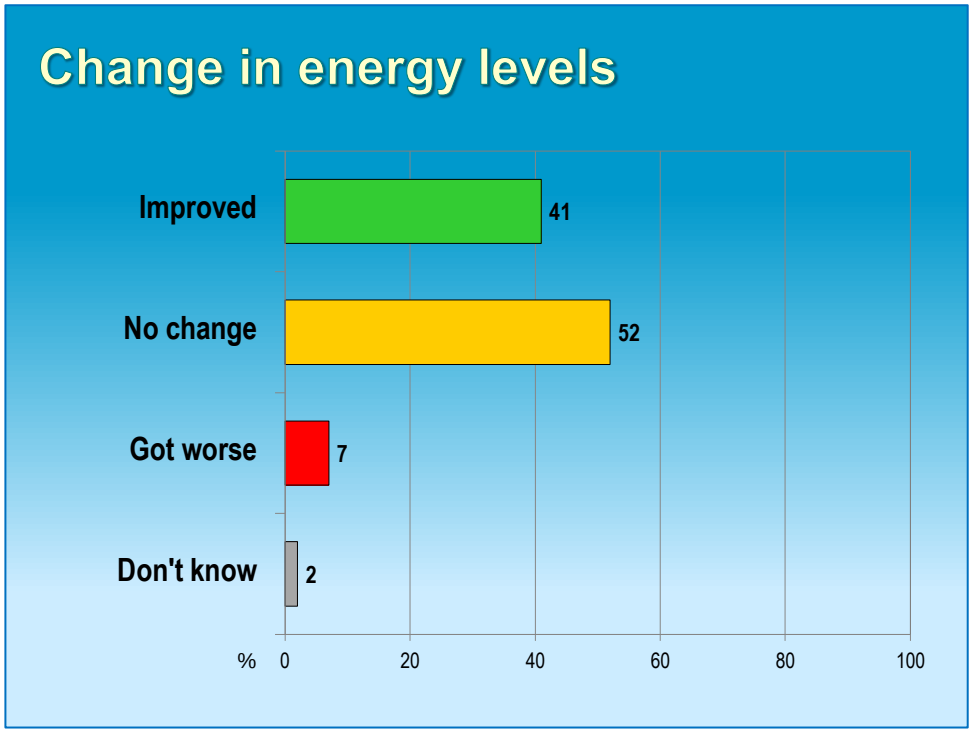


Visits to doctors

In total 59% of those interviewed had been to another doctor since seeing Dr Tom. The 82 persons who had not been to another doctor since seeing Dr Tom were asked if they were planning on going to a doctor within the next month to discuss any of the issues raised. A large proportion (45%) declined to answer and another 17% did not know. There were 20% who said they intended to visit in the next month, while eight percent thought they probably would and another 10% that the possibly would.

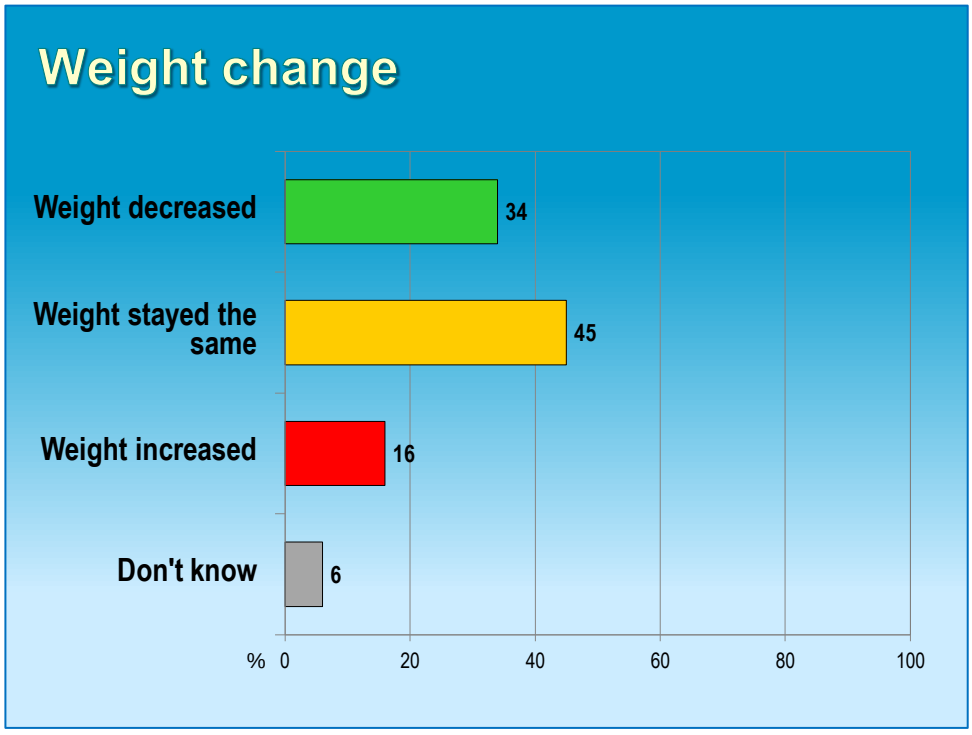
Energy levels

All persons were asked if they had noted any changes in their energy levels since seeing Dr Tom. Forty-one percent felt they had improved.



Weight

Just over a third (34%) reported a weight reduction since seeing Dr Tom, while 16% reported an increase.



Other health or related changes

When asked what, if any, other health related changes they had noticed since their meeting with Dr Tom, 37% mentioned some other change. The most mentioned changes were:

- change in eating behaviour (8%)
- feeling good/ better mental health (3%)
- reduced stress (3%)
- more energy/ not so tired (3%)
- less drinking (2%)

A second question asked what, if any, other behaviours they had changed as a result of their meeting with Dr Tom. Thirty-nine percent mentioned some other behaviour change. The main responses related to:

- change in eating behaviour (16%)
- more exercise (6%)
- less drinking (4%)
- improved feeling of wellbeing – happier, more relaxed, more confident (3%)
- thinking more about health/ more aware and understanding (3%)
- better sleep/ more sleep (2%)

The following are examples of specific comments from both questions:

"Changed my whole life, taking it easy, main thing is health"

"Really cool what he is doing for the country and just heaps of respect"

"Got our butts into gear and start taking better care of ourselves, juice diet, drinking more water and exercising more plus the korero. Put us in the right direction, started going to the doctor for regular tests, slowing down on smoking"

"Calm down a lot more"

"I don't hit my wife so often anymore"

"lots more mindful of food and what's in it, especially sugar:

"trying to walk rather than drive, haven't used the car as much – more effort into exercise"

"feel more comfortable within myself"

"less fizzy drinks, salt and sugar, more conscious of what I'm eating"

"stopped having biscuits with cup of tea in the morning, replacing snacks with almonds"

"been on a wellness course"

"counting calories and aware of food choices more"

"only one main meal per day, reduced portion sizes, less fat"

"stopped smoking, acceptance of other people improved, more tolerant"

Wrestling with my thinking a lot more to stay positive and identify negative thinking, guiding thought processes, tools for healthy thinking"

"Sleep better, more alert, waking up early, go for a walk about 12kms day"

"Saved a lot of money! No more smokes or coffees and fizzy drinks, just tea and water"

"Being mindful and doing more exercise"

"Awareness of health problems etc., hear of relatives but don't expect yourself to be affected also, very helpful"

"Don't get so tired"

"drinking more water, a lot of it is more your mind set and getting that awareness, cutting back on salt and processed foods"

"careful when at friends place having bbqs etc reducing fat intake"

"more energy"

"BP has lowered / become more cheerful"

"more conscious of what I eat, more scarier knowing it's a reality"

"Interesting to know that I had a few issues that needed looking into"

"since I've eaten less salt and sugar, weight decreased and more energy"

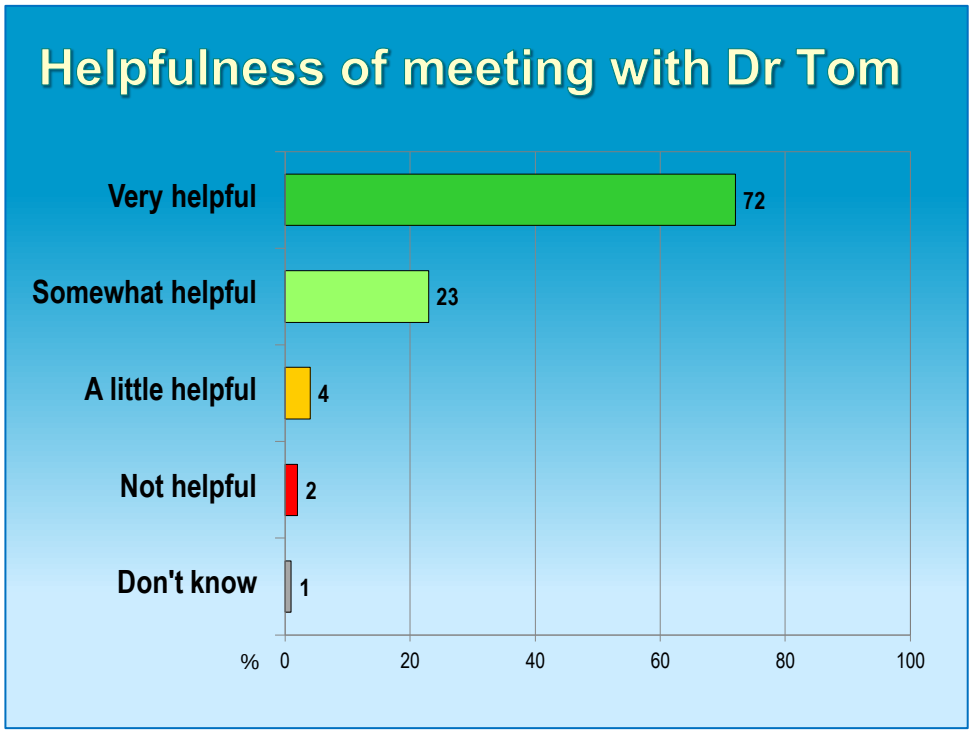
"more aware of levels"

"getting taller, standing up straight and feeling better"

"more energy and better headspace"

Helpfulness of meeting with Dr Tom

All but 3% rated the meeting as helpful, with almost three quarters (72%) rating it as 'very helpful'. New Zealand Europeans were less likely to give a 'very helpful' rating (65% vs 80% for all others).



Helping to understand and learn their numbers

When asked whether the meeting with Dr Tom had helped them to understand and learn their health numbers, 88% agreed that it had. Males were more likely to report this being the case (93% vs 82%).

Personal examples of impacts

These are examples reported by the initiative team.

Example 1:

One of the community members in The Far North was a smoker of 45 years inhaling between 35 to 40 cigarettes a day. A lung function test was completed and his results indicated that he only had 50% capacity in one lung. Between the lung function test, the key note presentation later that day and a visit from his grandchildren, the patient and his wife, have found the motivation to give up cigarettes. He even showed us his packet of Nicorette! https://www.facebook.com/drtomonamission

The individual also mentioned that having a mobile service was providing clinical and healthy living advice in the community which meant the difference between health advice and being lectured by your doctor in his/her office. He was much more likely to go to a service that visited his community instead of make the trip 'into town' to see his GP.

Example 2:

In March 2016, a 50 year old Northland man was seen at 4.45pm on a Friday night outside New World Kerikeri. He had a blood pressure 230/130 and had been told by his GP one year previously that his blood pressure was elevated and he should return. He had not done so due to a busy work life and workplace stress. Tom phoned the patient's GP who said he had tried to contact the patient. The GP suggested the patient make an appointment for first thing Monday morning. Dr Mulholland stated that he would be unhappy leaving this blood pressure untreated over the weekend due to the risk of haemorrhagic stroke/CVA. The blood pressure had been checked three times using different machines and both arms. The GP was happy to initiate treatment, so Tom wrote a script as per the GP's recommendations, as the GP surgery was over an hour's drive away and would have been closed for the weekend. With the patients consent, Tom involved the patient's wife in the consult (she was sitting in the car during the testing). The patient was given an UBI (ultra-brief CBT intervention) and a copy of Dr Mulholland's book 'Healthy Thinking' to help to manage stress. At the three months follow up, a second antihypertensive had been initiated. The patient had seen a cardiologist, read the 'Healthy Thinking' book and put some strategies in place to reduce stress. His blood pressure was down to 135/80. He was feeling symptomatically better and less stressed, and was taking a holiday and visiting family. If his blood pressure had not been treated a stroke would have been likely. Treating the stress had helped reduce the blood pressure, re-engage with the GP and make healthier behavioural choices.

Example 4:

Invercargill Mayor, Tim Shadbolt and Hutt City Mayor, Ray Wallace (who had undiagnosed Pre Diabetes and hypertension) both took steps to address their health issues.

Example 5:

This was a family who filled their wheelie bin every week with coke cans. The mother loved the bubbles effect so the one thing they chose to do was reduce this number and change from Cokes to soda stream water, so they could still have the bubbles. (Their spelling directly from the text.)

" Kia Ora . Your korero was oarsome. Want you to get bettre. Tanks for helping us get off the cokes. We use the bin for plastic bottles filld with sodastreem water."

Example 6:

The following was from a 62 year old man who chose to cut down on his alcohol.

"Doing well now. It was you who said choose just one thing to start with, not lots, and it worked. Now when I'm at the pokie machines I don't drink so much and think my next choice will be to cut down on some of my pokie trips too".

Example 7:

A previously undiagnosed Type 2 diabetic with an HBAIC of 105 has lost weight, commenced on a medication program, his HBAIC is now 75 and he has re-engaged with his GP. The team received a letter of thanks from his GP for providing the service and making a difference to the patient's quality of life.

Example 8:

One South Indian patient had very high cholesterol, HBA1C and smoked and did not engage at all. He was very flippant, saying that the Lord would look after him, not the doctor. Once it was suggested to him that maybe the Lord had sent us (through the Ministry of Health and Healthy Families NZ) he then became fully engaged; this is evidenced in a video and social media clip.

Example 9:

As a result of our work in the forestry sector we have been approached by the Forest Owners Association, Forestry Industry Safety Council and WorkSafe to run some pilots using standardised reporting across the country and to work with providers who have taken up a similar service to ours in East Cape. This is an excellent result in a high-risk industry and often in remote areas.

Other outcomes

- The staff of a major retailer want to run a pilot of behavioural change with their team in one of their stores.
- Testing of staff at a heavy industrial site identified a full blown diabetic among staff and the staff are now keen to follow progress.
- Tom reported that the initiative had in some instances been the spark for further engagement of stakeholders, such as one PHOs carrying out further testing after they had left.

Conclusions on outcomes

In any survey there will be a tendency for some people to give socially desirable responses, especially when being asked if they made changes that a doctor recommended they make. It is not possible to know the extent to which this affected the results in the follow-up survey. However, the low levels of change reported by some sub-groups for some conditions suggests there probably was a reasonably high level of accurate reporting.

In a worst case scenario, even if the intervention had only resulted in half the behaviour changes claimed, meaning that about a quarter had changed for each health condition, this would still be a good outcome, given that this was mostly only a single intervention by the initiative. However, the rate is likely to be higher than this.

By linking people back to their GPs the initiative was able to build in the follow-up without, in most cases, having to provide it themselves. When determining the merit of these outcomes it is also necessary to factor in the known difficulty of getting people to make behaviour changes. As Tom noted, behavioural change is a result of many factors such as mental health, addictions, social situation and patient priorities. A key point to note is that the initiative is impacting on groups in our society who are not being adequately impacted by existing primary care services. In this context these results are very positive, even allowing for the possibility of a reasonably large element of over-claiming.

A key aim of the initiative was to make people aware of their health conditions and encourage them to get on-going support from their GP. With between 41% and 63% reporting having talked to another doctor about their health issue since the testing, this might be considered only a moderately good outcome, especially when some of this is likely to be people giving the answer they think they should give. However, the interpretation needs to take into account that the interviews were only three months after testing. As noted previously, some people may not have thought it necessary to see another doctor within three months, given they had been tested by Dr Tom. The results also probably reflect the issues a lot of these people have with accessing a GP, such as cost and having to take time off work to attend. Given these people had not seen a doctor for the condition in the previous three years and many probably have a history of only going to doctors when they are very ill, to have got possibly about a third of them to have gone to a doctor within three months could be viewed as a very positive outcome.

Based on these conclusions, the merit of the outcomes of this initiative has been determined as 'very valuable' (the second highest rating).

While the levels of visits to doctors and testing is very positive, there is question as to whether it might be possible to extend initiatives such as this to get even greater uptake. Given the lower levels of GP visits reported by Māori participants, anything which could increase GP visits, especially for this group, would be a real plus. It would be interesting to trial what impact some form of motivational follow-up call might have on the outcomes. If the initiative was to be repeated it would be good to have sufficient funding to be able to undertake follow-up calls with all participants who had any level of risk. These calls could be made at three months and the evaluation interviews undertaken a month later. These results could be compared with those from the current study. An alternative, more rigorous, methodology would be to randomly select half for follow-up and compare them with those who received no follow-up.

It is interesting to note that the New Zealand Europeans tended to be less likely to report behaviour changes. This may indicate that they were more familiar with the messages Tom and the team were communicating and may have felt there was nothing new to motivate them to change. The converse of this is that the other ethnic groups may have been receiving communications in a way that was new to them, or in a way that they found more motivating that previous communications. Given the

importance of reducing health inequalities, it is positive that the initiative is impacting more on these other ethnic groups.

A similar explanation may also explain the greater behaviour changes and often higher levels of doctor's visits and testing reported by males compared with females. Once again, this is a positive finding, given male under-utilisation of primary care services.

6 EVALUATION CONCLUSIONS AND RECOMMENDATIONS

The model used for this initiative, with its pop-up opportunistic testing and linking patients back to their GPs, has been shown to effectively reach people who are not accessing GPs for necessary health assessments and advice on how to address their conditions.

As conclusions have been included for each component, this section is quite brief.

Overall merit of the initiative

Based on the merit ratings of the different components, the overall merit rating is 'very valuable', which is the second highest level. In determining this, the different components were given the weightings listed in the last column. The initiative has been 'very valuable' in meeting the objective of "increasing the conversation about modifiable aspects of long term conditions, with the anticipation of motivating a community response to making change".

COMPONENT OF INITIATIVE	Merit rating	Weighting in overall merit
Design	Extremely valuable	20%
Implementation by Health Innovation Centre	Very valuable	15%
Overall implementation	Valuable	15%
Outcomes	Very valuable	50%
Overall	Very valuable	

Key learnings

The following are the key learnings:

- This initiative was a highly effective way to reach persons not regularly accessing primary care services.
- The nature of the initiative and the way in which advice was delivered produces high levels of reported behaviour change and improvements in the health conditions.
- Initiatives such as this can produce a reasonable level of follow-up with GPs, but it would be worthwhile seeing whether this can be improved, especially for Māori.
- There needs to be sufficient forward planning and lead times, so that all key stakeholder groups are adequately organised, sufficiently engaged with the initiative, sufficiently clear about their responsibilities, and are able to fulfil on their required role.
- It is difficult to generate sufficient demand for two day workshops with health professionals, especially GPs.

Need for the service and sustainability

Tom felt there was a "massive" need for this type of initiative, because it found so many people who were not getting tested by GPs and who had at risk health conditions. He commented that they could have easily spent three months in each region and "hardly scratched the surface" of demand for testing services.

The success of this programme was in part due to the skills and personalities of those delivering the programme, especially Tom. It would be unlikely that someone else could deliver all four components (testing, community speaking, healthcare training and social media activity) as effectively as he has. Barbara and Kate also brought specific skills that are not very common.

There would need to be more evidence of demand from health professionals before including that component in any further similar initiative.

As noted previously, Tom thought it would be better to focus the community speaking engagements around workplaces.

As also previously noted, it is likely that initiatives such as this would achieve even greater social media impact if a professional agency was involved. The social media reaches a lot of people, so prioritising funding to increase this reach would seem to be important, plus adequate budget for filming and editing. Tom felt it was a mistake not to include this in the original budget.

In conclusion, the model is definitely sustainable if Tom continues to be the lead person. Given the unique nature of Tom's approach, including the use of the old ambulance and actively seeking those communities that are harder to engage (e.g. rural communities, forestry employees), it is difficult to know how effective any other service provider might be in attempting to deliver a similar type of service.

RECOMMENDATIONS

It is recommended that:

- the Ministry of Health give serious consideration to funding further similar initiatives, providing Dr Tom Mulholland is available as the lead;
- this should exclude professional training, unless sufficient demand can be demonstrated;
- there be sufficient funding to allow for the involvement of a social media agency and professional video production;
- there be sufficient funding to allow for a follow-up call to all at risk participants; and
- there be further evaluation to ascertain the benefits of the social media agency involvement and the follow-up calls.