Taking a bite of the apple: The implementation of Fruit in Schools (Healthy Futures evaluation report to the Ministry of Health)

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Quick summary of the Healthy Futures findings

This is a quick summary of the findings from the Healthy Futures evaluation of Fruit in Schools (FIS). FIS is part of the Ministry of Health's strategy to improve health outcomes.

What is FIS? FIS has two main parts:

1. Children in low-decile schools are given a free piece of fruit a day.
2. Schools are encouraged to use a Health Promoting Schools approach to address four health priority areas: healthy eating; physical activity; sun protection; and smokefree.

The first phase of FIS began in late 2005 and the initiative now involves 280 schools. FIS now covers almost all the decile 1 schools in the primary sector. FIS schools work in regional clusters and are supported by co-ordinators and a range of partner agencies such as the Cancer Society, Sport and Recreation New Zealand (SPARC), the National Heart Foundation, and School Support Services.

How is FIS being evaluated? Healthy Futures consists of baseline and yearly follow-up surveys of staff and students, as well as some case studies. Agency partners are interviewed yearly. The evaluation looks at what factors support or hinder the FIS initiative now and in the longer term; and what changes are occurring in schools, teacher practice, and in students' knowledge, attitudes, and behaviours. The main focus is on Phase 2 schools.

What are the findings so far? Principals, teachers, students, and agency partners consider FIS to be a successful initiative which is raising the profile of health and wellbeing within schools. At the end of 2006, most Phases 1 and 2 schools were making changes in at least three of the health priority areas, and FIS had helped schools make better connections with health agencies. These agencies also showed strong support and enthusiasm for FIS. They felt it had improved interagency communication and the co-ordination of services to schools.

At the start and end of 2006, 591 Year 4 students completed baseline and follow-up surveys. The largest group identified as Mäori, followed by Pasifika and NZ European. The statistically significant changes in the student data which are likely to be related to FIS include:

- increased awareness of the importance of healthy eating and knowledge about options
- an increase in the numbers who ate fruit and vegetables, and the amount they ate
- increased awareness of the importance of physical activity, and enjoyment of it
- an increase in physical activity and a decrease in TV watching and playing computer games
- increased awareness of the importance of being sunsmart and knowledge about ways to do this.

These findings suggest that FIS is starting to have a positive impact on schools and students.

Where to from here? The findings also suggest some ways FIS could be strengthened. The suggestions are at the school, regional, and national level and include:

- further support to assist schools to integrate the four health areas into the curriculum, and use teaching approaches that empower students and involve the parent/whänau community
- exploration of a national model of smokefree education for primary-age children, and how social and emotional health and wellbeing can become a bigger part of FIS
- exploration of further ways to work with Mäori and Pasifika stakeholders, and ways to assist partner agencies to cope with the increase in participating schools and further co-ordinate their services to schools.

Executive summary

The Healthy Futures evaluation and Fruit in Schools

Healthy Futures is the evaluation of the Ministry of Health's Fruit in Schools (FIS) initiative. This report summarises the findings to date. The intent of this report is to draw together the perspectives of key FIS stakeholders to inform policy and practice, and contribute to the ongoing development of FIS.

FIS is part of the New Zealand Ministry of Health's overall strategy to improve health outcomes. It has two components. One component offers students attending low-decile primary schools a free piece of fruit each day. A second component focuses on encouraging and supporting FIS schools to take a Health Promoting Schools (HPS) whole-school and community approach to addressing four health priority areas: healthy eating; physical activity; sun protection; and smokefree behaviours.

The first phase of FIS started in late 2005. Since then two further groups of schools have joined the initiative. In total there are now approximately 280 FIS schools, and the three phases of FIS encompass almost all decile 1 primary, contributing, composite, and intermediate schools. Each phase of FIS is funded for approximately three years.

FIS schools are organised in regional clusters, and lead teachers from FIS schools attend cluster meetings. The clusters are supported by Fruit in Schools co-ordinators (FISCs) and a team of interagency partners from the National Heart Foundation, the Cancer Society, Sport and Recreation New Zealand (SPARC) and regional sports trusts, the Ministry of Education and School Support Services, as well as other local health promoters, businesses, and community groups. At a national level, FIS is underpinned by a tripartite agreement between the Ministries of Health and Education and SPARC.

Since the rollout of FIS, new policy developments and resources that intersect with FIS have been introduced to the education sector by the Ministry of Health and other government agencies. These include the Mission-On package of initiatives, and the creation of regional Healthy Eating–Healthy Action (HEHA) manager positions to facilitate interagency collaboration.

Evaluation approach and focus

Healthy Futures is a multi-method longitudinal study which incorporates aspects of formative (supporting improvements to an initiative), process (describing or documenting activities that happen as part of an initiative), and impact (making judgements about the results of an initiative) evaluation. The initial emphasis (2005 and 2006) is on process and formative evaluation so that information can be generated to assist stakeholders to improve FIS. As the evaluation continues, the emphasis will move to a deeper consideration of impacts, good practice, and sustainability. Healthy Futures draws on a realist approach to evaluation, combining qualitative and quantitative data to explore the nature and context of change. It blends health and educational methods, and draws on understandings from the literature from both areas.

Evaluation questions

The evaluation explores three key questions:

1. What are the factors that support and hinder the implementation of FIS, and are likely to impact on its longer term sustainability?
2. What changes are occurring within schools and to professional practice in regard to school approaches to health and wellbeing?
3. What changes are occurring in students' knowledge, attitudes, and behaviours in regard to the four health areas?

Rather than looking for change in a predetermined set of indicators, the Healthy Futures evaluation is exploratory in nature. Schools are at the heart of FIS, so the main focus is on the school setting, and the complexities of change in this setting. We used the key themes of the HPS framework to explore and categorise the potential sites of change within the school system. These themes are:

- school organisation and environment
- curriculum, teaching, and learning
- community links and partnerships (with parents/whänau)
- community links and partnerships (with interagency partners and other local groups).

The Ministry of Health and partner agencies have developed a continuum for each health priority area. These describe the process a school is likely to go through as it uses the HPS model, and a range of likely activities that may be evident in relation to these themes. We used these descriptions to provide possible indicators of change for the impact evaluation.

Evaluation methods

There are three main methods of data gathering:

- baseline and yearly follow-up surveys of school staff and students at Phase 2 FIS schools; together with yearly surveys of FIS lead teachers in Phase 1, and a sample of Phase 3 schools
- case studies of FIS schools showing good practice in aspects of FIS
- yearly interviews with a sample of national and regional interagency partners.

Thus the evaluation is mostly focused around Phase 2 schools, where all the Year 4 students, the FIS lead teacher, the principal, and a Year 4 classroom teacher completed a baseline survey at the start of 2006, and a follow-up survey at the end of 2006. These students, who will be at school for the duration of the evaluation, are being tracked over time. This report includes data from 591 students who completed surveys at the start of 2006 (prior to their school starting FIS) and at the end of 2006. The largest group (49 percent) identified as Mäori, followed by Pasifika (45 percent), NZ European (41 percent), Asian (3 percent), and other (5 percent). Approximately four-fifths of the schools these students attended were decile 1, and the remainder, decile 2.

Limitations of the evaluation design

Healthy Futures uses a multi-method design which is suggested in the literature as being suitable to evaluate complex initiatives like FIS. Much of the data collection relies on self-report. To ensure that the conclusions presented are robust, more than one source of data is used to inform each evaluation question. The main source of data collection from schools is a survey. The baseline survey included FIS schools and a comparison group of non-FIS schools. Since the baseline survey, most of the comparison schools have become part of Phase 3 of FIS, reducing their ability to function as a comparison group. To counteract this, a modelling approach will be used to analyse the next round of comparison group data. Healthy Futures was designed to address the implementation and impacts of FIS in mainstream New Zealand schools. A different approach, which takes into account kaupapa Mäori research principles, would be needed to explore how FIS is enacted within Mäori medium education.

Key findings to date

What was happening in schools?

At the end of 2006, Phase 2 schools had been part of FIS for approximately eight months. This is a short time frame within which to measure change, but the follow-up surveys of both students and staff paint a picture of a successful initiative that is raising the profile of health and wellbeing within schools.

FIS is well regarded by school stakeholders including principals, lead teachers, classroom teachers, and students. FIS has increased awareness of health and wellbeing in participating schools and has supported staff to make connections with interagency partners. There has been a range of changes to school practices and student outcomes. Most schools were making changes in at least three of the health priority areas.

Two of the health priority areas, healthy eating and physical activity, are key learning areas in the health and PE curriculum. Sun protection and smokefree behaviours fit within the key learning area: body care and physical safety. In 2006, schools prioritised the two areas most closely linked to the curriculum: healthy eating and physical activity. Not surprisingly, the student data show the most change in these two areas. There were changes in the attitudes and knowledge, and in some cases behaviours, of the 591 students who were tracked throughout 2006. The table below summarises the statistically significant shifts in the student data.

Statistically significant shifts in the student data

Indicators of change	Health priority area			
	Healthy eating	Physical activity	Sunsmart	Smokefree
Attitudes	√ (nonsignificant)	√		
Knowledge	√	√	√	√
Behaviours	√	√		√ (also nonsignificant negative shift)
Home behaviours	√ (also nonsignificant shifts)	√		

The main statistically significant changes in the student data, which the staff survey and case study data suggest are likely to be connected to FIS-related activities, are:

- significant increases in students' awareness of the importance of healthy eating and knowledge about healthy food options
- significant increases in both the ***number*** of students who reported eating vegetables and fruit in the day before the survey and in the ***amount*** of vegetables and fruit they ate (most of these increases occurred at school, but some also occurred at home)
- significant increases in: students' awareness of the importance of exercise; enjoyment of exercise; and the number of times students reported engaging in mild to moderate physical activity in the day before the survey
- a significant decrease in the number of times students reported watching TV or playing computer games in the day before the survey
- significant increases in: students' awareness of the importance of being sunsmart; and knowledge about sunsmart practices.

Significantly more of the students who liked school also reported positive attitudes towards healthy behaviours and engaging in these behaviours. This is important because research also shows that a sense of wellbeing and connectedness to family and school is a preventative factor against risk behaviours such as smoking.

Although many of the statistically significant shifts in the student data were small, nearly all were positive, and there were indications that FIS is starting to have an impact on some home behaviours.

The smokefree component of FIS showed a different pattern from the other three health areas. There was a significant increase in students' awareness of the impact of passive smoking and a small but significant decrease in the number of students who reported they smoked more than one cigarette a week. However, the data suggest that these changes may not be attributable to shifts in school practices that result from FIS, but instead are likely to be due to a mix of school, home, and societal factors. Many schools did not focus on smokefree in 2006, or were not planning to do so in 2007. Some staff considered their school was "already smokefree" as required by legislation, and therefore they had addressed this aspect of FIS. These responses suggest there are misconceptions about the smokefree component that could be addressed. It is also likely that the absence of a dedicated agency workforce influenced the lower take-up of this component of FIS.

How do changes in school practice align with the HPS framework?

We used the four themes of the HPS framework to broadly categorise the changes that were occurring at schools. Nearly all schools had taken actions to address: "school organisation and environment". They had reviewed or developed policies and instigated a variety of initiatives designed to create a healthy eating environment within their school, improve their physical activity culture, or increased the emphasis on sunsmart practices. The majority had also made changes relating to "curriculum, teaching, and learning" with FIS supporting an increased focus on three of the four health areas within the classroom. FIS also appeared to be supporting an increase in practices that promote student empowerment, but many curriculum actions still appeared to be set by teachers, suggesting a need for further PD.

We divided the "community links and partnerships" arm of the HPS framework into two parts: links with health and community agencies and links with parents/whänau. School staff noted that FIS had facilitated the development of new or stronger connections with some interagency partners, and in particular, FISC, public health nurses, and representatives from the Cancer Society, the National Heart Foundation, and SPARC/regional sports trusts. Personal contact with interagency partners appeared more beneficial than access to resources. One of the tripartite partners (Ministry of Education/School Support Services) did not appear to have increased their involvement with FIS schools. This is a concern given the need for curriculum support in integrating the priority areas and the HPS process into the curriculum. In principle, this agency

appears to be well placed to provide this support, so it could be worth investigating barriers to their fuller involvement.

Staff indicated that parents/whänau supported FIS, but their involvement in FIS did not show much shift over 2006. Currently, most schools appeared to be using an "information provision" model to make connections with parents/whänau, with fewer activities fitting within the "empowerment" model advocated by HPS. Shifts in practice will take time. Forming partnerships with parents/whänau relies on adequate processes and prior relationship building.

Sustainability and improvements

Embedding policies, procedures, and curriculum-based activities within a school culture is likely to support the sustainability of FIS in the longer term. Reflecting their longer involvement in FIS, Phase 1 lead teachers reported a wider variety of changes than their Phase 2 colleagues. Most schools had not started planning ways to continue the provision of fruit once the funding stopped, even though this was considered a key aspect of sustainability.

The overall picture is one of systemic change in FIS schools. Considering the length of time that is often required to affect substantive change in student populations (Stewart-Brown, 2006), the changes reported here have occurred within a very short time frame. There were some minor variations in the data by student gender and ethnicity, and FIS region, but in general these characteristics were not predictors of whether change occurred. Further analysis indicated that the culture and practices of the school that students attended impacted on the amount of change. Changes in students' behaviours were associated with: beliefs that school leaders and teachers were strong supporters of school health and wellbeing initiatives; access to appropriate PD and support from interagency partners; and the revision of school policies and curriculum activities related to the health areas.

School staff suggested very few improvements to FIS, attesting to their support of the initiative and the processes used to implement it. They wanted to see a continuation of the funding for fruit (to enable schools to focus on their core business: teaching and learning) and a few changes to the format or content of school cluster meetings.

Interagency views of FIS

Representatives from the national and regional agencies showed strong support and enthusiasm for FIS. They all thought FIS had succeeded in engaging schools at least in the first steps of FIS, by entrenching the eating of fruit in day-to-day school life. They considered schools were making good progress toward whole school ownership of FIS, embedding FIS within the curriculum, and promoting change in the health priority areas. At the school level, to improve the effective of FIS, they wanted to see FIS becoming more school-driven (rather than top-down) and better able to

meet the needs of Mäori and Pasifika students and communities, as well as greater engagement of parents/whänau.

National and regional agency representatives considered the interagency approach promoted by FIS had brought rapid and profound gains. They saw: improved communication between agencies; co-ordination of services to schools; and realisation of synergies from agencies working together toward shared goals. This had strengthened existing interagency relationships and also developed new ones to the benefit of FIS and other health promotion work in schools. Whilst very positive about the success of the interagency approach, these stakeholders also offered suggestions for improving the effectiveness of their support for schools. Further work could be done to: foster a more cohesive approach; shift from an "information delivery" model to an "empowerment" model; and interlock the four health areas. Some tensions and patch protection remain within a few regional interagency groups.

It was widely considered that FIS had passed a watershed, with important changes occurring in the way the initiative works nationally and regionally, including: an increasing oversight role for regional DHBs; the rollout of Phase 3; and the implementation of Mission-On. National and regional stakeholders were clear that FIS required ongoing national co-ordination and leadership to ensure strategic consistency as DHBs take increased responsibility for the oversight of FIS. This includes an ongoing role for the Ministry of Health in communicating a strong vision for FIS and to develop partnerships with Mäori and Pasifika agencies and communities. Some form of national steering group was seen as necessary to: support consistency of philosophy and practice; share good practice; and respond to emerging issues and evaluation findings.

One key issue requiring resolution at a national level is concern about agency capacity to support Phase 3 of FIS, which has more than doubled the number of participating schools. Despite the concerns they expressed at the start of Phase 3, agency staff showed an impressive level of goodwill. The successful rollout is testament to the effectiveness of the leadership within these organisations and the collaboration between them, as well as the regional stakeholders' accumulation of knowledge and understanding of FIS during the first two phases.

However, stakeholders continue to have concerns about their capacity to provide the level of support to schools considered necessary. Although positive about Mission-On and its potential to promote healthy behaviours, stakeholders noted that this brings additional complexity and challenges for FIS, including an increased call on health promotion resources that are already stretched.

Most people saw three years as insufficient time to achieve and sustain change of the breadth and magnitude encapsulated within the strategic objectives of FIS. They also believed the fruit provision aspect of FIS may not be sustainable for low-decile schools without ongoing assistance.

The concerns outlined above highlight an ongoing need for strong leadership and interagency collaboration to work through the issues and maintain the high levels of commitment and momentum that have been demonstrated to date.

Success factors

The evaluation findings to date suggest that the existence of the following conditions is likely to ensure that FIS is successful in the longer term:

At the school level:

- ongoing funding (including continued central distribution of fruit)
- dedicated funding for a lead teacher to support initiatives
- school leaders who champion the initiative
- systems that support all staff to have ownership over the initiative
- adequate PD and resources for all staff about health promotion models and the health priority areas (e.g., whole-school PD and school clusters)
- ongoing support from FISC and interagency partners
- systems that support a continued focus on health (e.g., inclusion of the health priority areas in curriculum planning and activities)
- processes that encourage parents/whänau to be informed and involved.

At the national and regional level:

- ongoing national co-ordination and leadership to address concerns (such as capacity issues)
- ongoing commitment to developing the interagency approach to support schools
- ongoing hui for FISC and interagency staff to foster common understandings about FIS, and support relationship building and the sharing of good practice.

At all levels:

- a focus on achieving a balance between health promotion models that promote empowerment and those that focus on information provision.

Next steps

It is a premise of FIS that schools will address the four health priority areas over a three-year time frame. In the first year of the initiative in Phase 2 schools, it was to be expected that different aspects of FIS would show different rates of change. This is borne out by the data summarised above. The findings to date suggest seven main ways FIS could be further strengthened. Some require national direction and therefore have implications for both policy development and associated practice. Others are aimed more at the regional or school level. These seven areas are:

National level:

- exploring national models of smokefree education for primary-age students and ways to provide additional support to schools around the smokefree component
- exploring ways to explicitly address social and emotional health and wellbeing within the FIS model, in order to further support change in the four priority areas
- exploring existing and new models for developing partnerships with Mäori and Pasifika stakeholders at a national and regional level.

Interagency level:

- exploring models for ensuring continued national and regional interagency synergies
- exploring ways to address Phase 3 capacity issues for interagency partners.

School level:

- offering further resources or PD to assist teachers to integrate the health areas and HPS process into the curriculum. This support needs to align the HPS process with the models in curriculum support materials (such as action competence models) and encourage the use of these models in ways that promote student empowerment
- offering further resources and support for school staff about involving their parent/whänau community in FIS (in part, parent/whänau involvement is likely to be addressed by the use of the HPS process or action competence models noted above).

1. Introduction to the Healthy Futures study

The Fruit in Schools (FIS) initiative is part of the Ministry of Health's overall strategy to improve health outcomes. The purpose of FIS is to support schools to address four health priority areas. These are:

- healthy eating
- physical activity
- sun protection
- smokefree behaviours.

FIS has two components. One component offers students who attend low-decile[1] primary schools a free piece of fruit each day for three years. A second component focuses on encouraging and supporting FIS schools to take a Health Promoting Schools (HPS) whole-school and community approach to addressing the four health areas.

FIS schools are organised in regional clusters which are supported by Fruit in Schools co-ordinators (FISCs) and a team of interagency partners from the National Heart Foundation, the Cancer Society, Sport and Recreation New Zealand (SPARC)/sports trusts, School Support Services, as well as other local health promoters, businesses, and community groups.

In late 2005, the Ministry of Health engaged the New Zealand Council for Educational Research (NZCER) in collaboration with Health Outcomes International (HOI) to conduct a longitudinal formative, process, and impact evaluation of FIS. NZCER is an independent educational research organisation which has a national and international reputation for producing quality educational research and research-based products. HOI is a leading Australasian consulting firm specialising in the provision of research, evaluation, and management consulting services to the health, and community and social development sectors.

This is the first public report from the Healthy Futures evaluation. In February 2006, an interim report (King, Boyd, & Campbell, 2006) for the Ministry of Health explored school staff and FISC perceptions of the initial implementation of Phase 1. In mid-2006, a second interim report (King & Boyd, 2006), provided a summary of feedback from interagency partners regarding the implementation and impacts of Phases 1 and 2 of FIS.

This current report summarises the data collected during 2006 and draws on the findings from the two interim reports. Three main sets of information have been used to inform this report:

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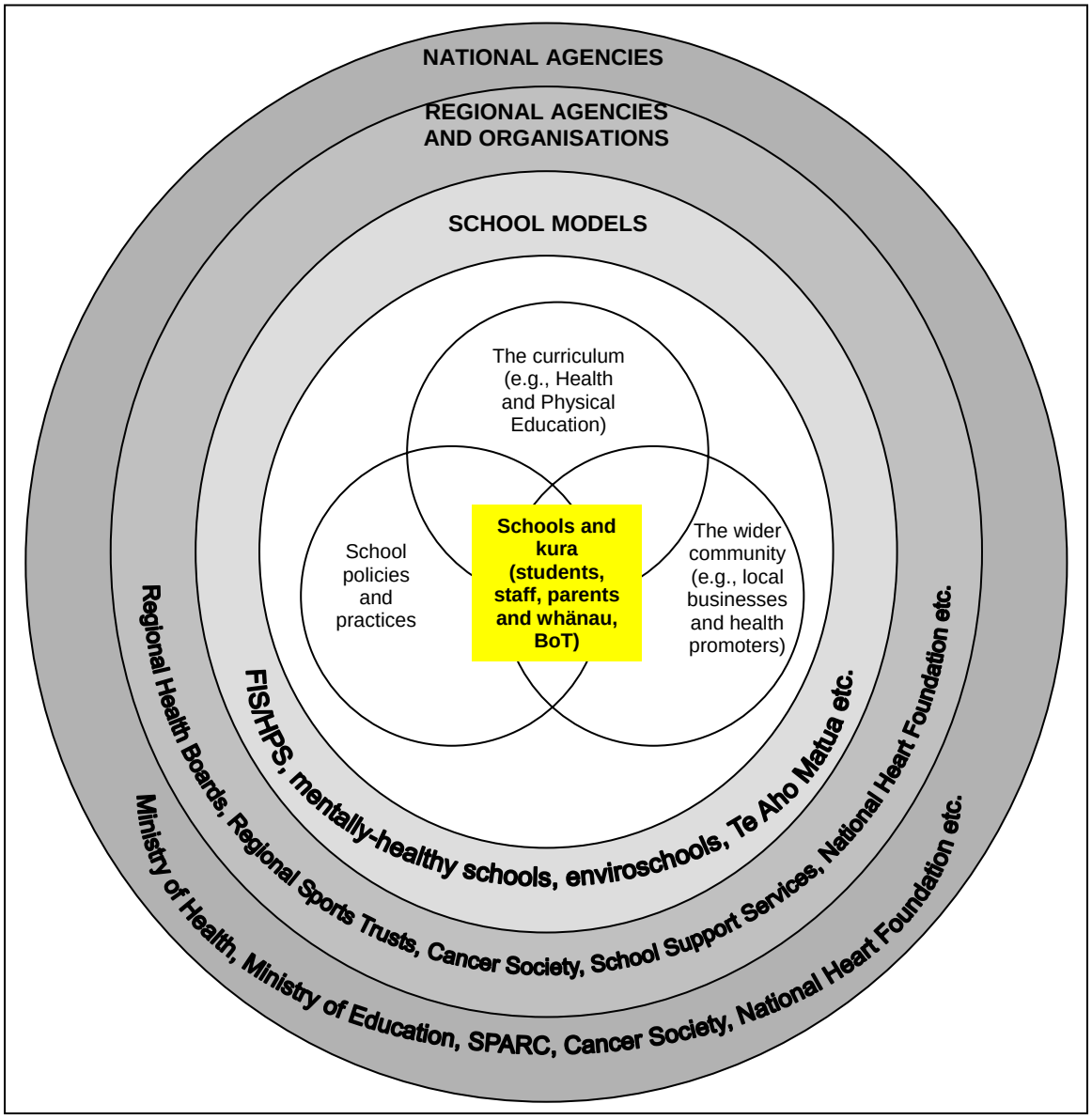
[1] Decile ratings are used by the Ministry of Education to refer to the socioeconomic status of the parent/whänau community served by the school. Decile ratings are calculated using a sample of parent addresses and census data similar to that used to calculate the NZ Index of Deprivation (NZDep).

- data from start and end of 2006 surveys of students and school staff involved in Phases 1 and 2 of FIS
- mid and end of 2006 telephone interviews with interagency partners representing key organisations involved in the governance and implementation of Fruit in Schools nationally and regionally
- case studies of six Phases 1 and 2 FIS schools visited at the end of 2006.

As shown in Figure 1, FIS has multiple stakeholders. Schools are at the heart of the initiative supported by their communities, as well as a range of regional and national partners. FIS is also connected to models of practice that offer underpinning principles and ways of working.

Figure 1 **The umbrellas of the FIS system**



The complexity of FIS, as shown in Figure 1, was a major consideration in designing the evaluation approach, which incorporates a range of data collection strategies, and for structuring this report to ensure that the needs of a diverse audience could be met. In particular, this report is structured to provide:

- information for the Ministry of Health about how the implementation of FIS is progressing and any short-term changes that may be occurring
- examples of good practice that can be emulated by schools or FISC
- information for interagency partners about particular strengths and concerns in each of the four health areas
- information for all stakeholders about potential ways to strengthen the initiative.

Overview of the Fruit in Schools initiative

The Ministry of Health is responsible for implementing the *Cancer Control Action Plan* (Cancer Control Task Force, 2005) and the *Healthy Eating–Healthy Action* (HEHA) *Implementation Plan* (Ministry of Health, 2004). FIS is one of the actions identified in both of these plans and is funded through the Cancer Control Action Plan. It uses free fruit as an incentive for schools to use the HPS model to address the four health priority areas.

FIS targets schools in areas of high need, and in particular, decile 1[2] schools. Phase 1 of FIS commenced in October 2005 and offered funding for fruit and support to 60 schools, in 12 clusters, across six geographic areas, for a total of three years. The rollout continued in Term 2 of 2006, when another 54 schools and six new areas started participating in the initiative. In October 2006, a further 156 schools started Phase 3 of FIS. The three phases of FIS now cover the 21 DHBs and encompass almost all decile 1 primary, contributing, composite, and intermediate schools in New Zealand (NZ),[3] as well as a small number of decile 2–4 schools. Further details about the schools in each phase of FIS are contained in Appendix A.

As part of FIS, schools are asked to commit to:

- working in the four health areas
- adopting a HPS whole-school community approach to health and wellbeing
- being willing to write FIS into their school strategic plan
- being willing to take part in the FIS evaluation process
- being willing to commit to being part of a FIS/HPS cluster
- aiming to make FIS sustainable in their school at the end of three years by seeking assistance from the wider community.

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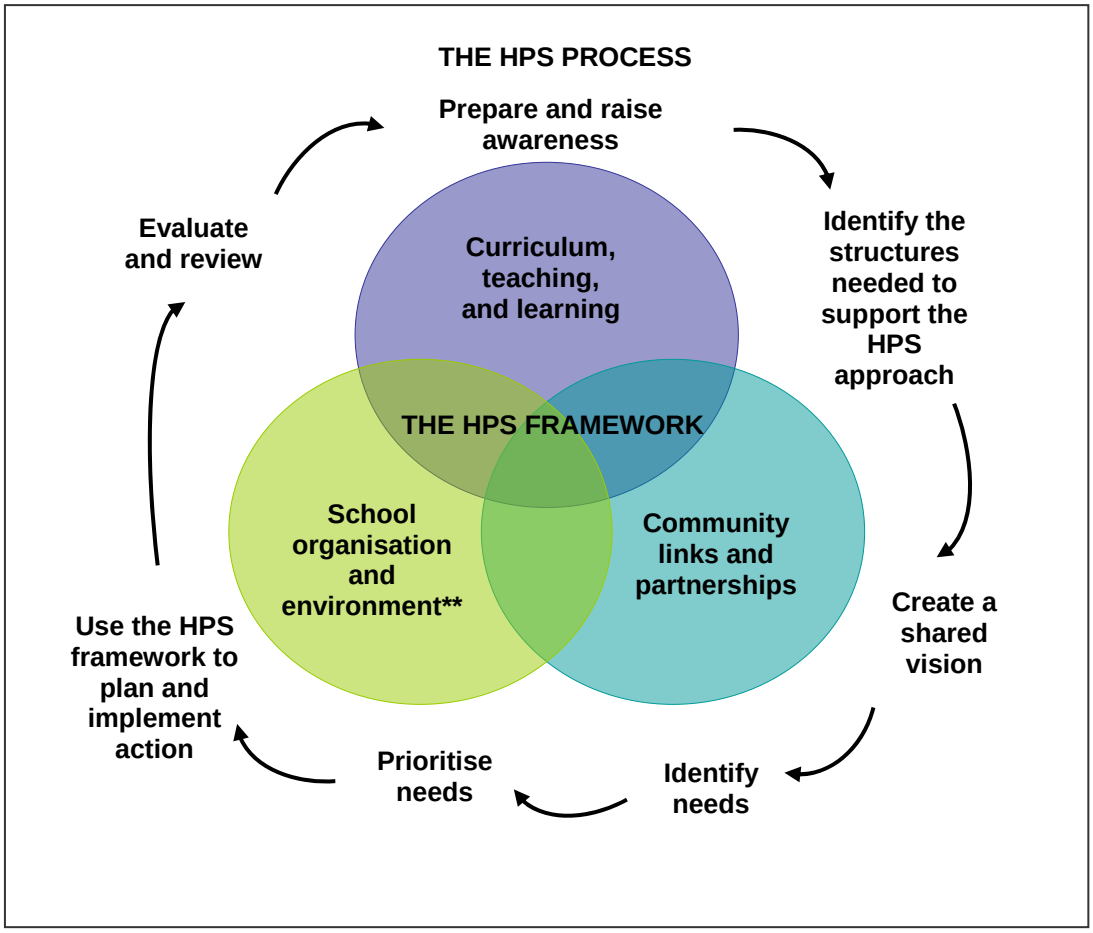
[2] Decile 1 schools tend to be located in areas of high deprivation as measured by NZDep.

[3] That is, all schools that cover Years 1–6, and some schools, such as full primary, that also cover Years 7–8. Intermediates (that cover Years 7–8) are not part of FIS.

To ensure sustainability of the initiatives generated by FIS, there is a strong focus on health promotion and community action. FIS schools are expected to use the HPS model to address the four health areas. This model provides a framework, process, and infrastructure to support schools to develop health promotion initiatives. This model has already been used, with support from the Ministry of Health, for approximately 10 years at a regional level in NZ. As shown in Figure 2, the HPS process assists schools to identify priorities and a plan of action that addresses three interconnected levels of the school system (curriculum, teaching, and learning; school organisation and environment; community links and partnerships). As part of this process, schools are encouraged to develop a health team of activists who progress health initiatives. Representation on this team varies but can include students, staff, parents and whānau, members of the board of trustees, local community representatives, and health promoters such as public health nurses.

Figure 2 **The HPS framework and process***



* Diagram adapted from Fruit in Schools*: A 'How to' guide* (Ministry of Health, 2006b, p. 9).

** Also called school organisation and ethos.

FIS also offers schools a support infrastructure. FIS schools are grouped into regional clusters which meet regularly during the year. Regionally-based FISC and HPS advisers work with clusters and individual schools to assist school staff to develop health initiatives and policies by

supporting schools with the HPS process, facilitating school cluster meetings, offering information and resources, and supporting schools to make connections with partner agencies.

FIS brings together a number of different agencies to work in partnership with schools. Stakeholders include the Ministry of Health and its representatives such as FISC and public health nurses, the Ministry of Education and School Support Services, SPARC and regional sports trusts, the Cancer Society, the National Heart Foundation, as well as other non-government organisations (NGOs) and health providers. For the government sector, this interagency collaboration was formalised in 2004 by a tripartite agreement: "Partnerships in Action" between the Ministry of Health, the Ministry of Education, and SPARC. In 2005, FIS started as a national initiative led by the Ministry of Health. At the end of 2006, this structure was retained, but oversight of FIS was shifted to district health boards (DHBs).

Initiatives related to FIS

FIS is not the only governmental approach located in school settings that is addressing concerns about nutrition and physical activity. In the area of physical activity, the Ministry of Education's National Administration Guidelines (NAGs) require that school boards, through the principal and staff:

> …develop and implement teaching and learning programmes giving priority to regular quality physical activity that develops movement skills for all students, especially in years 1–6. (NAG 1ic, no page numbering)[4]

Regional school-based initiatives, such as Project Energize,[5] have also been developed to support schools to further develop their approaches to nutrition and physical activity. In addition, since the rollout of the first two phases of FIS, new policy developments and resources that intersect with FIS have been introduced to the education sector by the Ministry of Health and other government agencies. The Mission-On campaign is a key initiative in this area (Ministry of Education, 2006a). Launched in 2006, this package includes 10 initiatives designed to improve the health of young people. Mission-On was developed in collaboration between the Ministries of Health, Education, Youth Development, and SPARC. Initiative 1: *Improving nutrition within school and early childhood education service environments*, has several components that directly influence the food and nutrition environment in schools. These components include: the development of the Ministry of Education's (2007) food and nutrition guidelines for schools and early childhood centres; professional development support for schools to implement these guidelines; a nutrition fund to support schools and early childhood education services to improve their food and nutrition environment; the development of a tool to enable schools to identify healthy food choices; and a change to the NAGs that requires all state and state-integrated schools to promote healthy food and nutrition for all students and sell only healthy food and beverages onsite. Supporting the food

[4] http://www.minedu.govt.nz

[5] http://www.projectenergize.org.nz

and nutrition guidelines is a *Food and Beverage Classification System Framework* (Ministry of Health, 2007).

In 2006, HEHA funding was used to create regional HEHA manager positions in each of the 21 DHBs to facilitate interagency co-ordination at a district level. One of the tasks for these managers is to establish an intersectoral schools group if one is not already in existence. The purpose of these groups is to manage the allocation of the nutrition fund and to better co-ordinate the activities of health organisations in schools and early childhood education services.

The initiatives outlined above have the potential to significantly alter the food and nutrition environment in schools and early childhood centres, and therefore influence how schools experience FIS. Given this, a focus on these initiatives has been included within the Healthy Futures evaluation.

Locating FIS as an initiative that spans the health and education sectors

This section of the report touches on some of the key themes from the research and evaluation literature that are pertinent to FIS and the Healthy Futures evaluation. The intention is to locate FIS within a wider context, not to provide an exhaustive literature review.[6] This wider context is important as FIS spans the health and education sectors, and is a setting or context-based initiative, that is, FIS is located within the setting of individual schools, and school staff are able to tailor the initiative to suit the needs of their community.

The significance of FIS within the current health climate

The FIS initiative is driven by a range of health priorities. One is international concern in the Western world about poor nutrition and insufficient levels of physical activity, and a resultant obesity epidemic and its long-term impacts on health. In NZ, researchers are expressing concern about the "obesogenic food environment" in and around schools (Carter & Swinburn, 2004; Wilson, Thomson, & Jenkin, 2007), and research findings that show that poor nutrition is associated with poor attendance, behaviour, and long-term academic outcomes for students (Quigley and Watts Ltd, 2005a).

Rates of childhood obesity are increasing in NZ. They are highest among low socioeconomic groups, and in particular, Pasifika and Māori (Ministry of Health, 2004). In addition, Pasifika adults have higher rates of physical inactivity than other ethnic groups (SPARC, 2002, cited in Ministry of Health, 2004). Another health concern driving FIS is the harmful effects of smoking on at-risk groups such as Māori, Pasifika, and those on low incomes (Ministry of Health, 2006c).

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[6] For example, each of the four health areas has a large body of associated research which we have not attempted to cover in this summary.

Reducing health inequalities for different groups of New Zealanders is a key priority area for the government (Ministry of Health, 2004). The strongest influences on people's health come from factors outside the health system, including the social, cultural, physical, and economic environments in which people live. These socioeconomic determinants of health impact differentially across the population, creating wide disparities in health. For example, people from low socioeconomic groups have greater exposure to health risks, poorer access to health services, and are more likely to develop, and die of, cancer (Minister of Health, 2003).

Socioeconomic and other determinants influence health throughout life, but adverse socioeconomic circumstances during childhood are more potent predictors of health in later life than subsequent circumstances and lifestyle choices (Public Health Advisory Committee, 2004), providing a strong case for interventions to promote healthy behaviours early in life. Children from poor families have higher rates of illness, injury, and death than others (National Health Committee, 1998).

The deprivation level of the geographic areas in which people live is also a predictor of variation in health status (Public Health Advisory Committee, 2004). For example, the 1997 National Nutrition Survey showed that those living in more deprived areas were more likely to have poor nutrition (Ministry of Health, 2004). This supports the targeting of FIS to low-decile schools.

The Ministry of Education also prioritises addressing the needs of low-decile schools. Reducing educational disparities, and in particular for those groups over-represented among students who underachieve, such as students from low-income communities and Mäori and Pasifika students, is a key aim of the Ministry of Education's schooling strategy (Ministry of Education, 2005).

Approaches to addressing health concerns

The *New Zealand Cancer Control Strategy* (Minister of Health, 2003) notes that addressing socioeconomic inequalities in health requires a multifaceted and long-term approach. Despite strong evidence for the positive health impacts of good nutrition, physical activity, sun protection, and nonsmoking, there is a relative lack of good-quality evidence on effective actions to promote behaviour change in these areas. This is largely due to the complex, multifaceted, and long-term nature of these actions and consequent difficulties in attributing cause and effect.

The Ottawa Charter (World Health Organization, 1986) is used in NZ as a framework for planning public health strategies. It provides a comprehensive approach to improving the health of populations and individuals, which requires the involvement of a wide range of organisations, and emphasises the need to:

> build healthy public policy, encourage community action, develop personal skills, create supportive environments and reorient health services in order to ensure effective public health actions. (cited in Minister of Health, 2003, p. 24)

A number of other success factors have been identified for effective strategies to promote healthy behaviours, including leadership for effective action, effective communication, functioning alliances and partnerships, and enabling environments (World Health Organization, 2003, cited in Ministry of Health, 2004), and the use of strategies that work at several levels (e.g., individuals, groups, and communities) and which address barriers to behaviour change (NHS Health Development Agency, 2003, cited in Ministry of Health, 2004). All of these principles are reflected in the design of FIS.

Approaches to addressing health concerns within a school setting

A small-scale pilot of the fruit provision aspect of FIS (Ashfield-Watt, 2005), and a similar School Fruit and Vegetable Scheme (SFVS) programme in the UK (Ransley et al., 2007; Schagen et al., 2005; Teeman et al., 2004) clearly show that free fruit schemes, in the short term, increase student fruit consumption at school. In these programmes the free fruit schemes tended to operate in isolation from wider school health promotion programmes. Consequently, Teeman et al. (2004) commented on the lack of change in school culture surrounding healthy eating, and Schagen et al. (2005) and Ashfield-Watt (2005) reported that when the intervention ceased students returned to their previous behaviours. All these researchers discuss the need for more systemic approaches to addressing healthy eating in school settings. In reviewing the association between nutrition and school performance, Quigley and Watts Ltd (2005a) conclude that systemic or multistrategy approaches are more successful in improving nutrition.

HPS is a multistrategy approach, and there is a growing body of international evidence concerning the efficacy of such approaches in addressing health concerns and promoting student health and wellbeing (Lister-Sharp, Chapman, Stewart-Brown, & Sowden, 1999; Ofsted, 2006; St Leger, 2005; Stewart-Brown, 2006; Young, 2005). St Leger (2005) notes that:

> School programmes that are integrated, holistic and strategic appear to produce better health and education outcomes than those which are mainly information based and implemented only in the classroom. (p. 145)

A similar conclusion is reached by Lister-Sharp et al. (1999) in their summary of evidence as to the success of school health promotion initiatives. They note that initiatives that use a whole-school model (such as HPS), and therefore are supported by school environmental and policy changes in line with the initiative, are more successful than those that used curriculum approaches only. In a similar vein, Stewart-Brown (2006) concludes that the programmes that are the most successful are whole-school and multifaceted, of a sustained duration, and provide appropriate training.

Looking at the aspects of health and wellbeing focused on by the initiatives they reviewed, Lister-Sharp et al. (1999) and Stewart-Brown (2006) conclude that initiatives that promote mental health, healthy eating, and physical activity are more successful than those that aim to prevent substance abuse or high-risk sexual activity. Stewart-Brown (2006) suggests that substance abuse may be better addressed holistically by programmes that promote mental health. A possible

reason for differences in success rates could be that initiatives that promote healthy eating and physical activity tend to be focused on the whole population, whereas initiatives that deal with behaviours such as substance abuse are addressing a smaller "at-risk" group, and therefore require a different set of strategies.

Although the reviews cited above suggest that schools that use HPS approaches are starting to show evidence of success, St Leger (2001) notes that health promotion does not have a high prominence in many schools. He cites a number of reasons for this. To engage in health promotion, schools need to work in a democratic and student-centred fashion. For staff this requires a shift towards student-centred practice.[7]

In the NZ setting, Robertson (2005) makes a similar point. She suggests that health promotion can be seen to be the "absolute fulfilment" of the Health and Physical Education (PE) curriculum,[8] but this is only the case if ***students*** are the people who are defining and driving the issues to be explored. She notes that teachers are not always fulfilling the intent of the curriculum, as processes which give decision-making power to students are still unfamiliar for many teachers. Robertson further argues that the HPS practice of locating health promotion within school health teams (that is, outside the umbrella of the curriculum) can continue a situation in which health promotion takes a "back seat" within the classroom. Robertson notes that much of the literature about HPS concentrates on the efficacy of the overall model, and does not explicitly explore the curriculum component. Robertson also suggests that teachers need to further develop their understanding of how health promotion intersects with the Health and PE curriculum. In a similar vein, St Leger (2001) notes that there is a need for more professional development (PD) for teachers about implementing health promotion approaches, and adequate resourcing and time frames to support this.

Varied definitions about the nature of health promotion abound, creating an area of confusion which is likely to impact on teachers' practice. Lister-Sharp et al. (1999) provide a list of some of these definitions and note they come from two different paradigms: an individual perspective and a societal perspective. Lister-Sharp et al. describe how these conflicting definitions lead to different models of health promotion. Underpinning the individual paradigm is an assumption that people have control over all their health-related behaviours. This paradigm is associated with health promotion processes that are "done on" or "to" people to improve their health. Definitions that are associated with the societal paradigm emphasise the impact of societal constraints on health and tend to be aligned with health promotion processes that are empowering and done "for" or "by" communities.[9] These two paradigms overlap with "behaviour change" or "ecological" models of health promotion. Table 1 sets out these two models to compare their focus and

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[7] Also commonly called constructivist approaches.

[8] The New Zealand curriculum has eight essential learning areas of which Health and PE is one.

[9] This is not a strict dichotomy. Empowerment approaches can also be used at an individual level.

approaches. This table is adapted from Jensen (1997, p. 420) and from *The Curriculum in Action: Making meaning making a difference.* (Ministry of Education, 2004, p. 16).[10]

Table 1 **Two models of health education and promotion**

Aspect	Behaviour change model (Moralistic health education)	Ecological model (Democratic health education)
Focus	• Educates "about" health by transmitting information • Top-down approaches • Healthy school	• Educates "for" health through the development of competence • Empowerment approaches • Health promoting school
Health concept	• Individual behaviour • Disease-oriented	• Living conditions/lifestyle • Wellbeing
Aim of teacher practice	Behaviour change	Action competence
Teacher roles	Role model (e.g., healthy eating, smokefree)	Democratic/facilitator
School environment	Focus on policies (e.g., canteen food, smokefree)	Focus on challenge, student decision making, school council
Links between school and community	Medical professionals used in school and class	Schools and students are social/change agents
Evaluation	Measurement of students' behavioural changes	Measurement of students' competencies (thinking skills, commitment, etc.)

Nutbeam (2000) suggests there is a need to move towards models that are done "by" or "for" communities such as the ecological model. A similar view is also held by Lister-Sharp et al. (1999). They suggest that initiatives that are empowering are likely to promote positive changes in mental health, while those that are top-down may not. For this reason they suggest there is a need to monitor how health promotion initiatives are delivered to ensure they are participatory (and therefore address health/wellbeing in a wider sense than just physical health).

Health promotion models in the context of the school curriculum

Some of the literature about the NZ curriculum,[11] and associated teacher practice, has relevance to FIS; and in particular, that which addresses the Health and PE curriculum (Ministry of Education, 1999). This curriculum is one of the main vehicles through which teachers educate young people about health and wellbeing. Two of the FIS health priority areas; healthy eating and physical activity, are key learning areas in this curriculum; and sun protection and smokefree behaviours fit within the key learning area: body care and physical safety.

[10] Support material for the Health and PE curriculum.

[11] This curriculum is currently being revised (see Ministry of Education, 2006b), but the key "big ideas" underpinning it are staying constant.

The curriculum is underpinned by a number of "big ideas" or theoretical perspectives. The Mäori concept of hauora (generally interpreted as wellbeing),[12] and its interrelated dimensions,[13] is central to the curriculum, as is the idea that students need to develop the knowledge, lifelong learning skills, and motivations and attitudes that will enable them to make informed decisions. Another foundation for the document is a social-constructivist perspective towards health which aligns with ecological approaches. This perspective acknowledges that learning is socially constructed, and recognises that health and wellbeing are influenced by a number of interconnecting aspects of a wider system: individual; social; organisational environment; community; and policies.

The use of this perspective represents a key shift away from prior approaches to health education which stemmed from behaviour change models and their emphasis on disease prevention for individuals. Looking at the FIS initiative, its origins in the *Cancer Control Action Plan* suggest that the four health priorities were derived using a disease prevention approach, but FIS uses an ecological model (the HPS process) to address these areas.

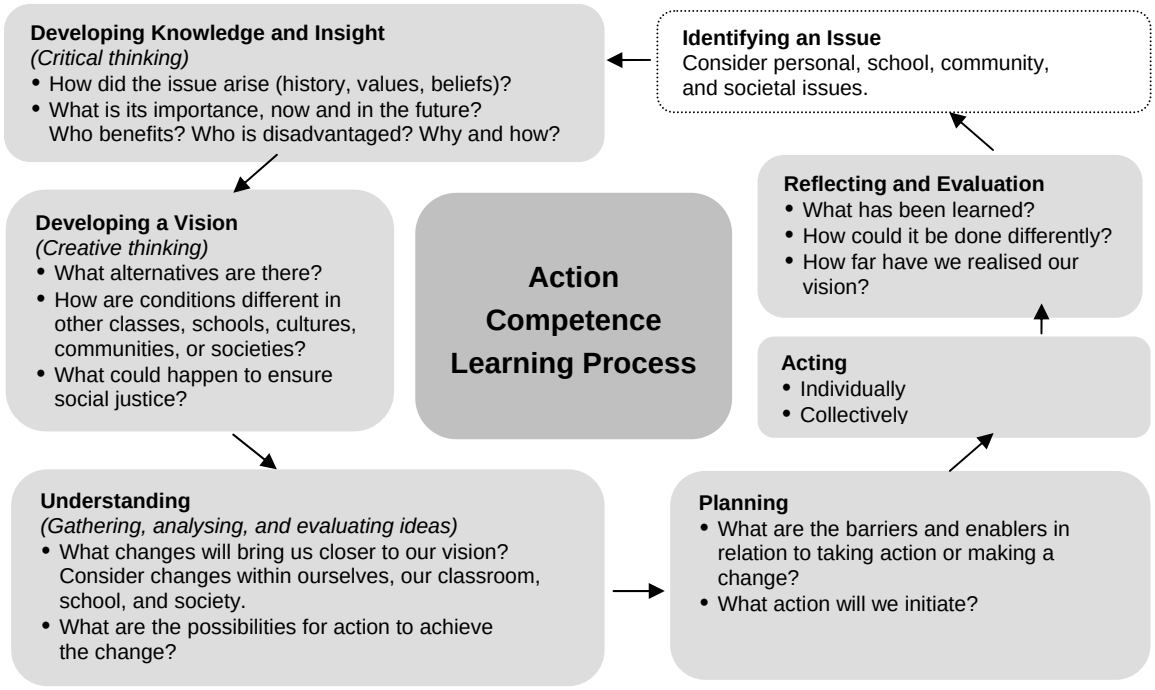
Another "big idea" underpinning the curriculum is the need for students to engage in health promotion.[14] That is, to be able to understand and critically evaluate all of the interconnecting factors that affect health and wellbeing, and take action in regard to their or community health and wellbeing. To assist teachers to design programmes that enable students to do this, models are available, such as the action competence learning process (developed for secondary students) shown in Figure 3, and the shared learning in action process (developed for younger students) shown in Figure 4. A version of these models is included in the Ministry of Education's new food and nutrition guidelines (Ministry of Education, 2007). These models have substantial overlap with the HPS process shown in Figure 2.

[12] Concepts such as hauora carry cultural meanings which do not necessarily neatly map onto the cultural concepts of their translated meaning (that is, wellbeing).

[13] Hauora encompasses four dimensions that influence and support each other: taha tinana (physical wellbeing); taha whänau (social wellbeing); taha hinengaro (mental and emotional wellbeing), and taha wairua (spiritual wellbeing).

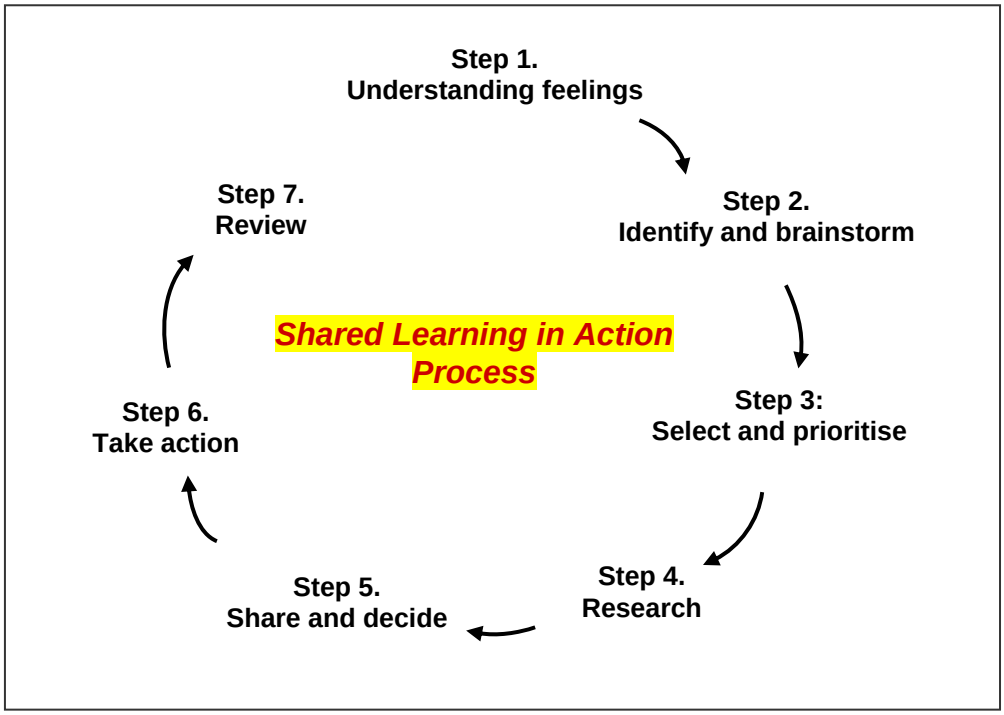
[14] This approach to health promotion has the Ottawa Charter (World Health Organization, 1986) as its foundation.

Figure 3 **An action competence process***



* Diagram based on Tasker (2000). Available at: http://www.tki.org.nz/r/health/cia/make_meaning/teach_learnappr_proc_e.php

Figure 4 **An action competence process for primary students***



* Diagram of a process developed by King and Occleston (1998).

These action competence models, and the HPS process, are founded on the idea that students (and communities) need to do more than "learn about" an area by being the passive recipients of information; they need to be empowered as they "learn by doing" as they take action on issues of concern to themselves and society. These ideas overlap with the concept of "critical health literacy" described by Nutbeam (2000) and St Leger (2001) which centres around the need for young people to develop the cognitive and social skills required to unpack messages and take individual or collective action; and aspects of social-cognitive models of health promotion (Bandura, 2004), which draw on both behaviourist and collective action approaches.

The ecological perspective, and ideas about student empowerment, also underpin the models used by some of the FIS partners, or in conjunction with FIS. For example, the Active Schools[15] PD model emphasises student-centred approaches and the training of student leaders to organise school physical activities. Enviroschools[16] is another example. This initiative uses an action competence model to improve the school or local environment.

Locating FIS within a shift towards student-centred practice

The approaches described above challenge school staff to shift their practice towards more collaborative and student-driven approaches. A number of other developments in the NZ education system are also attempting to shift the traditional "transmission" or "chalk and talk" model of education. Similar to the HPS process, some of the inquiry[17] and integrated learning[18] models popular in the primary sector emphasise action competence (although the information literacy origin of some inquiry models means that some are framed more as a tool to support students to gather, evaluate, and present information, rather than take action). The current waves of literacy and numeracy PD occurring in the primary schools sector emphasise student-centred practice and ownership over learning through increased opportunities for students to explicitly learn and practise a range of strategies, set and act on personal goals, and critically reflect. The new Key Competencies framework and much of the current curriculum revision (Ministry of Education, 2006b) is also underpinned by student-centred practice, lifelong learning approaches, and a focus on structuring learning programmes around significant themes such as sustainability and citizenship, and utilising local opportunities and resources. The Key Competencies are the:

> …capabilities people need in order to live, learn, work, and contribute as active members of their communities. (Ministry of Education, 2006b, p. 11)

The five Key Competencies for the primary and secondary sector are: managing self; relating to others; participating and contributing; thinking; and using language, symbols, and texts. The Key Competencies framework acknowledges the need to prepare young people to take their place in the fast changing world of the knowledge society. Commentators consider that the rapidity of

[15] http://www.sparc.org.nz/education/active-schools/overview
[16] http://www.enviroschools.org.nz/howitworks.php
[17] http://www.inquiringmind.co.nz/WhatIsInquiry.htm
[18] http://www.tki.org.nz/e/community/integration

change in the knowledge society has promoted changes to how we view knowledge and increased the importance of young people having a clearly defined sense of self (Gilbert, 2005; Hipkins, 2005). These changes have implications for educational practice. In this era of rapid change, Hipkins (2005) suggests that having a sense of self and location is a key anchor for young people, and therefore these need to be central concepts when teaching subjects such as health and PE which have connections with wellbeing. She suggests that approaches that enable young people to "learn about" challenging concepts such as the social determinants of health, whilst also being empowered by "learning by doing" as they explore issues of importance to themselves and their community, are likely to support young people to develop both academic skills and Key Competencies, as well as a sense of individual and community identity.

The FIS initiative is located within this overall shift in education towards student-centred practices and a focus on lifelong learning. The information presented above suggests there is a growing coherence between current approaches in NZ education, and ecological models of health promotion such as HPS.

Given the central importance of the curriculum and teacher practice on students' educational experiences, an exploration of how the curriculum is enacted in FIS schools, and how it intersects with FIS, is one aspect of the Healthy Futures evaluation.

Messages from the school effectiveness and school change literature

Exploring how change occurs in schools is another aspect of the Healthy Futures evaluation, and the school change and improvement literature contains many messages that are pertinent to FIS. St Leger (2001) notes that the features of successful schools identified in the school effectiveness literature overlap with the features of the HPS model that aim to develop a healthy school culture.

The school change literature points out that change in school environments is a complex endeavour, and suggests there are many interacting factors that contribute to the change process. Fullan (2005) states that for sustainable change the whole system needs to change. (This is a premise of the HPS approach with its framework that addresses three levels of the school system.)

Hargreaves, Earl, and Ryan (1996) provide a useful overview of some of the factors that influence change in schools. They describe change in a school environment as a "technical" process, that includes proper design and planning; as a "cultural" process, in which effective relationships are built and collaborations undertaken; and as a "political" process. They outline a number of key principles for effective change which overlap with those mentioned by other research concerning school effectiveness or change (see Boyd et al., 2005; Hargreaves & Fink, 2004; Mitchell, Cameron, & Wylie, 2002; Russell, 2003; Sammons, Hillman, & Mortimore, 1995; Stoll & Fink, 1996; Timperley, 2003). Hargreaves, Earl, and Ryan(1996) note the need for:

- clear conceptions of the reasons for change
- realistic expectations of the change
- commitment of key staff

- skilled collaborative leaders who have the ability to manage change and deal with conflict
- the development of a "collaborative culture" within the school and wider community
- organisational learning
- a manageable and realistic time-frame
- a long-term commitment
- adequate resourcing of the change
- student and parent involvement
- implementation processes within the school that ensure change occurs and that other school structures, such as timetabling, are taken into account.

Other researchers have extended these ideas. For example, Newmann, Smith, Allensworth, and Bryk (2001) suggest that coherence between models and approaches, as described in the above section on student-centred practice, is another factor that is likely to result in improvements in learning outcomes for students.

To support us to understand the complexities of change within a school environment, the school change and effectiveness literature has been used to inform the design of the Healthy Futures evaluation and the analysis of the findings.

2. The Healthy Futures evaluation design

Evaluating settings-based multifaceted approaches

Commentators suggest that new evaluation paradigms are needed to evaluate initiatives such as HPS that are settings-based (Dooris, 2006; Lister-Sharp et al., 1999; Rowling & Jeffreys, 2006; Stewart-Brown, 2006; Young, 2005). From a review of evidence as to the effectiveness of HPS approaches, Stewart-Brown (2006) concludes that holistic settings-based evaluations are needed to build an evidence base about all the elements that contribute to the HPS approach. Rowling and Jeffreys (2006) comment on the lack of appropriateness of experimental methods and the "gold standard" of health evaluation—the randomised controlled trial (RCT)—for assessing multifaceted context-based initiatives. They consider there is a need to develop new evaluation paradigms that draw on educational perspectives on evidence, and bodies of literature that acknowledge how schools function as organisations and how teachers practise. Commentators also note that valid measures are needed which address a wider range of outcomes than just physical health. Examples include measures of young people's mental and social wellbeing (Lister-Sharp et al., 1999) or thinking skills (Jensen, 1997).

Healthy Futures evaluation approach

As outlined above, in view of the complex and settings-based nature of FIS, the feasibility of solely using a "scientific" method of inquiry such as an experimental evaluation design is limited. Therefore the Healthy Futures evaluation draws on a "realist" approach (Kaneko, 1999). This approach is increasingly being used for evaluations of social and organisational interventions. A realist approach draws on qualitative and quantitative methods to explore context and content as well as outcomes. It aims to address the question: "What works, for whom, how, and in what circumstances?"

A realist perspective is predicated on the understanding that programmes and initiatives are developed to create change in particular contexts, by introducing new mechanisms or disabling old ones. An initiative may incorporate any number of change mechanisms, which may be triggered by different events. Therefore different outcomes are likely for different participants. The contexts in which initiatives operate (organisational, cultural, historical, etc.) make an important difference to the outcomes that are achieved in different settings.

Realist research and evaluation is reliant on description and inference from observations and interviews in order to build up a composite picture of the functioning of an initiative or programme. Therefore, the Healthy Futures evaluation is designed as a mixed-method longitudinal study which draws on qualitative information gathered through interviews and case studies, as well as findings from a quantitative impact evaluation. This allows for a greater breadth of analysis than could be obtained in a single-method study (Burke Johnson & Onwuegbuzie, 2004; Patton, 2002; Yin, 2003). The evaluation utilises health and educational methods, as well as understandings from the literature in these two areas.

New Zealand research about HPS

In the late 1990s, an HPS pilot was funded in Northland and Auckland by the Health Funding Authority. Regional HPS co-ordinators were employed to trial three models of working with schools. The pilot had an attached evaluation component which explored the impact of the different delivery models and the dimensions of success for HPS (Casey, Masters, & Wyllie, 1998; Jenkins, 1999; Postlethwaite, Casey, & Wyllie, 2000; Wyllie, Postlethwaite, & Casey, 2000).

Overall, Wyllie et al. (2000) reported that using the HPS process had resulted in a range of positive impacts in schools, most notably an increased emphasis on student health and wellbeing. The evaluation team also made a number of recommendations, which, if addressed, would be likely to support longer term sustainability. These included the need to: continue to fund HPS co-ordinators and support existing and new schools to use the HPS process; make a commitment to fund the initiative for at least three years; locate schools in clusters; ensure key school staff such as the principal and health teacher were onboard; encourage schools to develop a health team to support their activities; raise the profile of mental health in schools; and encourage schools with high numbers of Mäori and Pasifika students to make the health of these groups a priority and make connections with parents and whänau. The need to structure HPS to ensure that it had a Mäori workforce and more actively addressed Mäori perspectives was also discussed (Jenkins, 1999; Wyllie et al., 2000). The findings from the evaluation of the pilot informed the current shape of FIS. The current study provides an overview of FIS/HPS practice at a national level and is informed by this prior research.

Focus of the Healthy Futures evaluation

The Healthy Futures evaluation has a dual emphasis: charting changes in students' knowledge, behaviours, and attitudes in regard to the four health areas, and exploring the context of change.

Rather than looking for change in a predetermined set of indicators, the Healthy Futures evaluation is exploratory in nature. Schools are at the heart of FIS, so the main focus is on the school setting, and the complexities of change in this setting. We used the key themes of the HPS

framework to explore and categorise the potential sites of change within the school system. These themes are:

- school organisation and environment
- curriculum, teaching, and learning
- community links and partnerships (with parents/whänau)
- community links and partnerships (with interagency partners and other local groups).

The Ministry of Health and partner agencies have developed a continuum for each health priority area. These describe the process a school is likely to go through as they use the HPS model, and a range of likely activities that may be evident in relation to these themes. We used these descriptions to provide possible indicators of change for the evaluation.

Healthy Futures incorporates aspects of formative (supporting improvements to an initiative), process (describing or documenting activities that happen as part of an initiative), and impact (making judgements about the results of an initiative) evaluation. In 2005 and 2006 the emphasis is on process and formative evaluation so that information can be generated to assist stakeholders to improve the initiative. This is the main focus of this report. As the evaluation continues, the emphasis will move to a deeper consideration of impacts, good practice, and sustainability.

Evaluation questions

To frame the data collection, a series of evaluation questions was developed from the questions detailed in the request for proposals (Ministry of Health, 2005). Three key questions are focused on:

1. What are the factors that support and hinder the implementation of FIS, and are likely to impact on its longer term sustainability?
2. What changes are occurring within schools and to professional practice in regard to school approaches to health and wellbeing?
3. What changes are occurring in students' knowledge, attitudes, and behaviours in regard to the four health areas?

Sub questions pertaining to these three overarching questions are outlined below. Different questions will be emphasised over time depending on whether the phase of the evaluation is formative/process or impact focused.

The implementation process and models used

1. What are nonschool stakeholders' and school staffs' expectations of FIS?
2. How do schools go about developing strategic plans for FIS, and what models do schools use for implementing the various aspects of FIS?

3. How do nonschool stakeholders contribute to FIS?
4. What are the factors that support and hinder the implementation of FIS?
5. What models are being developed to support the longer term sustainability of FIS?

Changes to school and professional practice

6. What changes in school-wide practices and culture are evident as a result of participating in FIS? What is the extent and nature of the changes identified, and how did these changes come about?
7. What changes in teacher practice and professional knowledge are evident as a result of participating in FIS? What is the extent and nature of the changes identified, and how did these changes come about?
8. How do schools make connections with their parent community to communicate and work together on FIS goals? What is the extent and nature of the changes identified, and how did these changes come about?

Changes to student knowledge, behaviours, and attitudes

9. What changes in students' in-school and out-of-school knowledge, behaviours, and attitudes are evident in relation to the four key aspects of FIS? (This question also incorporates a focus on the opportunities provided to students to show leadership in the health priority areas and develop lifelong learning skills.)

Evaluation methods and plan

Three main methods are being used to gather data for this evaluation. These are:

- surveys of school staff and students at FIS and non-FIS comparison schools
- case studies of FIS schools showing good practice in aspects of FIS
- interviews with national and regional interagency partners.

Overall, the evaluation design involves yearly surveys and interviews, and two sets of case studies. Table 2 provides an overview of the Healthy Futures research and evaluation plan.

Table 2 **Summary of key FIS and Healthy Futures activities**

Key FIS and evaluation dates	Healthy Futures methods and activities		
	Surveys	**Case studies**	**Interviews with a sample of nonschool partners**
Oct, Term 4, 2005: 60 Phase 1 schools start FIS with national fruit provider			
Nov-Dec, Term 4, 2005	• Short online survey of all Phase 1 FIS lead teachers.		• Phone interviews with 6 Phase 1 FISC.
Mar-Apr, Term 1, 2006 **Mar-May, Term 1–2, 2006**	• Baseline survey of Year 4 students and selected staff at about 40 Phase 2 FIS schools (principal, FIS lead teacher, Year 4 teacher). • Baseline survey of Year 4 students and selected staff at about 40 comparison schools (principal and Year 4 teacher). • Retrospective baseline survey of all Phase 1 FIS lead teachers.		• Phone interviews with 14 national and regional interagency partners.
May, Term 2, 2006: 54 Phase 2 schools start FIS with national fruit provider **Oct, Term 4, 2006: 156 Phase 3 schools start FIS, mostly with national fruit provider**			
Nov-Dec, Term 4, 2006	• Repeat survey of about 40 Phase 2 FIS schools focusing on Year 4 students and selected staff. • Repeat survey of Phase 1 FIS lead teachers.	Visit 6 schools for case studies of good practice.	Phone interviews with about 24: • Phases 1 and 2 FISC • national and regional interagency partners.
Feb-Mar, Term 1, 2007 **Mid 2007**	• Retrospective baseline survey of 50 additional Phase 3 FIS lead teachers. • Short online survey of all FISC and regional interagency partners.		
End Term 2, 2007: Some Phase 1 schools start to organise own fruit			
Term 3/4, 2007	• Repeat survey of about 40 Phase 2 FIS schools, focusing on Year 5 students and selected staff. • Repeat survey of Phases 1 and 3 FIS lead teachers. • Repeat survey of the comparison schools focusing on Year 5 students and selected staff (most of these schools are now part of Phase 3). • Repeat online survey of all FISC and regional interagency partners.		Phone interviews with about 24: • Phases 1, 2, and 3 FISC • national and regional interagency partners.
End Term 3, 2008: Phase 1 schools finish funding			
Term 3/4, 2008	• Repeat survey of about 40 Phase 2 FIS schools, focusing on Year 6 students and selected staff. • Repeat survey of the comparison schools, focusing on Year 6 students and selected staff (most of these schools are now part of Phase 3). • Repeat survey of Phases 1 and 3 FIS lead teachers. • Repeat online survey of all FISC and regional interagency partners.	Visit 6 previous or new schools for case studies of good practice.	Phone interviews with about 24: • Phases 1, 2, and 3 FISC • national and regional interagency partners.
End Term 1, 2009: Phase 2 schools finish funding			
End Term 3, 2009: Phase 3 schools finish funding			

The range of data collection methods addresses a range of purposes. The surveys gather the perspectives of a large and representative group of participants from both FIS and non-FIS

schools. The interviews with the national and regional interagency partners gain the perspectives of the core group responsible for supporting staff in FIS schools. The case studies provide the context of change and illuminate elements of good practice in FIS schools. Each data collection method is described in more detail later in this report.

Table 3 shows how the data collection methods map to the evaluation questions. For each question, more than one source of information is being used to inform the findings.

Table 3 **Data collection methods used to explore the evaluation questions**

	Data collection method						
	Survey		Case studies			Interviews	
Focus question	Students	School staff	Regional interagency partners	Staff interviews and focus groups	Student focus groups	Parent/ whänau focus groups	National and regional interagency partners
1. Expectations of FIS		√	√	√			√
2. Models used to implement FIS		√	√	√			√
3. Changes to partnerships with interagency partners		√	√	√			√
4. Success factors		√	√	√		√	√
5. Sustainability		√	√	√		√	√
6. Changes to school organisation and environment	√	√	√	√	√	√	√
7. Changes to curriculum, teaching, and learning	√	√	√	√	√		
8. Changes to partnerships with parents/whänau		√	√	√	√	√	
9. Changes to students' knowledge, behaviours, and attitudes	√	√		√	√	√	

Data collection methods

The main data collection methods are described below.

Surveys of school staff and students

The main method used to collect data is a survey of FIS and comparison schools. Phase 1 schools were starting FIS at the time the evaluation was contracted, and at the end of 2005, FIS lead teachers from Phase 1 schools completed an online survey about the initial implementation of FIS.

To enable baseline data to be collected, the survey data collection is mostly focused around the cohort of Phase 2 schools. Four main questionnaires were developed for use within school settings: one each for students, FIS lead teachers, principals, and classroom teachers. At Phase 2 schools, one cohort of students, who will be each school for the duration of the evaluation, is being tracked (that is, those students who are in Year 4 in 2006, Year 5 in 2007, and Year 6 in 2008). In Term 1 of 2006, prior to starting FIS, students and staff at Phase 2 schools completed surveys. They then completed a follow-up survey at the end of 2006. Similar follow-up surveys will be sent to Phase 2 schools at the end of 2007 and 2008. We asked school staff to ensure that the data were collected on Tuesday to Friday so that students could answer the questions about what happened at school the day before.

FIS lead teachers from Phases 1 and 3 schools are also being sent surveys to explore any similarities or differences between the three cohorts of FIS. At the start of 2006, they completed a retrospective baseline survey similar to that given to Phase 2 schools. At the end of 2007 and 2008 they will be sent follow-up surveys.

Selecting a comparison group for the school survey

To enable us to collect information from schools, we designed a quasi-experimental survey approach. That is, the initial survey included a group of FIS schools and a comparison group of non-FIS schools. It was planned that this would give two points of comparison; it would enable us to track changes over time within FIS schools as well as compare differences between FIS schools and non-FIS schools. To provide a comparison group, we developed a sample list of schools that broadly matched Phase 2 FIS schools by decile, roll size, and geographical location. For the baseline survey we approached about 60 schools (aiming to get 40 participating schools). In total, in Term 1 of 2006, 34 schools completed the baseline survey as part of a comparison group. In general, these schools matched FIS schools in terms of roll size and geographical location. There were small differences between the student population of FIS and comparison schools, with FIS schools having a higher percentage of Māori or Pasifika students. The data from the comparison schools will be reported on in more detail in future reports.

Since the baseline survey, the coverage of FIS has been widened to include nearly all decile 1 schools. This resulted in all but six of the comparison schools becoming part of Phase 3 of FIS, reducing their ability to function as a comparison group.[19] To counteract this, we are proposing to use a modelling approach to analyse the next round of comparison group data at the end of 2007

[19] The comparison group was not sent follow-up surveys prior to their involvement in Phase 3 owing to the short timeframe (approximately 4–5 months) that would have elapsed between the baseline and follow-up survey.

that takes account of the three groups now in the data. One group is the students in Phase 2; the second group is the students originally in the comparison group who are now part of Phase 3; and the third group contains the remaining students in the comparison group. Although the third group is much smaller than originally intended we are confident that there will be enough data to allow the analyses we hope to carry out. These will be complemented by the second group (that is, Phase 3 students), giving an extra dimension to the analysis.

For a number of reasons, this approach is more suitable to evaluating FIS than a randomised control trial (RCT). As noted previously, the literature suggests that RCTs are not necessarily appropriate for evaluating multifaceted context-based initiatives such as FIS (Rowling & Jeffreys, 2006). The processes[20] used to select FIS schools precluded the use of a randomised approach, and this alone disqualifies any RCT structure. In addition, the schools that would have been included in a "control" group, that is, other decile 1 schools, are now nearly all part of FIS. There are other factors that promote the use of a multi-method design. Given that FIS is not operating in isolation, attributing change to the FIS initiative is complex. There are many initiatives and media messages about the four health areas impacting on schools and young people. For example, a number of schools are part of initiatives such as Project Energize, the Mission-On package has just been launched by the Ministry of Education, there are ongoing TV advertisement campaigns promoting smokefree houses and cars and SPARC initiatives such as Push Play, and a number of reality TV programmes which send young people messages about obesity and healthy living. Further confounding this situation is the fact that FIS is not a "package" or "programme" as schools have substantial licence about how they implement FIS. For these various reasons, a multi-method design, that allows findings to be triangulated and attribution of change to be explored, is more appropriate.

Survey sampling

Given the small numbers of FIS schools in Phases 1 and 2 (60 in Phase 1 and 54 in Phase 2), surveys were sent to all schools that were willing to take part in the evaluation. A different approach was used to select a sample of 60 Phase 3 schools. Owing to the large number of schools coming onboard in Phase 3, national and regional partners identified that this could create staffing capacity issues. Given this, we used a purposeful sampling approach (Patton, 2002) to top up our comparison group sample so that it included a larger proportion of schools from the two groups in Phase 3 likely to experience capacity issues: schools in areas that did not have an existing Phase 1 or 2 FIS infrastructure, and schools in areas with over 15 Phase 3 schools.[21]

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[20] A range of criteria was used to select the initial FIS regions and schools. Regions which were well served by the interagency partners were the first to be selected. Within these regions, low-decile schools were selected using stakeholder knowledge and to fit within regional clusters.

[21] Most of the schools were initially part of a comparison group. Staff at some of these schools had already completed a baseline survey at the start of 2006. In addition, approximately 80 additional schools were sent surveys at the start of 2007.

Design of the student survey

To collect data on students' knowledge, attitudes, and behaviours in relation to the four health areas, we developed a student survey that could be repeated over time. This survey contained questions about students' in- and out-of-school behaviours and was mostly focused on their activities the day before competing the survey. At the start of 2006, prior to FIS, this survey was sent to the Phase 2 schools that agreed to be part of the evaluation, to be completed by their cohort of Year 4[22] students. These Year 4 students were considered old enough to complete a survey with minimal support. Focusing on Year 4 allowed us to track a cohort over the three years of FIS.[23]

A random design was not selected, nor was a design that sampled students from different year levels. Both would have posed logistical difficulties. It would have been difficult to track the same students if they were sampled within schools, and if teachers were asked to give surveys to subgroups in their class. These difficulties would be likely to result in a low response rate.

Given the high mobility of students in low-decile schools, it may not be possible to track the same students. Instead we are endeavouring to track the same cohort, that is, all Year 4 students in 2006, all Year 5 students in 2007, and all Year 6 students in 2008.

The survey was designed to be completed as a classroom activity with teacher support. Teacher guidelines were sent out with the surveys. Students were asked to give identification data on the survey and each student and school was allocated a unique code number to enable them to be tracked over time. The student questionnaire includes demographic questions to ensure that our analyses can include the experiences of the three main groups of students in FIS schools: Māori; Pasifika; and NZ European.

To develop questions in the student survey about vegetable and fruit intake, we obtained permission to use the Day in the Life Questionnaire (DILQ) (Edmunds & Ziebland, no date). This self-report questionnaire has been validated as a measure to assess the vegetable and fruit intake of students aged 7–9, and collects data which are comparable to observations (Edmunds & Ziebland, 2002). The DILQ also includes questions about physical activity. Minor adjustments were made to the DILQ questions to suit the NZ setting.

We also developed a number of additional questions about students' knowledge, attitudes, and behaviours in relation to the four health areas. To do this we used ideas from: the 2002 NZ National Children's Nutrition Survey (Parnell, Scragg, Wilson, Schaff, & Fitzgerald, 2003), the FIS pilot (Ashfield-Watt, 2005), the Youth2000 Health Survey (Adolescent Health Research Group, 2003), a study on sun protection in NZ schools (Jopson & Reeder, 2004), Assessment Resource Bank[24] items, the UK Fit to Succeed Survey (Schools Health Education Unit, 2003), the evaluation of the UK School Fruit and Vegetable Scheme (SFVS) (Schagen et al., 2005), and the

[22] Year 4 students are in their fourth year of primary schooling and are about 8–9 years old.

[23] At contributing schools, students in Year 7 and above will have moved to intermediate schools by 2008.

[24] http://arb.nzcer.org.nz/nzcer3/nzcer.htm

evaluation of the UK Sustain Grab 5! project (Edmunds & Jones, 2003). The student survey is not included as an appendix given that a substantial proportion of it was developed from the DILQ, which we obtained permission to use.

Along with changes to students' knowledge, attitudes, and behaviours connected to the health areas, we are also interested in approaches which promoted student empowerment, and the amount and type of leadership opportunities offered to students. It is difficult to find standardised instruments to collect data about these aspects of FIS from students. Instead, questions pertaining to these areas were included in teacher surveys and in teacher and student case study interviews.

Design of the school staff surveys

We developed three generic questionnaires for school staff at Phase 2 FIS schools: principals; FIS lead teachers; and classroom teachers. Principals act as the conduit to the board of trustees, for school policies, and have a key role in supporting the long-term success of initiatives (Boyd et al., 2005; Hipkins & Hodgen, 2004; Hipkins, Vaughan, Beals, & Ferral, 2004). Given this, it is important to canvass their perspectives on FIS. FIS lead teachers are the main conduit by which information about FIS is transmitted to other school staff and are likely to be leading school health promotion initiatives. Classroom teachers enact the Health and PE curriculum. All these perspectives are vital to understand the initiative in the complexity of the school setting.

Each questionnaire contained some questions that could be repeated to ascertain change over time. To develop the survey questions, we used the HPS continuums for the four health areas developed by the partner agencies, ideas from prior NZ (Jenkins, 1999; Postlethwaite et al., 2000; Wyllie et al., 2000) and international research about HPS (Lister-Sharp et al., 1999), examples of school policies, understandings about the factors that influence change in school settings, as well as other information and research about initiatives in each of the four health areas. This information was used to develop a list of likely policies, initiatives, and activities that could occur in a school community in relation to each of the health areas.

The three staff questionnaires included some common areas such as questions about staff expectations of FIS and the potential impacts of FIS on students and school practices. In addition, questions for principals and lead teachers focused on whole-school approaches to health and community consultation, particular initiatives in the four health areas, and sustainability. Questions for classroom teachers centred on activities in the classroom related to the four FIS areas, use of practices that promote student empowerment, and access to resources and PD. A copy of the Phase 3 lead teacher baseline survey is contained in Appendix B and a copy of the Year 4 teacher end of 2006 survey in Appendix C.

During 2006–2008, the principal and the FIS lead teacher at Phase 2 schools are being sent a yearly survey, and a classroom teacher survey is being sent to a teacher whose class is the same year level as the survey students. Therefore in 2006 the classroom teacher surveys were completed by Year 4 teachers, in 2007 they will be completed by Year 5 teachers, and in 2008, Year 6 teachers.

At the start of 2006, comparison schools were also sent a principal and classroom teacher survey. The staff surveys are in English. Staff at kura kaupapa Mäori are given the option of responding by telephone in te reo Mäori.

Survey piloting and reviewing

The initial English version of the student survey was piloted and reviewed twice, first by eight Years 4–6 students of different ethnicities and gender, some of whom attended a Kura Kaupapa Mäori. After modification, the survey was piloted again by a class of 23 Year 4 students at a FIS school.

The student survey was translated into Mäori so that students in kura and immersion units could complete it. This version was checked for cultural appropriateness by the Mäori adviser to Healthy Futures and was reviewed by a small number of students who attended a local kura kaupapa Mäori. All schools were offered the option of being sent either or both versions of the survey.

The English version was also reviewed by the study's Pasifika adviser. Changes were also made following feedback from Healthy Futures advisers and HPS/FIS personnel.

The questions for school staff were piloted by a Year 4 teacher at a FIS school and a teacher who had been a HPS lead teacher.

School survey response rates

Table 4 shows the number of schools that have responded to each of the surveys to date. The abbreviation "NS" (Not Surveyed) is used to refer to any group which was not sent a survey for a particular data collection round.

Table 4 **School response rates to surveys**

	End 2005 Implementation survey		Start 2006 Baseline survey		End 2006 Follow-up survey	
FIS schools	**School N**	**School response rate %**	**School N**	**School response rate %**	**School N**	**School response rate %**
Phase 1 FIS lead teachers	27/60	45	31/60	52	40/60	67
Phase 2 FIS lead teachers	NS	-	31/54	57	35/54	65
Phase 2 student surveys	NS	-	35/54	65	45/54	83
Phase 2 principals	NS	-	35/54	65	40/54	74
Phase 2 Year 4 teachers	NS	-	33/54	61	38/54	70
Comparison schools/Phase 3 schools						
Student surveys	NS	-	34	NA*	NS	-
Principals	NS	-	24	NA*	NS	-
Year 4 teachers	NS	-	26	NA*	NS	-
Phase 3 FIS lead teachers**	NS	-	59/81	73	NS	-

* A response rate is not applicable due to the sampling method used.

** These teachers completed a baseline survey at the start of 2007.

For the start of 2006 baseline student survey, we received 854 (797 English; 57 te reo Mäori) student questionnaires from Phase 2 FIS schools and 890 (879 English; 11 te reo Mäori) from comparison schools. At the end of 2006 we received 982 (915 English; 67 te reo Mäori) student questionnaires from FIS schools. Characteristics of the Phase 2 and comparison schools that returned student surveys are shown in Appendix D.

Over time the response rates to the surveys have increased. This is an encouraging trend given current concern about the number of surveys school are asked to complete in combination with the accountability requirements placed on schools. It is likely that there are a number of reasons for this increase. They could include: promotion of the surveys by FISC and the Healthy Futures project officer; the value that school staff place on the FIS initiative; an increased desire by school staff to have their views heard about the initiative; or increasing familiarity with the evaluation process and the individual data profiles which are returned to schools (see Appendix H).

FISC and interagency partner interviews

The FIS initiative is designed to connect school staff with a range of partners in the health and education sectors. To explore the perspectives of these partners, this study includes yearly interviews with a sample of interagency partners, representing key organisations involved in the governance and implementation of FIS at a national and regional level (for an overview see Table 2).

At the end of 2005, telephone interviews were conducted with one FISC from each of the six Phase 1 regions. The findings from these interviews are presented to the Ministry of Health in the first Healthy Futures interim report (King et al., 2006).

In early 2006, telephone, or in some cases, face-to-face interviews were conducted with 14 national and regional representatives from the Ministry of Education, SPARC, regional sports trusts, the National Heart Foundation, the Cancer Society, and School Support Services. In addition, a roundtable was held with key Ministry of Health staff. Partners from two regions were invited to participate in interviews. These regions were selected on the basis of their different steering group compositions, based on the data collected for the first Healthy Futures interim report (King et al., 2006). The findings from this round of interviews are presented in the second Healthy Futures interim report (King & Boyd, 2006).

In late 2006 and early 2007, a further round of interviews was conducted. In this round we re-interviewed most of the people to whom we had previously talked. This included FISC from five of the six Phase 1 regions and interagency representatives (National Heart Foundation, Cancer Society, regional sports trusts, School Support Services) from two regional steering committees. For continuity, the same two regions were involved in these interviews as in previous rounds. In this interview round we also talked to a sample of three Phase 2 FISC and two public health nurses. In total, 27 partners were interviewed.

The interviews were conducted predominantly by telephone, with some face-to-face interviews being conducted in Auckland and Wellington. The interviews covered partners' roles in FIS and whether these had changed, their expectations of FIS, progress and challenges, and areas of good practice. We used past HPS research to inform the interview design (Casey et al., 1998). In order to encourage a free and frank dialogue with partners, an undertaking was made that sources of quotes would not be identified.

This report provides a summary of the information received from the national and regional partners but primarily summarises the information collected during the end of 2006 interviews. A copy of the end of 2006 regional stakeholder interview schedule is provided in Appendix E.

2007 FISC and interagency survey

To capture the perspectives of a wider range of interagency partners, and to build on the findings from the interviews conducted above, it is planned that an online survey of all FISC and regional interagency representatives will be conducted during mid 2007. The results from this survey will be reported in an interim report later in 2007.

School case studies

An important aspect of Healthy Futures is to illuminate elements of good practice so that it can be shared with the wider FIS community. The low-decile schools that are part of the FIS initiative

face particular challenges that their high-decile counterparts do not share, including higher levels of transience and absenteeism, and lower rates of student achievement. A case study design is an effective way to share good practice, and is commonly used to explore change or innovations in school settings. Case studies allow us to explore the complexities of the context within which school practice occurs (Yin, 2003).

At the end of 2006, a purposeful sampling approach (Patton, 2002) was used to select six case study schools. We asked FISC, and other partners working with FIS schools, to nominate schools that were demonstrating effective practice in two areas the prior data had identified as challenging for schools. These areas were integrating FIS goals into the curriculum, and working with parents/whänau on health goals. We also analysed the student baseline data to identify schools that had existing good practice.

From these two sets of information we developed a list of possible case study schools. From this list we selected six to broadly reflect the range of different FIS regions, phases, and school types (that is, rural and urban schools, large and small schools, primary and contributing, and schools with different patterns of student ethnicity). Table 5 shows the characteristics of these six schools.

Table 5 **Characteristics of the case study schools***

School name	School type and FIS phase	Roll size	Decile	Student ethnicity**	Location	Major and minor FIS foci in 2006	Foci related to FIS
Linwood Avenue School	Contributing Phase 1	332	Decile 2	54% NZ European 23% Mäori 15% Pasifika 6% Other 2% Asian	• Urban • Christchurch	• Healthy eating (major) • PA (major) • Sunsmart (minor)	• Wellbeing • Curriculum themes
Manaia View School	Full Primary Phase 2	336	Decile 1	88% Mäori 9% NZ European 3% Pasifika 1% Other	• Urban • Whangarei	• Healthy eating (major) • PA (major) • Sunsmart (minor)	• Wellbeing • ICT
Porirua School	Contributing Phase 1	230	Decile 3	67% Mäori 19% Pasifika 10% NZ European 3% Asian 2% Other	• Urban • Porirua City	• Healthy eating (major) • PA (major) • Sunsmart (minor)	• Wellbeing • Caring for the environment • Curriculum integration
Riverton School	Contributing Phase 1	214	Decile 2	62% NZ European 37% Mäori 1% Pasifika	• Small urban • Southland	• Healthy eating (major) • PA (major) • Sunsmart (minor)	• Wellbeing • Inquiry units
Te Kura o te Teko	Full Primary Phase 2	125	Decile 1	100% Mäori	• Rural • Whakatane	• Healthy eating (major) • PA (major) • Sunsmart (minor)	• Wellbeing • Caring for the environment • Curriculum themes
Wiri Central School	Full Primary Phase 2	515	Decile 1	58% Pasifika 39% Mäori 2% Asian 1% NZ European	• Urban • Manukau City	• Healthy eating (major) • PA (major) • Sunsmart (minor)	• Wellbeing • Action learning

* Most of this information is from the Ministry of Education 2006 roll return data.

** Percentages do not always add up to 100 due to rounding.

At most of the schools, an initial approach about the case study was made by the local FISC. Following this, NZCER or HOI staff contacted the schools to discuss the case studies. To ensure that the case study of the school with a 100 percent Mäori roll reflected a Mäori world view, a researcher with iwi affiliations liaised with and visited this school.

Case study data collection

A researcher from NZCER or HOI spent one or two days in each school collecting data for each case study. A multi-method approach was used to gather data that incorporated information from interviews with teachers and school leaders, student and parent/whänau focus groups, informal observations, and school documents and data.

The design of the case studies and the case study instruments was informed by national and international school change literature and the methodology of, and findings from, a number of

recent NZCER evaluations and case studies that examined innovation and change in the primary and secondary school environment (Boyd et al., 2005; Boyd, with McDowall & Ferral, 2006; Hipkins, Vaughan, with Beals, Ferral, & Gardiner, 2005; Mitchell et al., 2002).

Interviews with school staff

Each case study included structured interviews or focus groups with all, or a sample, of the main staff members leading FIS activities at each school. Principals, FIS lead teachers, and other school or syndicate leaders were interviewed. At most schools, a sample of teachers from different year levels or syndicates was also interviewed. These interviews focused on the changes that had occurred in school and curriculum practice as a result of FIS, and any partnerships that were developing with health promoters, local business or community groups, and parents/whānau. In a couple of cases we also interviewed health promoters who were working with the schools.

Student focus group interviews

During each case study visit, we conducted a focus group with four to ten students. We asked teachers to seek volunteers from students in Years 5–8 who would be comfortable in a group interview and who were involved in FIS-related activities. At most schools, we talked to students who had some form of health-related responsibility in their class or in the school. This included student fruit monitors, students who were part of school health teams, and students who were part of environmental education initiatives connected to FIS. These focus groups provided insights into activities that had been occurring at school in the four health areas and which supported student empowerment, and students' thoughts about these as well as any changes they had made at school or at home as a result.

Parent/whānau focus group interviews

During most of the case study visits, we conducted a focus group with two to four parents/whānau. We asked teachers to seek volunteers by approaching parents/whānau who were involved on the school health committee or organising FIS-related activities and events. These focus groups aimed to provide insights into the methods used by schools to develop partnerships with parents/whānau, and parent/whānau perspectives on any changes that were occurring at school or at home as a result of FIS-related policies and activities.

These focus group interviews were the main way we collected information about FIS from parents/whānau. The face-to-face discussions allowed us to utilise school channels of communication and follow cultural protocols if necessary. Given that FIS schools are low-decile, we elected not to survey parents. Prior experience suggests that surveys are not an appropriate consultation method for these parent communities. For a number of reasons, such as parents having English as a second language, surveys usually have a low response rate.

Observations and collection of school documents

During the case study visits, informal observations and site visits were conducted at some of the schools. The nature of these observations depended on school activities. For example, we viewed students' work connected to FIS, school shade options, and recycling processes. To inform the case studies, we also collected school policies, planning overviews and timelines, teaching plans, examples of students' work, and other school documents.

Ethics and informed consent

Prior to collecting data for the Healthy Futures evaluation, an ethics application for the study was approved by the NZCER ethics committee. When signing up for FIS, schools agreed to take part in the evaluation component, but NZCER ethical requirements stipulate that participation is voluntary and that participants are fully informed about the study. A number of different systems were put in place to ensure that this occurred. These are detailed below.

Prior to Phase 2 schools being sent a pack of surveys, the principal was sent a letter inviting their school to participate. School staff who were sent a survey were provided with an information sheet about the study and asked for their participation. Students who completed the survey were informed about the study by their teachers and asked for their participation.

All school staff, students, parents/whänau, and national or regional partners who participated in interviews or focus groups were given an information sheet about the study and asked to complete a consent form. Parents/whänau of the students who participated in focus groups were also provided with an information sheet and asked for consent for their child to participate. All national or regional partners and school staff were sent a copy of interview or focus group questions before each interview.

Case study principals were asked for permission for their school to be named, so that the sharing of practice between schools would be possible. To ensure that the information collected fairly represented the experiences of school staff, each school was sent a draft of their case study for staff to review and suggest amendments. Examples of staff and student information sheets and consent forms are shown in Appendices F and G respectively.

Reporting and dissemination

Table 6 provides an overview of the formal reporting activities completed to date as part of Healthy Futures, and those that are planned for the future. The time frame for FIS is also included in this table.

Table 6 **Overview of key Healthy Futures reports**

Key dates	FIS activities and Healthy Futures reporting
Term 4, 2005	**60 Phase 1 schools start FIS with national fruit provider**
Feb 2006	**INTERIM REPORT 1 (Perspectives of Phase 1 lead teachers and FISC on the implementation of FIS)** to Ministry of Health and summaries to schools, FISC, and other stakeholders
Jun 2006	**INTERIM REPORT 2 (Perspectives of national and regional interagency partners on the implementation of FIS)** to Ministry of Health and summaries to schools, FISC, and other stakeholders
Aug 2006	Phase 2 student survey data summaries to schools, Ministry of Health, FISC, and other stakeholders
Term 2, 2006	**54 Phase 2 schools start FIS with national fruit provider**
Term 4, 2006	**156 Phase 3 schools start FIS, mostly with national fruit provider**
Mar 2007	Phase 2 student data summaries to schools, Ministry of Health, FISC, and other stakeholders
Apr 2007	**MAIN REPORT 1** to Ministry of Health
Jun 2007	Summaries of Main Report 1 to schools, FISC, and other stakeholders. Case studies and resources stemming from the evaluation added to FIS website
Mid 2007	Interim Report 3 of online interagency survey to Ministry of Health
End Term 2, 2007	**Some Phase 1 schools start to organise own fruit**
Feb 2008	Phase 2 student data summaries to schools, Ministry of Health, FISC, and other stakeholders
Apr 2008	**MAIN REPORT 2** to Ministry of Health and summaries to schools, FISC, and other stakeholders
End Term 3, 2008	**Phase 1 schools finish funding**
End Term 1, 2009	**Phase 2 schools finish funding**
Mar 2009	Phase 2 student data summaries to schools, Ministry of Health, FISC, and other stakeholders
Jun 2009	**FINAL REPORT** to Ministry of Health and summaries to schools, FISC, and other stakeholders
Sep 2009	Case studies and resources stemming from the evaluation added to FIS website
Sep 2009	Articles written for wider school audience
End Term 3, 2009	**Phase 3 schools finish funding**

A number of different strategies are being used to report findings to stakeholders and to generate discussion about these findings. Reporting methods include: the writing of reports and case studies; presentations and discussions about the findings with national interagency partners at

national FIS reference group meetings and FISC training days; and email summaries to schools and FISC of the key findings from the surveys and interim reports. One key reporting method is the development of individualised school profiles for Phase 2 schools. Following each survey data collection round, every Phase 2 school that returns student surveys is sent a short summary of its student data alongside comparisons with the total FIS dataset. Similar regional and national student data summaries are sent to the Ministry of Health, FISC, and national interagency partners. A mock-up of a school data summary is shown in Appendix H.

Data analysis

Survey data analysis

The information from the fixed-choice questions in the student and staff surveys was entered into a SAS dataset. Codes for the open-ended responses to staff surveys were developed using the HPS framework as a base. A number of questions in the student survey asked students to write and draw what they had eaten the day before. Codes for these questions were developed from the categories used in the 2002 NZ National Children's Nutrition Survey (Parnell et al., 2003), FIS pilot (Ashfield-Watt, 2005), DILQ (Edmunds & Ziebland, no date), and food and nutrition guidelines for healthy children (Ministry of Health, 1997).

Frequency tables were produced for all data. To enable similarities and differences between schools to be identified, we compared the data in relation to demographic variables such as: proportion of Mäori and Pasifika enrolment; school size; school type (full primary, contributing, or composite); school authority (state or state-integrated); school definition (kura, bilingual, or mainstream); FIS region; and rural or urban location. The student data were also checked for differences related to student ethnicity and gender.

For key questions in the staff surveys we compared principal, FIS lead teacher, and Year 4 teacher views. We also compared responses from Phase 1 and Phase 2 FIS lead teachers.

Chi-square statistics from contingency tables were used to test for significance. Where statistical differences were found, this is indicated in the text with the term "significant". We only reported statistically significant differences where the p-value was equal to or less than 0.05. This indicates that there is a 95 percent probability that the differences observed were not a chance association. In some cases, relationships were not statistically significant but a pattern seemed evident. These are indicated in the text with phrases such as "non-statistically significant trend/pattern" or "tended to".

For the student data that are continuous (that is, the data are described using means), confidence intervals are reported (in the text of the report or in tables) for each mean. P-values are given (as table or text footnotes) for statistically significant differences between start and end of 2006 means. The means and 95 percent confidence intervals were calculated ignoring the nested nature

of the data (that is, students were grouped within schools). This will not affect the values of the means, but may underestimate the standard errors which in turn will mean that the confidence intervals may be slightly narrower than they would be taking the structure of the data into account. The quoted confidence intervals should be read as giving an indication of the relative variability in the data, and 95 percent should be taken as an upper bound on the confidence level. The p-values in the tests of significance may be affected, too. However, it is unlikely that results of any of the tests reported as significant would change if the structure of the data was taken into account.

Reporting means and confidence intervals is not applicable for categorical data such as attitude scales. For this type of data, statistically significant differences are indicated by p-values only. A different approach is used to report the school staff data. For this data, statistically significant differences are reported in tables and text without p-values. Smaller numbers of respondents mean that use of p-values could overinflate the importance of these statistics.

All respondents replied to most questions in the surveys but most questions had a small amount of missing data. When this missing data is a significant omission, this is reported in tables or in the text. In particular, a number of questions in the latter part of the start of 2006 student survey had missing data, suggesting that students ran out of time or found these questions difficult to answer. The end of 2006 student survey was slightly longer, but there were markedly fewer nonresponses. In tables and text the numbers who responded are indicated as a proportion of the total number of respondents replying to each survey. For this reason, and in some cases because of rounding, percentages do not always total to 100. For ease of viewing, some of the data are presented in graphs or figures. For the student data, associated percentages are presented in Appendix I.

In reporting the consumption of vegetables, fruit, and other foods we have taken a different approach. In the tables, the percentage of students who reported eating each food type is reported. The associated means are calculated from this subgroup, not the full dataset. This method of reporting avoids including nonresponses and incomplete answers in the count, and therefore acts to minimise the possibility of under-reporting.

Reporting the student data

This report contains the student data from Phase 2 schools. Student and school profiles were compared between the baseline Phase 2 and comparison student data to ensure the comparison group was generally representative. At the time of the baseline data collection, there were few significant differences between the Phase 2 and comparison groups. Therefore it was not deemed necessary to report on the comparison data at this stage. The comparison group, which is now mostly a Phase 3 group, will be returned to at the end of 2007. The results from this data collection round will be reported at a later date.

To ensure that we were able to measure shifts in the student data as robustly as possible, we matched the surveys received from students at the start and end of 2006. Of the surveys received from Phase 2 schools at the end of 2006, we were able to match 591 (60 percent) of the total 982

students.[25] The matched data are discussed in this report. The full dataset contained 854 students at the start of 2006 and 982 students at the end of 2006. This dataset has been used to develop individual school and regional profiles.

Reporting by ethnicity

We have used self-identification (as shown in Table 7) as the basis for reporting student data by ethnicity. For example, all those who identify as Mäori are compared against all those who do not. As a number of the students in this study identified as more than one ethnicity this results in, for the purposes of analysis, some being placed in more than one group. The rationale for the use of student self-identification as the basis for comparison is discussed below.

As the population becomes more diverse, the placement of people in one ethnic group is becoming increasingly problematic. For example, how do you classify a person with Mäori, Pasifika, Asian, and NZ European heritage? Schools tend to record one ethnicity for each student (based on self-identification), thus requiring students' parents/whänau to choose. A prioritisation of Mäori heritage, followed by Pasifika, then Asian and NZ European, is probably most similar to the way ethnicity data are recorded in schools. As shown in Table 7, different ways of prioritising the ethnicity data we collected give quite different distributions. A nonprioritised approach to the analysis of data by ethnicity is becoming increasingly common. As noted in Callister (2004), in recognition of the increasingly multi-ethnic makeup of NZ society, Statistics New Zealand is abandoning its practice of ethnic prioritisation.

Table 7 **Prioritisation of student ethnicity**

Ethnicity	Self-identification* (no prioritisation) (N=591) %	Prioritised by Mäori followed by Pasifika, NZ European, and Asian (N=591) %	Prioritised by NZ European followed by Mäori, Pasifika, and Asian (N=591) %
Mäori	49	50	24
Pasifika	45	35	33
NZ European	41	12	41
Asian	3	1	1
Other	5	1	1
TOTAL	**143**	**99**	**100**

[25] There were three main reasons why 40 percent of students were unable to be matched. The main reason was that more schools returned end of 2006 data, thus adding students to the dataset. In addition, we were unable to match some students' identification data either because we did not have sufficient accurate information or because students had moved schools.

Exploring changes in student behaviour using multilevel modelling

In order to investigate which factors were most important in shifting the behaviour of students, a multilevel modelling approach was used to take into account the structured nature of the data. Students within a particular school are likely to have more in common than students from different schools, and failing to allow for this clustering effect can lead to the overestimation of the significance of differences between groups. Multilevel modelling is a form of regression analysis that takes account of the fact that students and schools are grouped into clusters at different levels. The technique also allows us to take account of a range of background variables, some of which are measured at the student level, for example, the ethnic group a student identifies with. Other background variables can be at the school level, for example, the size of the school roll.

This multilevel modelling process was used to explore which, if any, student or school factors were associated with the two key shifts in the student data: increases in students' intake of vegetables and fruit; and increases in the number of times students engaged in mild to moderate physical activity. This process enabled us to answer questions like: "Was the shift in healthy eating (measured by number of pieces of vegetables and fruit eaten in a day) just to do with the school students attended?" Technical reports of this process, and the models, are located in Appendix J.

Is there a school effect?

A two-level multilevel model (students grouped in schools) was fitted to various outcome measures taking into account any school effects. The difference between the start and end of 2006 for these outcomes was used in order to attribute any change in outcome to various background factors. The models showed that there was a significant school effect in the data with schools accounting for up to 14 percent of the variance within the models.

Student-level background characteristics were then added and it was found there was no significant effect for gender, ethnicity, or the amount a student liked being at school. School-level characteristics were also analysed and it was found there was little benefit to the overall models in terms of how "well" these fitted the data. None of the school characteristic variables were significant. Other possible influencing variables were added to the healthy eating and physical activity models one by one, such as, information about the seniority of staff, the number of other initiatives a school was involved in, and staffs' views on the PD to which they had access.

Case study and interview data analysis

During case study and telephone interviews and focus groups, notes were taken and/or the interviews were recorded. These notes or tapes were qualitatively analysed for themes related to the focus questions for the study. The insights gained from school observations and documents were also used to inform the case studies.

Limitations of the evaluation design

Much of the Healthy Futures data collection relies on self-report. The student survey is not designed as a nutritional survey and therefore should not be interpreted as such. Instead it is designed to indicate potential changes in the four health areas that are likely to lead to positive health outcomes. Along with changes to students' knowledge, attitudes, and behaviours in relation to the health areas, we are also interested in approaches to the curriculum, and how teachers encourage students to develop lifelong learning skills. It is difficult to find standardised instruments in these areas. Therefore, qualitative approaches (such as the school case studies) have been used to explore these aspects of FIS and locate changes within a context. The inclusion of many of the survey comparison schools in Phase 3 of FIS has reduced their ability to function as a comparison group, thereby making attribution of change to the FIS initiative more complex. But the use of multiple methods of data collection enables us to explore questions about attribution.

The Healthy Futures evaluation was designed to address the implementation and impacts of FIS in mainstream NZ schools, and aims to provide a macro- rather than micro-level analysis of FIS within these settings. Schools in NZ are diverse and serve diverse communities. Many of the students in FIS schools, and a number of the teachers, identify as Mäori or Pasifika. In designing this study we endeavoured to find ways to enable a range of voices to be heard. The inclusion of school case studies is one way of exploring the complexity of individual settings and a range of views, and the use of Mäori and Pasifika advisers and researchers in the evaluation team is a way of ensuring that different perspectives are represented. A different approach, which takes into account kaupapa Mäori research principles, would be needed to explore how FIS is enacted within Mäori medium education such as kura kaupapa Mäori.

3. The school survey findings

This section of the report summarises the data from the student and staff surveys. Most of the information reported in this section comes from the baseline survey of Phase 2 schools prior to FIS (at the start of 2006) and the follow-up survey at the end of 2006. At these schools, the cohort of Year 4 students (that is, students who are approximately 8–9 years old), and the FIS lead teacher, the principal, and a Year 4 teacher completed surveys. This section also includes some information from a retrospective baseline survey of Phase 1 FIS lead teachers conducted at the start of 2006, and a follow-up survey conducted at the end of 2006.

The Year 4 student survey

The baseline and end of 2006 student survey asked about students' knowledge, attitudes, and in- and out-of-school behaviours in relation to the four health areas. The majority of questions asked students what they did the day before the survey. The data presented in this summary are from the 591 Year 4 students for whom we had both baseline and end of 2006 data. Approximately half (51 percent) of these students were boys, and the other half (49 percent), girls. The largest group (49 percent) identified as Mäori, followed by Pasifika (45 percent), NZ European (41 percent), Asian (3 percent), and other (5 percent). Approximately four-fifths of the schools these students attended were decile 1, and the remainder, decile 2.

Coverage of the health priority areas

At the end of 2006, we asked students how much they had learnt about the four health priority areas at school during the year. As shown in Table 8, over four-fifths of students reported that they had learnt a lot about the importance of healthy eating, and around two-thirds, about the importance of exercise and being protected from the sun. Students' responses to the question about being smokefree were different, with half reporting they had learnt nothing about this area during 2006. Students' responses give some indication of the different priorities placed on the four health areas during 2006.

Table 8 **Student views on coverage of the health priority areas in 2006**

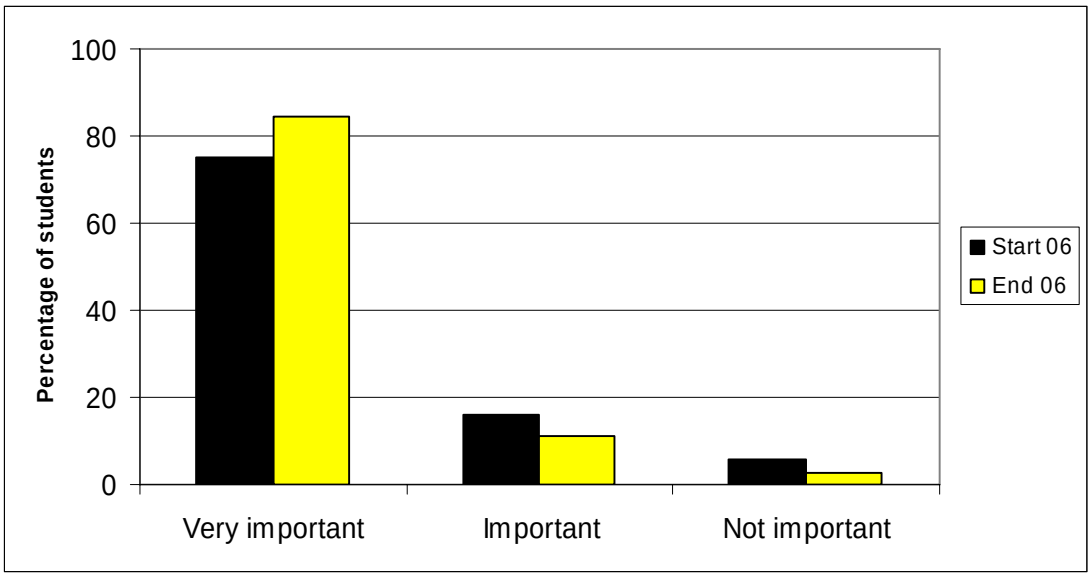
How much did you learn about:	Year 4 students End of 2006 (N=591) A lot %	Some things %	Nothing %
Healthy eating?	88	8	2
Physical activity?	67	23	8
Sunsmart?	61	27	9
Smokefree?	33	15	50

Healthy eating

Students' healthy eating knowledge and attitudes

The student survey contained a number of questions about students' attitudes towards, and knowledge about, healthy eating. As shown in Figure 5, prior to FIS, most students were aware that eating vegetables and fruit every day was important for their health. By the end of 2006, a shift in student views was observed with significantly more considering this to be "very important".

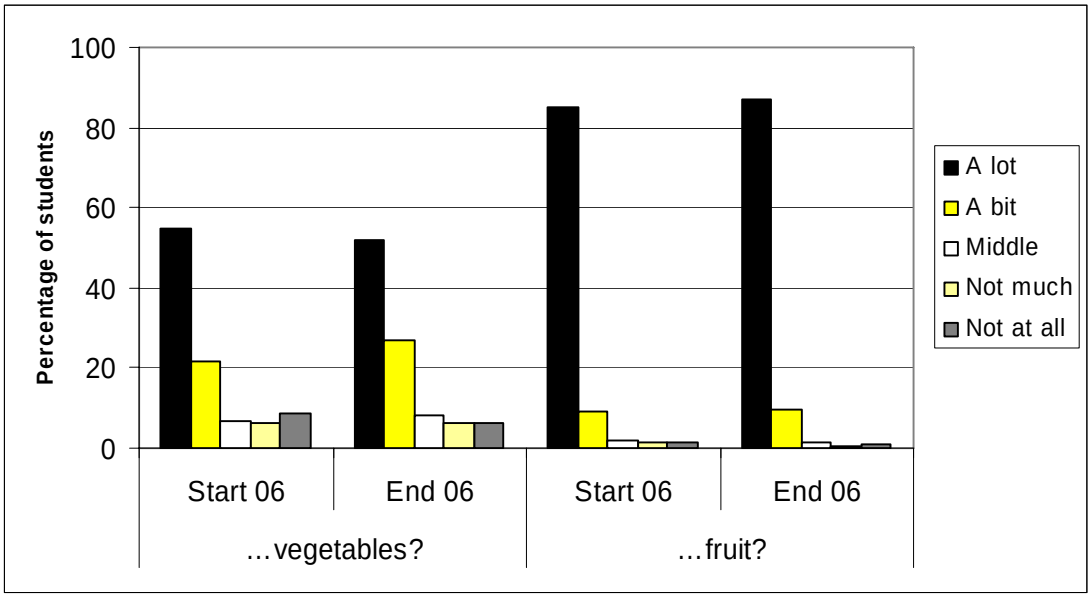
Figure 5 **How important is it for me to eat vegetables and fruit every day*? (N=591)**



* (p=<0.0001)

Prior to FIS, most students expressed positive attitudes towards eating vegetables and fruit (as shown in Figure 6). By the end of 2006, students' views about eating vegetables and fruit had become slightly more positive. This shift was not significant.

Figure 6 **How much do you like eating vegetables and fruit? (N=591)**



Students were also very enthusiastic about the fruit they were given to eat at school, with most (81 percent) indicating they liked this "a lot", as shown in Table 9.

Table 9 **How much do you like getting fruit to eat at school?**

		Year 4 students End of 2006 (N=591)		
A lot	**A bit**	**Middle**	**Not much**	**Not much at all**
%	**%**	**%**	**%**	**%**
81	9	4	1	2

To explore students' levels of knowledge about healthy eating, we asked them to complete a question which gave them nine opportunities to select the healthiest food option from two choices. Prior to FIS, students had a relatively good knowledge of healthy options, but by the end of 2006, there had been a significant increase in this knowledge, with the average score rising from 6.8 *(6.6,7.0)* to 7.4 *(7.2,7.6)* out of a total possible score of 9.[26]

We also asked students how many pieces of vegetables and fruit they should eat at day. Prior to FIS, although most (57 percent) were aware that they should be eating five or more portions, only 38 percent selected five as the correct answer, suggesting that many were not aware of the 5+ a

[26] Knowledge about healthy food options (N=591; p=<0.0001).

day message (or alternatively, its meaning).[27] At the end of 2006, significantly more (77 percent) were aware that they should eat five or more portions,[28] and more (57 percent) selected five, indicating that their awareness of the 5+ a day message had increased.

Students' healthy eating behaviours

The student survey asked students to write or draw all the food they had eaten the day before the survey. These foods were then grouped into categories. Table 10 shows students' average reported consumption of key foods at the start and end of 2006.[29]

Table 10 **Students' average consumption of key food types**

	Year 4 students (N=591)			
	Start of 2006		End of 2006	
Key food type	%	Mean number of times eaten* *(confidence interval)*	%	Mean number of times eaten* *(confidence interval)*
Vegetables and fruit/***	**66**	**2.24** ***(2.09,2.39)***	**74**	**2.54** ***(2.37,2.71)***
Fruit only**	**58**	1.98 *(1.83,2.13)*	**66**	2.07 *(1.93,2.21)*
Vegetables only**	**23**	1.55 *(1.42,1.68)*	**30**	1.70 *(1.56,1.84)*
Chips and chippies	58	1.55 *(1.47,1.63)*	58	1.59 *(1.50,1.68)*
Fizzy drinks	34	1.59 *(1.46,1.72)*	38	1.52 *(1.41,1.63)*
Sweets and treats	19	1.35 *(1.22,1.48)*	21	1.37 *(1.25,1.49)*
Takeaways	39	1.37 *(1.29,1.45)*	34	1.34 *(1.25,1.43)*

* The means in this table are reported from only those students who ate each particular type of food. The rationale underpinning this decision is discussed in the data analysis section in the introduction to this report.

** Indicates a significant difference between the start and end of 2006 (in **bold**) in the *number of students* who reported eating this food. Vegetables and fruit (p=0.0007); Fruit only (p=0.0004); Vegetables only (p=0.0008).

*** Indicates a significant difference between the start and end of 2006 (in **bold**) in the *mean number of times* this food was eaten. Vegetables and fruit (p=0.002).

[27] In the start of 2006 survey, a substantial proportion of students (22 percent) did not answer this question. Larger proportions answered the questions immediately before and after, suggesting that at least some of those who did not respond did so because they were not sure of the answer. A much smaller proportion (7 percent) did not respond to this question at the end of 2006.

[28] 5+ a day (p=0.0002).

[29] Although the questionnaire used to collect these data was validated for this age group as being comparable to observations, the lower literacy levels of students from low-decile schools suggest it is likely that the data are under-reported. Given this, the data should not be interpreted as a nutritional survey, but rather as an indicator of students' eating patterns.

At the end of 2006, the survey asked students what they ate at school at interval and lunch time. Since being part of FIS, many schools had started a separate fruit break or encouraged students to eat fruit during the day. This change in practice was not reflected in the student survey questions. Given this, it is likely that students' end of 2006 fruit intake is under-reported and the increase in intake noted below represents a change in lunch and home eating patterns. Adjustments will be made to the 2007 student survey to more fully capture this data.

Healthy eating behaviours: Vegetables and fruit

Table 10 shows that prior to FIS, 66 percent of students reported eating at least some vegetables or fruit in the day before the survey. By the end of 2006 this proportion had significantly increased to 74 percent. This increase is made up of two significant increases: an increase in the number reporting eating vegetables and an increase in the number reporting eating fruit.

Table 10 also shows that, at the start of 2006, those who were eating vegetables and fruit reported having an average of 2.24 pieces. By the end of 2006 this had significantly increased to 2.54 pieces. This increase consists of a rise in both fruit and vegetable intake. The increase in fruit intake can mostly be explained by the extra daily piece of fruit students accessed at school through FIS. But the data reported in Tables 11 and 12 below also show that some of this increase results from changes in home and school vegetable intake.

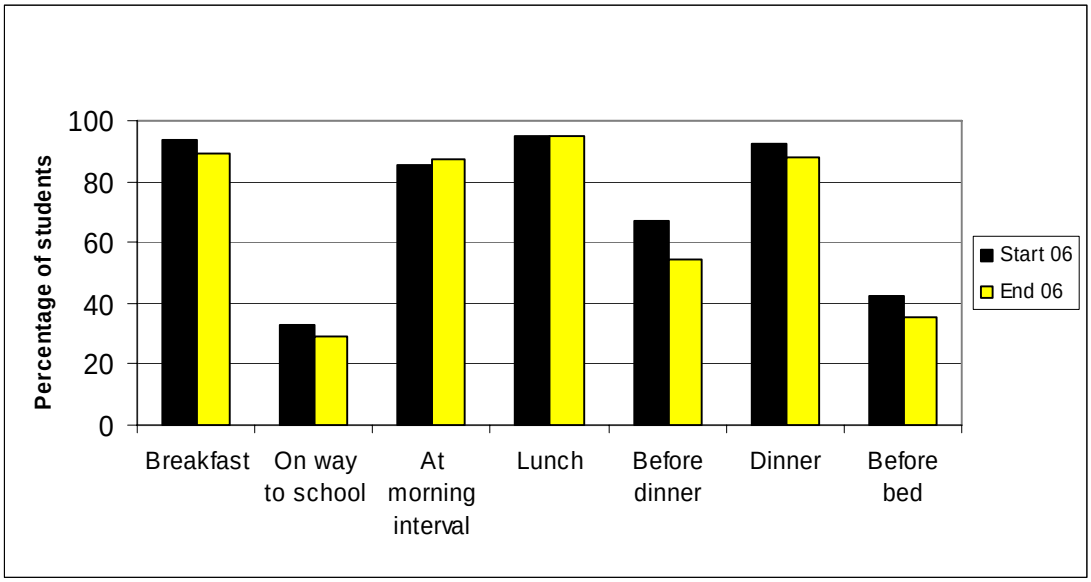
Healthy eating behaviours: Other key foods

Prior to FIS, a substantial proportion of students reported a high intake of unhealthy food options. Over half (58 percent) ate chips or chippies at least once during the day, and over one-third reported eating takeaways such as pies (39 percent) or drinking a fizzy drink (34 percent). The end of 2006 data show nonsignificant decreases in the amount of fizzy drinks and takeaways students consumed and nonsignificant increases in the consumption of chips and chippies and sweets and treats.

When did students eat?

Figure 7 shows that, at the start and end of 2006, most students ate breakfast, lunch, and dinner. At the end of 2006 there was a slight increase in the number reporting eating at interval and a significant decrease in the number reporting eating at breakfast, before dinner, at dinner time, or before bed. On the one hand, this could suggest that students, because they are getting more to eat at school, are less likely to snack on unhealthy food after school. On the other hand, this could also suggest that the fruit students are eating at school is replacing some of their meals at home. This is a concern given that one of the aims of FIS is to empower the parent/whänau community to engage in healthy eating practices, not for schools to take on this responsibility. In particular, the decrease in the number of students who reported they ate breakfast is a concern given that NZ and international literature shows an association between regular breakfast consumption and improved academic performance (Quigley, Taylor, & Scragg, 2007).

Figure 7 **Eating times* (N=591)**



* Breakfast (p=<0.0001); morning interval (p=0.02); before dinner (p=<0.0001); dinner time (p=0.0002); before bed (p=<0.0001).

Eating at school

At the start and end of 2006, the same proportion of students (95 percent) reported eating food at lunchtime at school. At the end of 2006, most students (58 percent) brought their lunch from home. A smaller proportion obtained their lunch at school (23 percent) or purchased their lunch from local shops (14 percent). This pattern was similar at the start of the year. The types of foods students ate at school are presented in Table 11. At the start of 2006, about one-third (37 percent) reported eating vegetables and fruit at school. By the end of 2006, this proportion had significantly increased to 62 percent, and the mean number of vegetables or fruit eaten had also significantly increased. Most of this increase was in fruit intake, but it also represented a small increase in the number of students who ate vegetables, and the amount of vegetables eaten. Both prior to FIS and at the end of 2006, students reported relatively low consumption of fizzy drinks, sweets and treats, and takeaways at school. This suggests that, prior to FIS, many schools already had policies about consumption of these foods. This is confirmed by the staff survey data which show that 80 percent of schools had guidelines about the food eaten at lunchtime or interval (see Table 19). An exception to this pattern was chips and chippies, with the number of students who reported eating these at school significantly increasing over 2006.

Table 11 **Students' average consumption of key food types at school**

Key food type	Year 4 students (N=591)			
	Start of 2006		End of 2006	
	%	Mean number of times eaten* *(confidence interval)*	%	Mean number of times eaten* *(confidence interval)*
Vegetables and fruit/***	**37**	**1.54 *(1.43,1.65)***	**62**	**1.75 *(1.64,1.86)***
Fruit only**	**36**	1.54 *(1.43,1.65)*	**60**	1.65 *(1.55,1.75)*
Vegetables only**	**1**	1.20 *(0.81,1.59)*	**5**	1.66 *(1.39,1.93)*
Chips and chippies**	**36**	1.25 *(1.19,1.31)*	**42**	1.30 *(1.23,1.37)*
Fizzy drinks	5	1.19 *(1.02,1.36)*	7	1.18 *(1.06,1.30)*
Sweets and treats	8	1.15 *(1.05,1.25)*	9	1.25 *(1.12,1.38)*
Takeaways	14	1.08 *(1.01,1.15)*	15	1.09 *(1.00,1.18)*

* The means in this table are reported from only those students who ate each particular type of food. The rationale underpinning this decision is discussed in the data analysis section in the introduction to this report.

** Indicates a significant increase between the start and end of 2006 (in **bold**) in the *number of students* who reported eating this food. Vegetables and fruit ($p=<10^{-6}$); Fruit only ($p=<10^{-6}$); Vegetables only (p=<0.0001); Chips and chippies (p=0.05).

*** Indicates a significant difference between the start and end of 2006 (in **bold**) in the *mean number of times* this food was eaten. Vegetables and fruit: (p=0.03).

Eating at home

The types of foods students reported eating at home are presented in Table 12. In general, the food eaten at home was different from that eaten at school. With the exception of vegetables and chips or chippies, home food tended to be less healthy than school food. For example, at the end of 2006, significantly fewer students (7 percent) reported drinking a fizzy drink at school, compared to those who reported the same at home (35 percent). At the end of 2006, significantly more students reported eating takeaways and sweets at home, and significantly less reported eating fruit. Both the home and the school data show an increase in the proportion of students reporting they ate some vegetables. The home data also show a significant increase in the number of students who reported eating vegetables at home, and a nonsignificant increase in the mean amount of vegetables and fruit eaten. Although small significant increases in the number of students having sweets and treats and fizzy drinks are also noted, these are balanced by small decreases in the mean number of times each food type was consumed. This information suggests that FIS may be encouraging students to eat more vegetables and fruit, but at this stage does not appear to be having a wider impact on their consumption of other food types.

Table 12 **Students' average consumption of key food types at home**

Key food type	Year 4 students (N=591)			
	Start of 2006		End of 2006	
	%	Mean number of times eaten* *(confidence interval)*	%	Mean number of times eaten* *(confidence interval)*
Vegetables and fruit	40	1.75 *(1.61,1.89)*	43	1.89 *(1.74,2.04)*
Fruit only	27	1.57 *(1.42,1.72)*	24	1.63 *(1.46,1.80)*
Vegetables only**	**19**	1.44 *(1.31,1.57)*	**28**	1.52 *(1.41,1.63)*
Chips and chippies**	**25**	1.23 *(1.15,1.31)*	**31**	1.22 *(1.15,1.29)*
Fizzy drinks**	**25**	1.48 *(1.36,1.60)*	**35**	1.38 *(1.29,1.47)*
Sweets and treats**	**11**	1.25 *(1.08,1.42)*	**15**	1.19 *(1.10,1.28)*
Takeaways	25	1.18 *(1.11,1.25)*	25	1.21 *(1.13,1.29)*

* The means in this table are reported from only those students who ate each particular type of food. The rationale underpinning this decision is discussed in the data analysis section in the introduction to this report.

** Indicates a significant increase between the start and end of 2006 (in **bold**) in the *number of students* who reported eating this food. Vegetables only (p=0.0005); Chips and chippies (p=0.04); Fizzy drinks (p=0.0001); Sweets and treats (p=0.03).

Summary of student healthy eating data

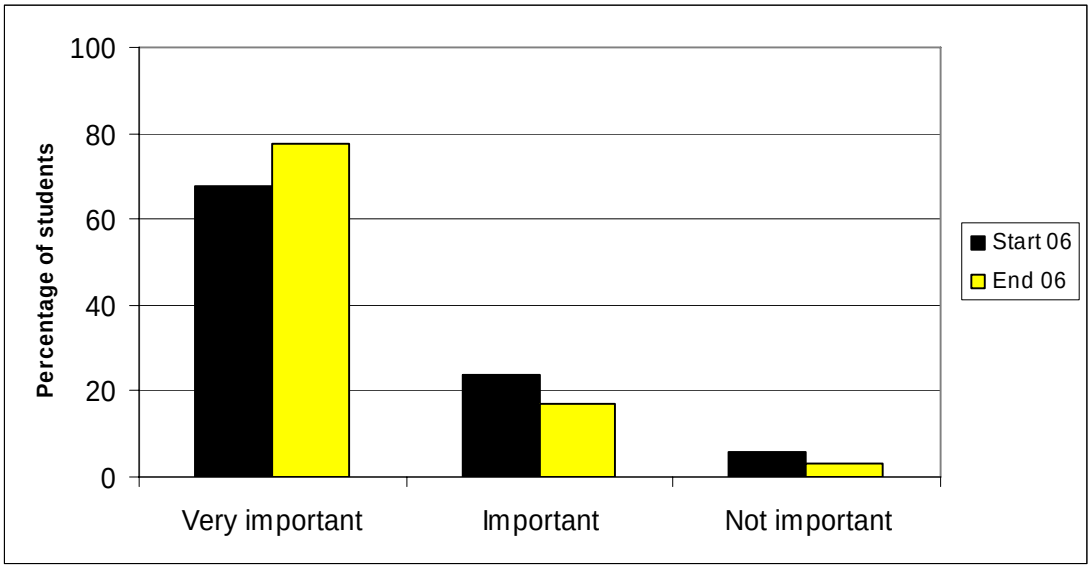
The data presented above show a similar pattern to the results from the 2002 NZ National Children's Nutrition Survey (Parnell et al., 2003). The authors reported that only about half of their sample ate the recommended three or more daily servings of vegetables or two or more daily servings of fruit. Although the intake of vegetables and fruit reported by students in this current study was below recommended levels, the increase in this intake both at school and at home, in combination with positive shifts in students' attitudes towards, and knowledge about, healthy eating behaviours, shows an encouraging trend which could represent the start of a shift in students' knowledge and practices surrounding healthy eating.

Physical activity

Students' physical activity knowledge and attitudes

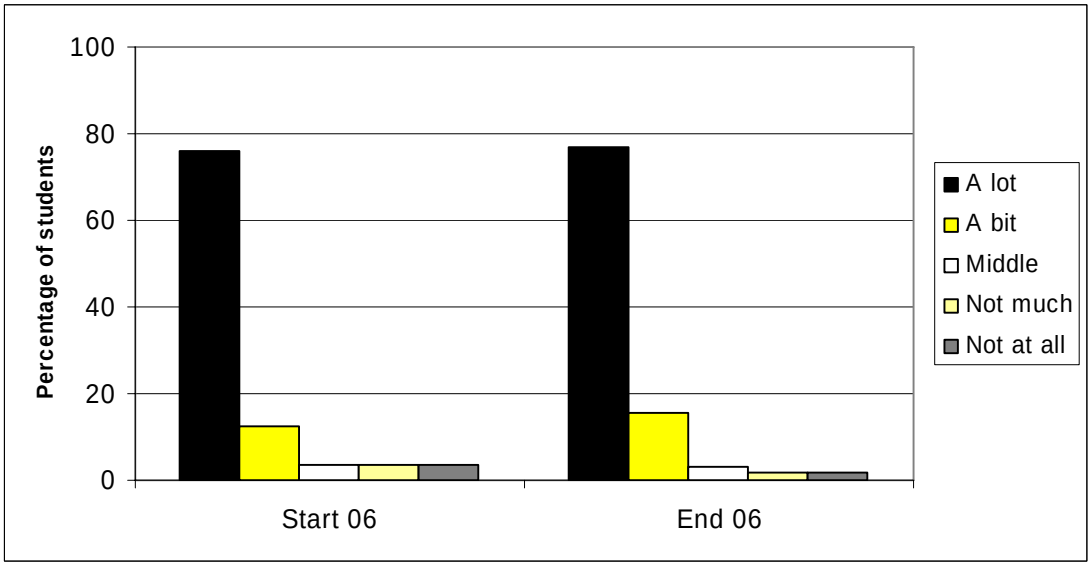
Prior to FIS, as shown in Figure 8, most students were already aware that it was "very important" for their health to exercise every day, and the majority noted they liked physical activity "a lot" (as shown in Figure 9). Although the baseline data were already very positive, at the end of 2006, significantly more students expressed positive views about physical activity.

Figure 8 **How important is it for me to exercise every day*? (N=591)**



* (p=0.03)

Figure 9 **How much do you like doing exercise*? (N=591)**



* (p=<0.0001)

Students' physical activity behaviours

The student survey included eight opportunities for students to indicate if they had engaged in mild to moderate physical activity in the day prior to the survey (such as walking, cycling, or skateboarding to or from school; doing active things in classtime or at lunchtime; or doing sport or kapa haka after school). Prior to FIS, students reported they did mild to moderate physical activity an average of 4.5 *(4.4,4.6)* times a day. At the end of 2006, this average had significantly

increased to 4.8 *(4.7,4.9)*.[30] This shift in physical activity occurred at both school and home. For example, more students reported they did active things in classtime, at morning tea or lunchtime, or after school.

At the start of 2006, we gave students three opportunities to indicate whether they had watched TV or played computer games during the day before the survey, and students reported engaging in these behaviours an average of 2.1 *(2.0,2.2)* times. At the end of 2006, this average had significantly decreased to 1.9 *(1.9,2.0)* times.[31]

Physical activity with family

As shown in Table 13, prior to FIS, over half of students reported they had engaged in some form of physical activity with their family during the week and in weekends (and in the weekend before the survey). At the end of 2006, significantly more students indicated they had engaged in physical activity with their family at the weekend and during the week.

Table 13 **Home physical activity behaviours**

	Year 4 students (N=591*)			
	Start of 2006		End of 2006	
At home do you do exercise or active things with your family:	**Yes %**	**No %**	**Yes %**	**No %**
At the weekend?**	**65**	**14**	**82**	**12**
Last weekend?	60	22	74	23
During the week?**	**56**	**22**	**73**	**19**

* Nonresponses to these questions were high at the start of 2006 (18–23%). A nonresponse category is not included in this table.

** Indicates items which show a significant difference between the start and end of 2006 (in **bold**). At the weekend (p=0.03); during the week (p=0.006).

Summary of student physical activity data

Prior to FIS most students already held positive perceptions of physical activity and most were engaging in some form of daily physical activity. Given this positive starting point, it is interesting that the findings around physical activity still show significant shifts in students' knowledge, attitudes, and physical activity behaviours. These shifts were located in both the school and the home environment. While the shifts in school behaviours parallel those described by teachers, it is unclear what some of the changes in home behaviours can be attributed to. It is likely that these could be caused by a number of factors. In case study interviews, students described how, as a result of their school focus on healthy choices, they were attempting to engage in more physical activity at home, or watch less TV. Some also talked about

[30] Physical activity (N=591; p=<0.0001).

[31] TV/computer games (N=591; p=0.002).

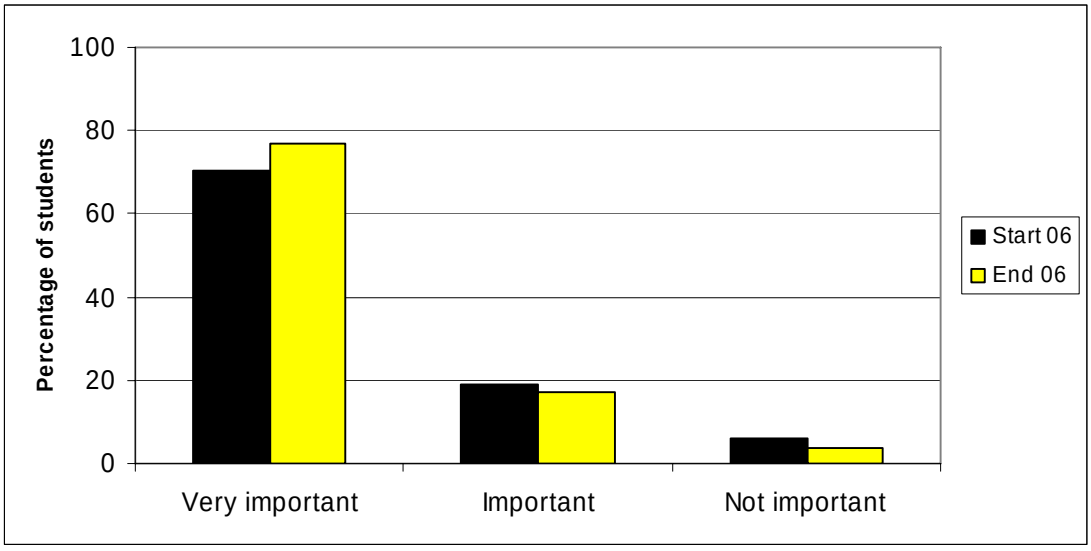
parents/whänau being part of school physical activity events that modelled activities that could be done at home. It is also likely that other initiatives such as the SPARC Push Play campaign, and an increase in the number of healthy lifestyle TV programmes, could have contributed to these changes in home practices.

Sunsmart

Students' sunsmart knowledge and attitudes

Prior to FIS, most students (71 percent) thought it was "very important" for their health to be protected from the sun (as shown in Figure 10). At the end of 2006, significantly more students thought the same.

Figure 10 **How important is it for me to wear a sunhat, sunscreen, and clothes in the sun*? (N=591)**



* (p=0.0005)

To ascertain students' level of knowledge about sunsmart practices we asked three questions about which type of hat, sunscreen or lotion, and shirt provided the most protection from the sun.

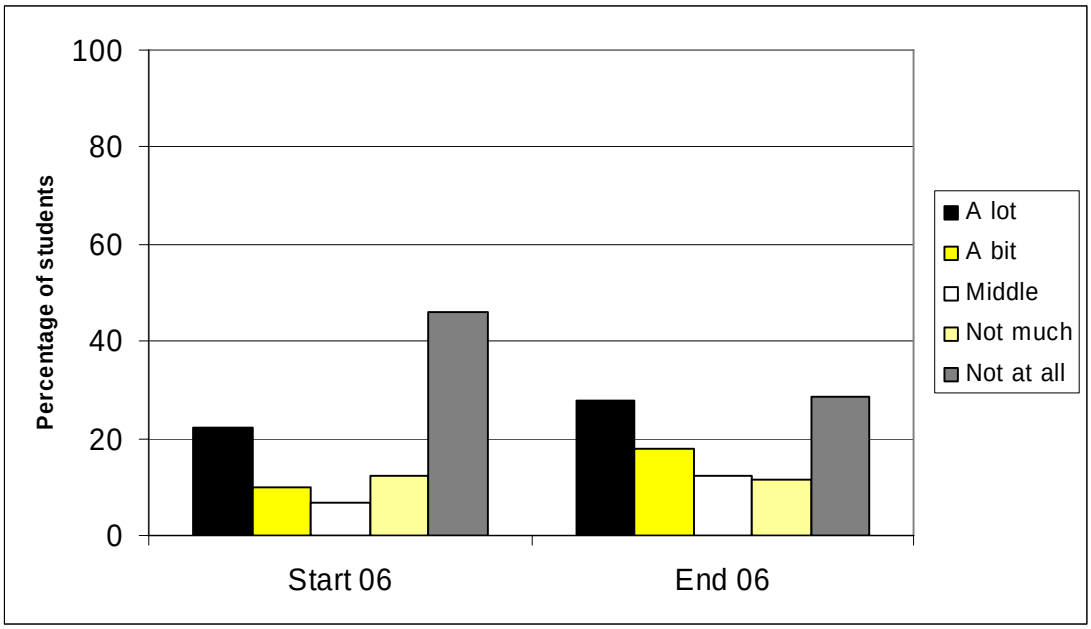
Prior to FIS, students' average score on these three questions was 1.8 *(1.7,1.9)*. At the end of 2006, this average had significantly increased to 2.0 *(1.9,2.0)*,[32] indicating a small increase in sunsmart knowledge. In particular, students' awareness of exactly which type of hat and sunscreen provided the most protection from the sun had increased.

Although students considered it very important to be protected from the sun, their responses to the other sunsmart questions show that their attitudes and behaviours were not always consistent with

[32] Sunsmart knowledge (N=591; p=0.005).

this belief. As shown in Figure 11, whilst some students reported they did not like sunbathing, others noted they liked it "a lot".

Figure 11 **How much do you like sunbathing*? (N=591)**



* A significant negative shift between the start and end of 2006 was noted for this question (p=0.0009). This may be because the wording was changed from "How much do you like getting a suntan?" to "How much do you like sunbathing?"

Students' sunsmart behaviours

Although the data above show that many students were aware of sunsmart practices, smaller proportions reported engaging in sun protection behaviours in summer, either at the start or end of 2006. In terms of at-school behaviour, as shown in Table 14, approximately one-third of students reported they wore a sunhat or protective clothes in the sun "most of the time" in summer.

Table 14 **Students' sunsmart practices at school**

When you are outside in summer at school do you:	Year 4 students (N=591*)			
	Start of 2006		End of 2006	
	Most of the time %	Sometimes/ Hardly ever %	Most of the time %	Sometimes/ Hardly ever %
Wear clothes that protect you from the sun?	39	54	37	58
Wear a sunhat?	38	53	33	63
Wear sunscreen?	23	70	25	70
Stay out of the sun in the middle of the day?	23	71	21	74
Get sunburnt?	13	80	11	84

* Nonresponses to these questions varied between 4–8%. A nonresponse category is not included in this table.

Although the other survey and interview data we collected suggested that a number of schools had increased their focus on sunsmart practices, and these practices were starting to have an impact on students, no clear pattern of change over time emerges from these data.

Sunsmart behaviours at home

Table 15 shows students' home sunsmart behaviours. Like school behaviours, these stayed relatively similar over 2006. Prior to FIS, significantly more students reported wearing a sunhat "most of the time" at school, and significantly more reported wearing sunscreen at home.[33] At the end of 2006, there were fewer significant differences between home and school practices, although students were still significantly more likely to report wearing a sunhat "most of the time" at school.[34]

Table 15 **Students' sunsmart practices at home**

When you are outside in summer at home do you:	Year 4 students (N=591*)			
	Start of 2006		End of 2006	
	Most of the time %	Sometimes/ Hardly ever %	Most of the time %	Sometimes/ Hardly ever %
Wear clothes that protect you from the sun?	32	57	37	54
Wear a sunhat?	25	64	22	70
Wear sunscreen?	28	63	29	64
Stay out of the sun in the middle of the day?	21	70	25	69
Get sunburnt?	15	75	12	81

* Nonresponses to these questions varied between 6–12%. A nonresponse category is not included in this table.

Parents/whänau (and teachers) are important models of sunsmart behaviours. For this reason we asked students about the sunsmart behaviours of their parents/whänau, as shown in Table 16. In general, around one-third of students reported family members engaged in protective behaviours "most of the time". Between the start and end of 2006, family/whänau sunsmart behaviours stayed relatively similar. Overall, the protective behaviours students reported that they and family/ whänau members engaged in, were similar.

[33] Sunhat (p=<0.0001); sunscreen (p=<0.0001).

[34] Sunhat (p=<0.0001).

Table 16 **Family/whänau sunsmart practices**

When they are outside in summer do the people in your family:	Year 4 students (N=591*)			
	Start of 2006		End of 2006	
	Most of the time %	Sometimes/ Hardly ever %	Most of the time %	Sometimes/ Hardly ever %
Wear clothes that protect them from the sun?	36	42	46	49
Wear sunhats?	29	52	33	62
Wear sunscreen?	25	54	35	60

* Nonresponses to these questions were high at the start of 2006 (19–21%). A nonresponse category is not included in this table.

Summary of student sunsmart data

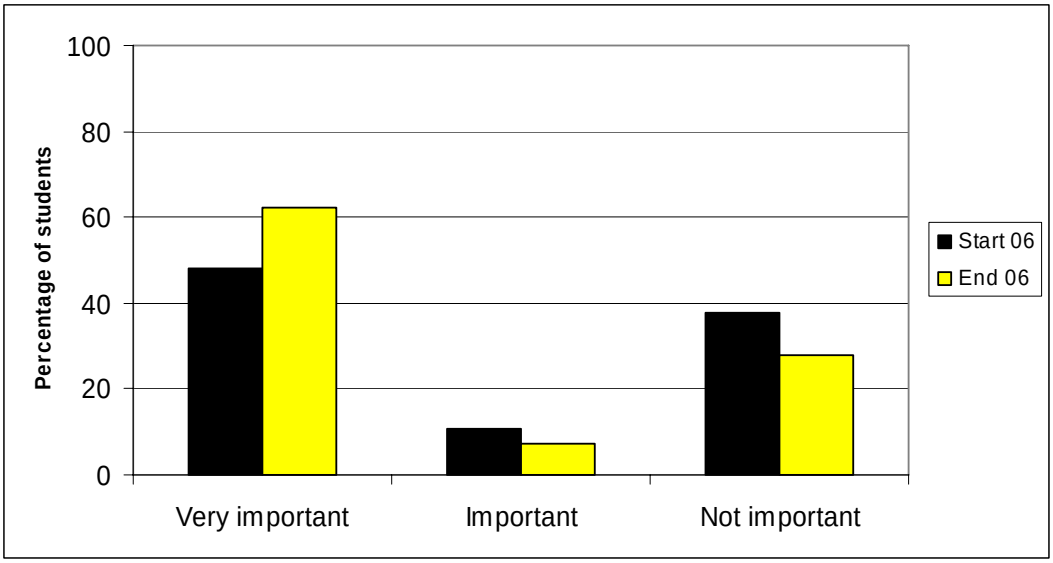
The data show positive changes in students' knowledge of sunsmart behaviours, but little change in their actual sunsmart behaviours, either at school or home. After healthy eating and physical activity, sunsmart was often a priority, and many schools noted they had increased their focus on this area. Similarly, students in the case study focus groups also described changes in school practice and their behaviours. There are a number of possible reasons why the reported behaviour changes are not evident in the student data. One is that too short a time frame has elapsed for these to have become embedded in students' behaviours. Another could be that, although schools tend to enforce sunsmart policies in Term 1 and Term 4 (which matches the timing of the surveys), the difference in weather at the start and end of 2006 impacted on students' responses. For example, one teacher wrote a note on the student surveys indicating that, at the end of 2006, their school had not been enforcing their sunhat policies as it had been too wet for this to be necessary.

Smokefree

Students' smokefree knowledge and attitudes

Figure 12 shows that, prior to FIS, almost half of students (48 percent) thought it was "very important" for their health that people did not smoke around them. At the end of 2006, students' awareness of the impact of passive smoking had increased, with significantly more (62 percent) noting that this was "very important". But, compared to the other three health areas, in general students appeared to be less knowledgeable about the impact of smoking. A substantial group, prior to FIS (38 percent) and at the end of 2006 (28 percent), appeared to be unaware of the impact of passive smoking.

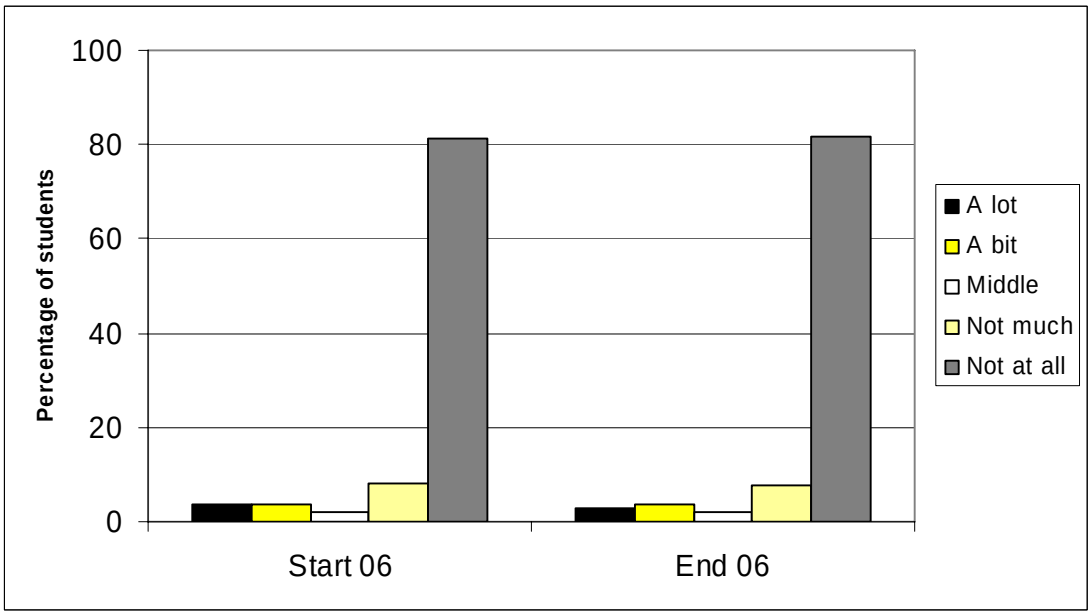
Figure 12 **How important is that people around me do not smoke*? (N=591)**



* (p=<0.0001)

As shown in Figure 13, students had positive attitudes towards nonsmoking with most (at the start and end of 2006) reporting they did not like it when people smoked around them.

Figure 13 **How much do you like it when people around you smoke? (N=591)**



Students' smokefree behaviours

Prior to FIS, 10.8 percent of students reported they had tried smoking, and 4.7 percent reported they smoked more than one cigarette a week. At the end of 2006, the proportion of students who reported they had tried smoking had increased to 11.5 percent, but there was a small but

significant decrease in the proportion who reported they smoked more than one cigarette a week (4.1 percent).[35] The data from the full dataset show a similar pattern.[36]

Parents/whänau are important models of smokefree behaviours. Accordingly, we asked students about the smoking habits of their family. As shown in Table 17, at the start and end of 2006 most students indicated they were living with people who smoked. Most students reported their family members smoked outside, rather than inside, the house.

Table 17 **Do any of the people you live with smoke?**

	Year 4 students (N=591*)	
	Start of 2006 %	End of 2006 %
No	22	30
Yes—outside the house	41	49
Yes—inside the house	18	18
Total proportion of students living with a smoker**	73	69

* Nonresponses to this question were high at the start of 2006 (18%). A nonresponse category is not included in this table.

** This figure is calculated from only those who responded to the question.

Summary of student smokefree data

Although some positive changes in students' awareness of healthy choices in regard to smoking, and smoking behaviours, were evident, the survey and case study data suggest that these changes are not solely attributable to shifts in school practice that result from FIS. Table 8 shows that, in 2006, 50 percent of students considered they learnt "nothing" at school about the importance of not smoking. In the case study schools, most students attributed their attitudes towards nonsmoking to stem from both school and home factors including: Life Education bus visits to school; TV health campaigns; and messages from family/whänau and teachers. In contrast, in regard to the other three health areas, students tended to attribute more of their recent behaviour changes to school initiatives connected to FIS (and also in some cases, prior school initiatives, such as an ongoing focus on sunsmart practices or physical activity).

Students' wellbeing

Given the link between connectedness to school, and young peoples' health and wellbeing (Libbey, 2004; Resnick et al., 1997), we added a question in the end of 2006 survey about how

[35] (p=0.0001).

[36] At the start of 2006, of the 854 students in the full dataset, 11.0 percent had tried smoking and 5.3 percent reported smoking more than one cigarette a week. At the end of 2006, of the 982 students in the full dataset, 12.0 percent reported they had tried smoking and 4.8 percent reported smoking more than one cigarette a week.

much students liked being at school. As shown in Table 18, the majority of students (69 percent) reported they liked school "a lot". Significantly more girls were positive about school than boys.[37] Students who identified as Pasifika tended to express more positive attitudes than their Mäori or NZ European peers, but this difference was not significant.

Table 18 **How much do you like being at school?**

		Year 4 students End of 2006 (N=591)		
A lot	**A bit**	**Middle**	**Not much**	**Not much at all**
				
%	**%**	**%**	**%**	**%**
69	15	5	3	5

We compared students' responses to this question to key items in the survey about the four health areas. There were a number of statistically significant differences between the two groups of students. Further details are provided in Appendix K. Those students who were less positive about school:

- had lower awareness about the importance for their health of daily exercise, daily eating of vegetables and fruit, and avoidance of passive smoking[38]
- were less likely to like exercising or eating vegetables[39]
- reported doing less mild to moderate physical activity on the day before the survey[40]
- were less likely to report wearing sunhats at school or at home[41]
- were more likely to report having tried smoking.[42]

These findings align with research that suggests a sense of disconnection to school is associated with poorer student health and wellbeing outcomes.

[37] (p=0.005).
[38] Importance of: exercise (p=0.02); eating vegetables and fruit (p=0.004); avoiding passive smoking (p=0.04).
[39] Attitude towards: exercise (p=0.008); vegetables (p=<0.0001).
[40] Physical activity (p=0.009).
[41] Sunhats at school (p=0.02); sunhat at home (p=0.03).
[42] Tried smoking (p=0.04).

Differences in the student data by subgroups

Key findings by student gender

The data showed few differences by gender, and those differences that were observed mostly favoured girls. In some cases the differences between girls and boys diminished over the course of 2006, and in other cases, these differences increased. Further details are provided in Appendix K.

Overall, at both the start and end of 2006, girls reported eating significantly more vegetables and fruit than boys.[43] Prior to FIS, girls reported eating significantly more fruit than boys.[44] At the end of 2006, a difference remained, but it was not statistically significant. Prior to FIS, significantly more girls reported that they liked eating vegetables.[45] At the end of 2006, girls ate significantly more vegetables than boys and significantly more liked eating fruit and considered eating vegetables and fruit to be important for their health.[46] At the end of 2006, girls were more likely than boys to report eating food four of the seven times they were asked. Girls also got significantly higher scores than boys on the question about healthy food options.[47]

There were very few differences in girls' and boys' attitudes or behaviours in regard to physical activity. Prior to FIS, significantly more boys than girls reported not liking exercise, but significantly more boys also reported engaging in physical activity the day before.[48] At both the start and end of 2006, boys reported watching TV or played more computer games significantly more times than girls.[49]

Prior to FIS, significantly more boys noted they had tried smoking or smoked more than one cigarette a week.[50] At the end of 2006, a difference remained, but it was not statistically significant. Overall, girls had stronger views on passive smoking. Prior to FIS, significantly more thought it was "very important" that people did not smoke around them, and at the start and end of 2006, significantly more reported not liking it when people smoked around them.[51]

There were some small differences in sunsmart practices by gender. At the start and end of 2006, there was a pattern for more girls to report they engaged in most of the listed sunsmart practices "most of the time".

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[43] Eating vegetables and fruit (start 2006 p=0.0002; end 2006 p=<0.0001).
[44] Eating fruit (p=0.009).
[45] Attitude towards vegetables (p=0.03).
[46] Eating vegetables (p=0.04); attitude towards fruit (p=0.006); importance of vegetables and fruit (p=0.04).
[47] Knowledge about healthy food options (p=<0.0001).
[48] Attitude towards exercise (p=0.004); physical activity (p=0.03).
[49] TV/computer games (start 2006 p=<0.0001; end 2006 p=0.007).
[50] Tried smoking (p=0.04); weekly smoking (p=0.004).
[51] Avoiding passive smoking (p=0.0006); dislike passive smoking (start 2006 p=0.03; end 2006 p=0.04).

Key findings by student ethnicity

We compared the student data to ascertain if there were any significant differences between the three main groups of students who are part of FIS: Mäori, Pasifika, and NZ European. For example, all those who identify as Mäori are compared against all those who do not. We used self-identification as the basis for this analysis. Many students in this study identified as more than one ethnicity, which resulted in some students being placed in more than one group for the purposes of analysis. The rationale for this decision is discussed in the data analysis section of this report.

In general, there were very few significant differences by ethnicity. At the start of 2006, the data from students who identified as NZ European tended to show different patterns across the four health areas compared to the data from other students. By the end of 2006, some of the more pronounced differences had diminished, and the different groups had become more similar to each other. The main differences between groups are described below. Further details are provided in Appendix K.

- At the start and end of 2006, significantly fewer of the students who identified as Mäori reported getting sunburnt at school.[52] They also placed significantly less importance on staying protected from the sun.[53] Prior to FIS, significantly more of these students reported they smoked more than one cigarette a week.[54] At the end of 2006, a difference remained, but it was not statistically significant. Conversely, at the end of 2006, significantly more students in this group reported they had tried smoking.[55] Prior to FIS, students who identified as Mäori reported watching TV or playing computer games significantly more than other students.[56] At the end of 2006, any differences were not statistically significant. At the end of 2006, students who identified as Mäori got significantly lower scores than other students on the healthy eating knowledge questions.[57]
- At the end of 2006, compared to their peers, students who identified as Pasifika got significantly higher scores on the healthy eating knowledge questions.[58] Prior to FIS, these students had significantly more positive attitudes towards eating vegetables and exercise than other students, and reported doing significantly more mild to moderate physical activity in the day before the survey.[59] At the end of 2006 these differences were no longer significant as other students' attitudes and behaviours became similarly positive. Students who identified as Pasifika had slightly different sunsmart views and behaviours than other students—but no clear pattern was evident. Significantly more students who identified as Pasifika ate food on

[52] Sunburnt at school (start 2006 p=0.004; end 2006 p=0.02).
[53] Importance of sun protection (end 2006 p=0.01).
[54] Weekly smoking (p=0.02).
[55] Tried smoking (p=0.008).
[56] TV/computer games (p=0.008).
[57] Knowledge about healthy food options (p=0.0004).
[58] Knowledge about healthy food options (p=0.0005).
[59] Attitude towards: vegetables (p=0.004); exercise (p=0.0001); physical activity (p=<0.0001).

the way to school, whereas significantly more of those who identified as Mäori or NZ European ate dinner.[60]

- Prior to FIS, and at the end of 2006, students who identified as NZ European had significantly less positive attitudes to eating vegetables and exercise.[61] Prior to FIS, the data from the full dataset showed that slightly more NZ European students reported they had tried smoking or smoked once a week. By the end of 2006, the proportion of students who reported they smoked more than one cigarette a week had slightly decreased. Overall, students who identified as NZ European were more likely to report engaging in sun protection behaviours, both at school and at home.

Key findings by FIS region

The student dataset was also analysed for regional variations. For each data collection round a summary of this data is sent to the FISC in that region and the Ministry of Health. Prior to FIS, the regional data showed more variation than the ethnicity data, with each region having a different profile. Like the data on ethnicity, the regional data showed a convergence over 2006, with students in different regions becoming more positive, and more like each other.

Summary of student subgroup data

Over 2006, a convergence of the ethnicity data is noted as students with less positive attitudes or lower levels of knowledge started to become more like their peers, thus suggesting that the schools' focus on the four health priority areas was altering students' attitudes, knowledge, and behaviours towards relatively uniform outcomes. A relative lack of difference by ethnicity could suggest that at this age, students' socioeconomic status (as measured by school decile) is potentially a more powerful predictor of health-related behaviours than their ethnicity. Comparisons with students from high-decile schools would be needed to test this idea.

What factors were most associated with changes to student behaviour?

We used a multilevel modelling process to explore which, if any, student or school factors were associated with the two key shifts in the student data, that is, increases in: students' intake of vegetables and fruit; and the number of times students engaged in mild to moderate physical activity. A more detailed description of the modelling process is located in the data analysis section of this report, and technical information alongside the models is presented in Appendix J.

We compared students' actual changes in behaviour with the change predicted by the models: the difference is known as the "residual" as it is the leftover or unexplained variability in the data (that is, the model could not predict it). Figure 14 shows the residuals for the intake of fruit and

[60] Ate on way to school (p=0.01); ate dinner (Mäori p=0.0005; NZ European p=0.004).

[61] Attitude towards: vegetables (start 2006 p=0.008; end 2006 p=0.006); exercise (start 2006 p=0.002; end 2006 p=0.02).

vegetables model. A plot like this is sometimes called a caterpillar plot. These residual plots in multilevel models are used to identify schools (classes, or regions, etc.) doing better or worse than anticipated.[62] If the students in all the schools all did exactly as expected (i.e., as predicted by the model, given information about gender, ethnicity, decile, school size, and so on), then all the residuals would be zero, so the horizontal line where the school residual is 0 is important, as it allows us to identify schools where students did better or worse than expected. The triangles show the mean residuals for each of the 32 schools, arranged from lowest to highest. The schools with triangles below the 0 line did worse than expected and those above did better than expected. The bars above and below each triangle show the confidence interval for the mean residual for each school. The students at any schools with an upper bar below the zero line did, on average, significantly worse (there were none). Students at any schools with a lower bar above the 0 line did, on average, significantly better (again, there were none). In this study, students in all the schools were achieving more or less as expected. This is consistent with school-level variability accounting for about 14 percent of the variability in the data (so individual student-level variability accounted for about 86 percent). Why are some of the bars very wide, and others very narrow? This is because of differing variability within the schools. Typically, schools with wide confidence intervals have only a few students, although in this instance it may be some of the very small schools that have very narrow intervals, particularly if all the students in the school gave very similar answers.

Figure 14 **School healthy eating residuals (School N=32)**

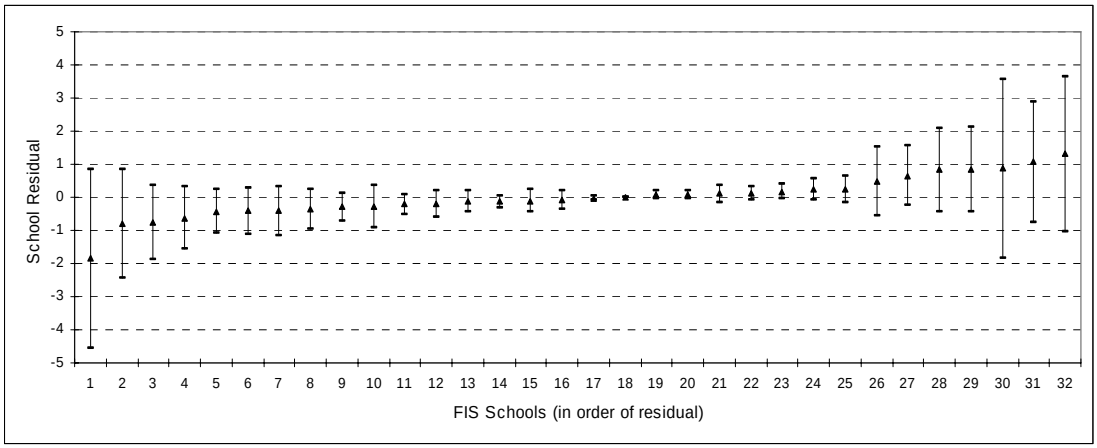
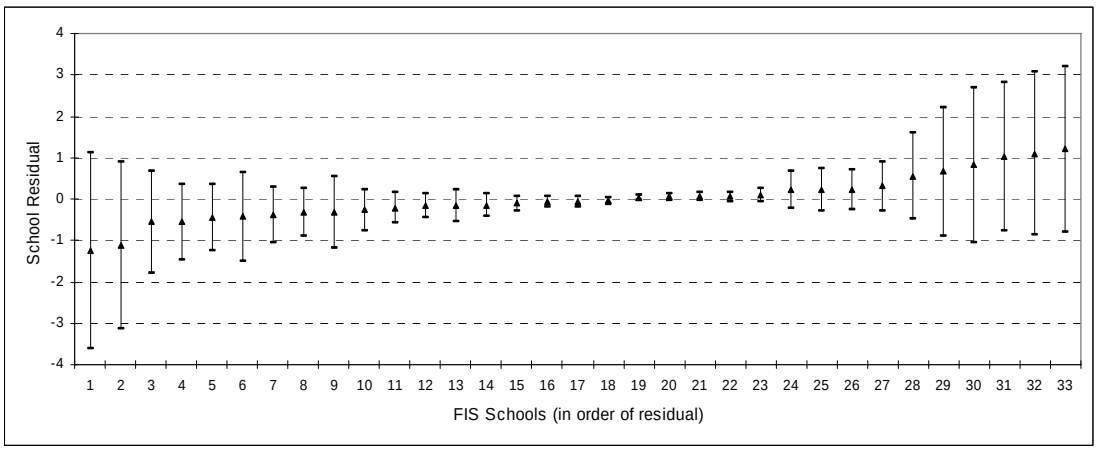


Figure 15 shows the residuals for physical activity across schools. The physical activity graph shows more variation between schools, but again, there were no schools showing significantly greater or smaller than expected changes.

[62] There are other diagnostic plots used to check model assumptions such as normality or homoscedasticity.

Figure 15 **School physical activity residuals (School N=33)**



Which factors contributed to the 14 percent of the variability that was at school level? The models indicated that it was not school decile, type, nor size, but rather factors related to school culture and management, teaching practices, and access to PD and support. This suggests that the ethos of the school students attended had the most influence on their behaviours. This analysis also supports the view that, through FIS, all types of students were being encouraged to engage in healthy practices.

Healthy eating model

In general, increases in students' intake of vegetables and fruit were associated with different factors for the different staff groups in the surveys. Increases in students' intake were associated with a view by lead teachers and principals that FIS had increased staff access to PD about health and wellbeing, thus indicating the importance of this access to support change. These two groups of staff are those who are mostly likely to have access to PD. This association was not evident for Year 4 teachers.

Increases in students' intake were shown in: schools in which lead teachers and Year 4 teachers reported staff showed strong support for FIS or had become more involved in school health and wellbeing initiatives; and in schools in which lead teachers considered parents/whänau showed strong support for FIS. Increases in students' intake were also shown in schools in which principals reported FIS had prompted changes in the awareness and involvement of school managers in school health and wellbeing initiatives, and the development of related policies and guidelines. Increases in students' intake were also related to a minor change, as reported by Year 4 teachers, in the integration of health and wellbeing goals into the curriculum. The teachers of students who had increased their intake tended to be newer to the school or in less senior positions. These teachers are likely to be more recent recruits to the teaching profession, and therefore may be more familiar with the student-centred practices advocated by the HPS process.

The number of external initiatives or projects, such as PD initiatives, in which a school was involved also influenced the amount of change. Students at schools which were involved in more initiatives tended to show a smaller increase in intake. This is likely to result from a number of competing priorities on staff's time.

Overall, this model suggests that students' intake of vegetables and fruit is greater in schools which have prioritised FIS. In these schools, school managers are strongly committed to FIS, they have gained the support of staff and parents/whänau, staff have adequate access to PD, and changes to teaching practice and school policies have supported FIS goals to be woven into the fabric of the school.

Physical activity model

The physical activity model was similar to the healthy eating model except that more similarity between staff groups was shown. For all groups, increases in the number of times students engaged in mild–moderate physical activity during the day were associated with a view that FIS had increased staff access to PD. In particular, effective communications with FISC and other agency partners were associated with increases in physical activity. Increases in physical activity were also shown in schools in which staff showed strong support for FIS and were increasing their involvement in school health and wellbeing initiatives; and in schools in which being part of FIS had encouraged the integration of health and wellbeing goals into the curriculum, as well as changes to school policies and guidelines.

Again, this model suggests that increases in students' physical activity are greater in schools which have prioritised FIS. In these schools, FIS had strengthened the schools' focus on health and wellbeing and supported an increase in staff's access to PD and health professionals to support school initiatives. As a result, staff had made changes to teaching practice and school policies and practices to support FIS.

The school staff surveys

This section of the report summarises the data from the school staff surveys. Most of the information reported in this section comes from the start and end of 2006 surveys of Phase 2 school staff. The numerical data presented in this section should be interpreted with care, given than in some cases, the number of staff responding to a particular survey is small (around 30).

Policies and initiatives in the four health areas prior to FIS

In order to collect baseline data that would assist us to ascertain the impact of FIS on schools' policies and initiatives, we asked Phases 1 and 2 lead teachers about the policies, procedures, and guidelines that were in place at their school prior to FIS. To get an idea of how "living" or enacted

these documents were, we asked if they were "practised"[63] or "optional". A selected subset of this information is shown in Table 19, and is reported in the text below.[64] The information collected from Phases 1 and 2 schools showed a similar pattern, and therefore has been combined.[65]

Overall, this information shows that, prior to FIS, most schools had some enacted policies, procedures, or guidelines in place in each of the priority health areas. For some of the health areas, or aspects of an area, a larger number of schools had policies or guidelines. For example, reflecting legal requirements around smokefree workplaces, nearly all schools reported they had an enacted smokefree policy. About half reported they had enacted policies or guidelines for the other three health areas. Schools varied as to how many areas were covered by enacted whole-school policies: 18 percent had policies in all four health areas, 37 percent in three, and 42 percent in one or two areas.

In terms of connections between school-wide policies and curriculum activities, those in the physical activity area showed the strongest links. Two-thirds of schools reported they had enacted guidelines that linked physical activity policies with curriculum activities. This is likely to reflect the emphasis placed on physical activity in the Health and PE curriculum, and NAG[66] requirements around physical activity.

In the other three health areas, around one-third of schools had taken steps to explicitly link whole-school policies or guidelines with curriculum activities. In the remaining schools, about one-third had optional guidelines that made reference to the curriculum, and about one-third did not have explicit curriculum connections in school-wide policies or guidelines.

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[63] In the text the term "enacted" is used to refer to policies/guidelines that schools reported were "practised", that is, they were a standard, rather than optional, part of school practice.

[64] These questions were included in the baseline surveys but not the follow-up survey. It is intended that they will be repeated at a later stage.

[65] In a few cases, slightly more Phase 1 schools reported having enacted policies or guidelines in place. For example, slightly more Phase 1 schools had healthy food guidelines for interval, lunch, or breakfast food, a requirement that students wear sunhats in summer, or guidelines for ensuring school events are smokefree.

[66] National Administration Guidelines (NAGs) require schools to develop and implement teaching and learning programmes that give priority to regular quality physical activity.

Table 19 **Policies, procedures, or guidelines in place prior to FIS**

Policies, procedures, or guidelines for healthy eating	Lead teachers Prior to FIS (N=62*)		
	Practised policy or guidelines %	Optional guidelines %	No guidelines %
A healthy eating/nutrition policy or procedures	42	31	23
Healthy food guidelines for interval, lunch, or breakfast food	56	24	16
Healthy food guidelines for food on sale at school	50	19	21
Guidelines for linking school healthy food initiatives to curriculum activities	34	35	26
Healthy food guidelines for buying food or rewards for students	23	24	47
Healthy food guidelines for fundraising sales	13	31	50
Healthy food guidelines for school events	6	31	55
Policies, procedures, or guidelines for physical activity			
A policy or guidelines about physical activity	56	16	24
Guidelines about physical activity in Health and PE curriculum plans	71	16	11
Guidelines about the amount of physical activity students do each week	40	37	18
Policies, procedures, or guidelines for sunsmart			
A sun protection policy	56	16	23
A requirement that students wear sunhats in summer	53	26	19
Guidelines for linking sun protection initiatives to curriculum activities	29	32	35
A requirement that students wear sunscreen at lunchtime/school events in summer	18	50	31
Suggested times for outside activities and PE in summer	15	44	40
Policies, procedures, or guidelines for smokefree			
A smokefree policy	92	-	3
Guidelines for ensuring school events are smokefree	74	16	6
Guidelines for addressing student smoking	45	23	24
Guidelines for linking school smokefree initiatives to curriculum activities	39	32	24
Guidelines for avoiding tobacco-sponsored organisations/products	37	19	39

* Nonresponse rates varied between 1–10%. A nonresponse category is not included in this table.

The following information provides a summary of school policies and practices in the four health areas prior to FIS.

Healthy eating

Table 19 shows that, prior to FIS, just under half (42 percent) of schools had an enacted healthy eating policy or guidelines, and a further one-third had an optional policy. Around half of schools had guidelines for food eaten or purchased regularly at school during interval or lunchtime. Fewer schools had guidelines about food that was eaten at less frequent occasions, such as the food offered as student rewards or during school events. Most (84 percent) noted they made efforts to publicise their policies and guidelines around healthy eating.

Most schools (71 percent) had some type of involvement from agencies to assist them to develop healthy eating initiatives, but only 19 percent stated they had "a lot" of involvement. In terms of particular initiatives, one-fifth (21 percent) were registered for the School Food programme (from the National Heart Foundation).

Physical activity

Table 19 shows that, prior to FIS, almost three-quarters (71 percent) of schools had guidelines about physical activity in their Health and PE curriculum plans, and over half (56 percent) had an enacted whole-school policy or guidelines about physical activity. Over half (61 percent) made efforts to publicise this information.

All but two schools reported students had physical activity sessions in classtime, on average four times a week. Most schools also reported that they organised either "a lot" or "some" out-of-class time physical activities at lunchtime (92 percent) or out-of-school hours (73 percent).

Nearly all (92 percent) had some agency support to assist them in developing physical activity initiatives, but only 23 percent noted they had "a lot" of involvement. In terms of particular initiatives, 58 percent did Jump Rope for Heart (from the National Heart Foundation), and 53 percent had some involvement with Active Schools PD. A number noted they were involved in other SPARC, regional sports trust, community, or regional agency programmes.

Sunsmart

Table 19 shows that, prior to FIS, just over half of schools had enacted sun protection policies (56 percent) and a requirement that students wear sunhats in summer (53 percent). Most had school sunhats for students to use or purchase (73 percent), or sunscreen for students to use (68 percent). Fewer schools had enacted policies or guidelines about the wearing of sunscreen or the timing of outdoor activities. Most (74 percent) had made efforts to publicise school policies around sun protection.

Some schools (40 percent) had a long-term sun protection plan, and 34 percent were developing a plan. All schools noted they provided either "a lot" (61 percent) or "some" (39 percent) shade in school grounds, and 30 percent had undertaken a shade audit. Schools tended to report having less shade available at school events (31 percent "a lot"; 56 percent "some"; 10 percent "none").

Compared to the healthy eating and physical activity areas, fewer (37 percent) had involvement of agencies to support their initiatives. A small proportion (6 percent) had sunsmart accreditation, and some (23 percent) were working towards accreditation.

Smokefree

Prior to FIS, nearly all schools (92 percent) had an enacted smokefree policy and most (74 percent) were active about ensuring school events were smokefree. In over one-third (39 percent) of schools, students participated in smokefree events. About half (45 percent) had an enacted policy or guidelines for addressing student smoking. Nearly all (98 percent) made efforts to publicise school smokefree policies or guidelines.

Like the sunsmart area, fewer (35 percent) had involvement of agencies to support their initiatives. A few (5 percent) had a smokefree award from Health Sponsorship Council, and some (13 percent) were working towards this award.

Use of whole-school approaches to health and wellbeing

As the information above suggests, prior to FIS most schools had a variety of policies, guidelines, or strategies in place to address the four health priority areas. Some schools did this within the framework of a whole-school model. Prior to FIS, the majority of schools had some contact with the HPS model: about one-third (32 percent) were using HPS approaches, and a further one-third (35 percent) had an existing relationship with an HPS adviser. Most schools had started using the HPS model relatively recently with only a few (8 percent) noting they had used this approach for more than four years.

Prior to their involvement in FIS, most schools were also using other whole-school approaches to addressing health and wellbeing including:

- positive behaviour change approaches (e.g., Kia Kaha, Cool Schools, peer mediators) (45 percent)
- personal identity and self-worth approaches (e.g., Kiwi Can) (26 percent)
- environmental approaches (e.g., Enviroschools) (19 percent)
- Mäori frameworks (e.g., Te Aho Matua, Te Kete Tuauri/Te Kete Tuatea/Te Kete Aronui) (12 percent)
- other (e.g., spiritual health models) (9 percent).

In addition, some schools had school-wide approaches to hygiene (38 percent) or safety (41 percent).

Focus areas for 2006 and 2007

At the end of 2006 we asked school staff which of the health priority areas they had focused on during 2006, and what their priorities were for 2007. As shown in Table 20, in 2006 the most common focus areas were healthy eating and physical activity, the two areas most closely linked to the curriculum. These were the two areas in which the student data showed the most change. Both the staff and student data showed that smokefree was the area of least focus. Almost one-third (32 percent) of lead teachers noted that their school had focused on all four areas. Given the importance of emotional and social wellbeing in improving student outcomes, we also asked about this aspect of health and wellbeing. About half of the schools had a focus on this area.

Table 20 **Health focus for 2006 and 2007**

	Lead teachers End of 2006 (N=75)	
Area	**Focus in 2006* %**	**Plan for 2007 %**
Physical activity	93	81
Healthy eating	95	73
Sunsmart	67	69
Emotional and social wellbeing	55	49
Smokefree	40	47
Other areas	9	3
No areas	3	NA
Not sure/not decided	NA	11

* Year 4 teachers were also asked this question. Their responses were very similar to lead teachers.

We asked lead teachers why their school had selected their focus areas in 2006. Most gave a range of reasons, with the most common being: healthy eating was focused on due to the free fruit (67 percent); there were programmes or resources that staff could tap into (45 percent); staff were interested in this area (45 percent); and school data indicated a need (41 percent).

Focus areas for 2007

We also asked lead teachers about their plans for 2007. As shown in Table 20 above, the priorities for 2007 were very similar to 2006, with the most common focus areas being physical activity and healthy eating. As part of FIS, schools are expected to cover all four areas within a three-year time period. The slight decrease in schools planning to focus on healthy eating and physical activity indicates that some may be planning to focus on new areas. This was the case for some schools, but a closer look at the data shows schools were taking different approaches. Looking at the smokefree area, 23 percent were planning to consolidate their existing foci, 11 percent had changed focus, and 24 percent were planning to focus on this area in 2007. Almost half (42

percent) did not address smokefree in 2006, and did not have plans to look at this area in 2007. This raises concerns that this area may not be addressed within the three-year time frame of FIS.

Making decisions about health and wellbeing

Table 21 shows that, at most schools, the whole staff were involved in decision making about health and wellbeing. This level of staff involvement is likely to contribute to a shared sense of ownership over FIS-related initiatives. At about one-fifth of schools, students also had input. At Phase 2 schools, a more team-based approach was evident with a larger proportion of staff noting that decisions were made by a health or curriculum team.

Table 21 **Who makes the final decisions about health and wellbeing initiatives?**

	Lead teachers End of 2006 (N=75) %
The whole staff	72
School managers (principal (and assistant/deputy), board of trustees)	52
The Health and PE curriculum team	33
A Fruit in Schools/Health Promoting Schools lead teacher	33
A Health and PE lead teacher	23
Syndicate teams	23
Students (e.g., student health teams)	21
A health committee	19
Individual staff depending on their students' needs	15
Other	1

Changes to school practices as a result of FIS

At the end of 2006, we asked school staff whether, since being part of FIS, they had made any changes in practices connected to each of the four FIS health areas, and to describe the main changes they had made. As shown in Table 22, the most common were changes in school practices connected to the two main focus areas for 2006: healthy eating and physical activity. Only one lead teacher and one Year 4 teacher noted their school had made no changes at all.

Table 22 **Areas of change in 2006**

Health priority area	Year 4 teachers End of 2006 (N=38) %	Lead teachers End of 2006 (N=75) %
Healthy eating*	**79**	**95**
Physical activity	76	88
Sunsmart	45	65
Smokefree*	**10**	**39**
No areas	3	1

* Indicates items which show a significant difference between Year 4 and lead teachers (in **bold**).

Significantly more lead teachers than Year 4 teachers reported that their school had made changes, indicating that these changes might be at the whole-school level rather than in the classroom. To explore this idea further we used the HPS framework to categorise the changes described (as shown in Table 23).

Table 23 **To which aspects of the HPS framework were changes linked?**

Aspect of the HPS framework	Year 4 teachers End of 2006 (N=38) %	Lead teachers End of 2006 (N=75) %
School organisation and environment	89	89
Active student involvement in school organisation and environment	3	12
Curriculum, teaching, and learning	73	60
Active student involvement in curriculum, teaching, and learning	24	7
Community links and partnerships: Health and community agencies	14	64
Community links and partnerships: Parents/whänau	5	48
Active parent/whänau involvement in setting directions	-	11
No areas	3	1

Most of the changes staff described were located within "school organisation and environment". Currently, FIS seems to be effective in supporting change in this area, and in particular, in assisting schools to create a healthy eating and physically active culture. Congruent with their longer involvement in FIS, lead teachers from Phase 1 schools reported a larger number of changes, and/or more changes to whole-school policies and practices than Phase 2 teachers. This pattern was evident in three of the health areas: healthy eating, physical activity, and sunsmart. Most lead teachers, and a smaller proportion of Year 4 teachers, noted that their contact with interagency partners had increased. The area where both lead and Year 4 teachers were least likely to have made changes was making connections with parents/whänau. Again, reflecting their longer involvement in FIS, Phase 1 teachers tended to report changes in this area.

In the healthy eating area, many staff commented that their school had developed policies or procedures to address the food students ate at school. One summarised the changes they had made as:

> Healthy breakfasts put on by the school. More fruit—less other food for morning tea (for both staff and pupils). Introduced tooth brushing programme after lunch each day. 5+ a day activities. Healthy heart tick food offered for sale. No fizzy drinks. (Lead teacher)

In the physical activity area, most described how the school physical activity culture, even if it was an existing strength of their school, was being enhanced as a result of FIS. A number talked about how they were encouraging staff to incorporate physical activities into their classroom programme, providing equipment or encouragement for students to engage in games at break time, and organising more whole-school physical activity events. A number described the support they received from interagency partners:

> Whole-school activity days, new PE focus on planning, new playground marking (part of a 5-year plan). SPARC are involved in above. (Lead teacher)

As noted in Table 22, over half of lead teachers also said their school had made changes connected to the sunsmart area. Common changes included the revision of policies in this area, and more active promotion of sunhat, sunscreen, and shade policies:

> We are intending to review our guidelines relating to sun protection early next year. There is now an emphasis on protective clothing, use of sun block and doing things in shaded areas. (Lead teacher)

In addition, some staff noted that they were working towards sunsmart accreditation and/or planning for the development of additional shade areas.

In contrast, when asked about the smokefree component, many staff noted that their school was already smokefree (as required by legislation). A few stated that this area was covered in the classroom with senior students or that they planned to review teaching practices in relation to smokefree in the next year:

> We have been a smokefree school for many years—but need to do more classroom teaching about smokefree. Planned for 2007. (Lead teacher)

Although the majority of changes were concerned with school organisation or environment, nearly three-quarters of Year 4 teachers also noted that they had made some form of change to classroom practice. Teachers described a variety of ways they had increased their focus on one or more of the health areas in their classroom programme or incidentally during the day. These changes are explored in more depth in a following section of this report.

We also categorised all of the changes mentioned by whether there was an active level of involvement by students or parents/whänau. These types of changes were less common, with 24 percent of Year 4 teachers describing activities in which students were involved in setting directions or making decisions. An example is shown by this quote:

> We tried to implement a physical activity for each curriculum area, and tried to participate in physical activity at least once each hour. The whole class contributes to ideas and implementation of the activity. The whole class monitors activities and each other, evaluates the activity, and suggests improvements. (Year 4 teacher)

Expectations and the reality of FIS

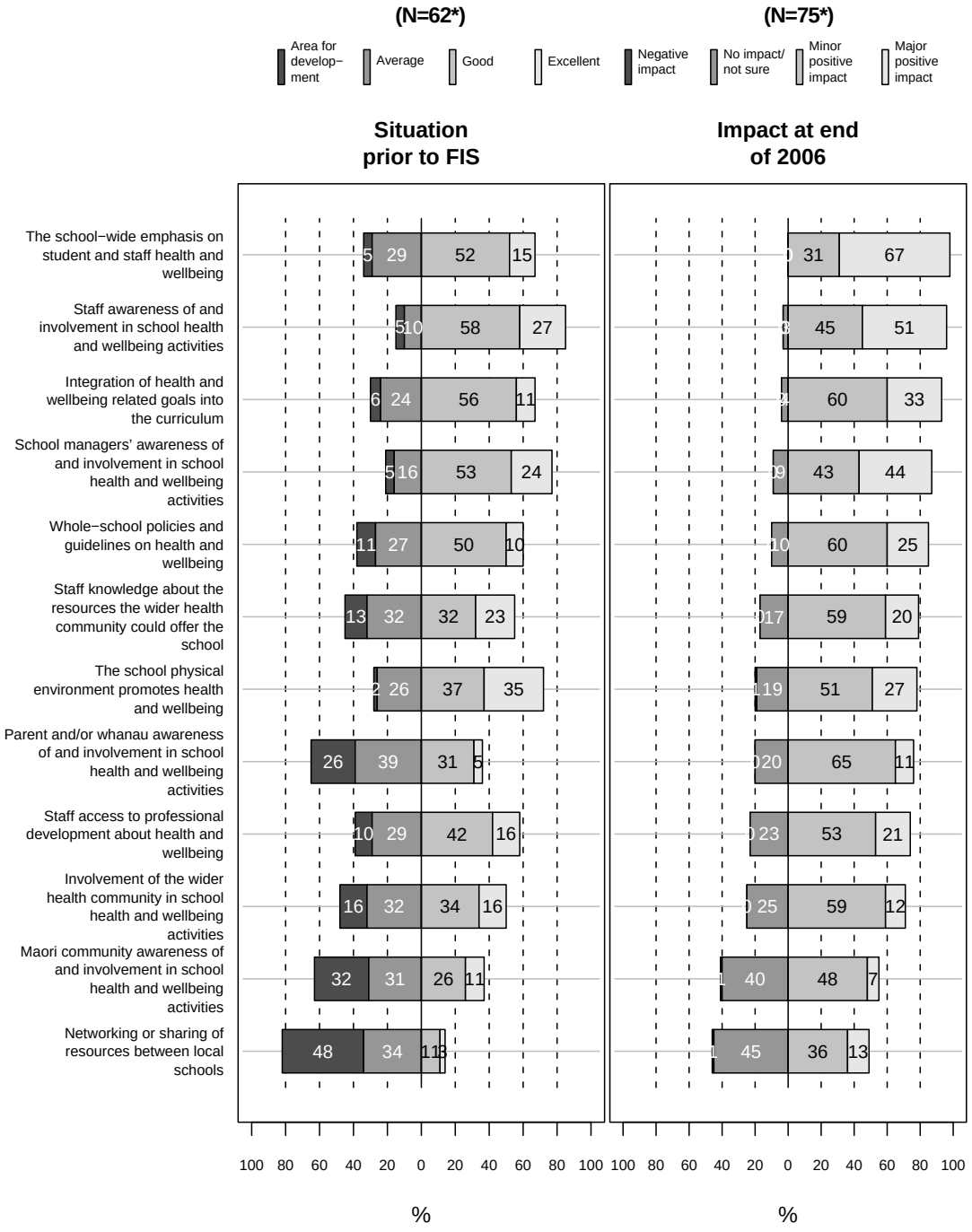
School staff's views on the impact of FIS on school-wide practices

The baseline surveys asked school staff to rate a number of school-wide practices related to health and wellbeing, and indicate any changes they expected FIS to facilitate in these practices. At the end of 2006 we asked school staff to indicate whether FIS had had an impact on these areas. Overall, the four groups of staff surveyed[67] had very similar views about school-wide practices prior to FIS, and the potential and actual impact of FIS on these practices. Given this similarity, and in the interests of brevity, we have chosen to present the combined data from Phase 1 and Phase 2 lead teachers. We have included only the perceived impacts at the end of 2006, and not views on the potential impacts that were collected as baseline data.

Figure 16 shows two scales. The first on the left-hand side shows lead teachers' views about the situation at their school prior to FIS. The scale on the right-hand side shows their views at the end of 2006 about the impact of FIS. Lead teachers (and all other staff groups) reported the largest impact of FIS had been on their school's overall emphasis on health and wellbeing, thus supporting the information presented above which shows that most change had occurred in school organisation and environment. For the top four items in Figure 16, there was a general trend for the impacts reported at the end of 2006 to have exceeded staff's expectations at the start of 2006.

[67] The four groups were: Phase 1 lead teachers, Phase 2 lead teachers, Phase 2 principals, and Phase 2 Year 4 teachers.

Figure 16 **Lead teacher views on the impact of FIS on school-wide practice**



* Nonresponse rates varied between 0–5%. A nonresponse category is not included in this figure.

Overall, staff considered that FIS had facilitated a "minor" or "major" positive impact in most of the listed aspects of school practice. Staff reported that FIS had facilitated the most change in areas where they had a stronger base on which to build. That is, prior to FIS, they rated these areas as "good" or "excellent".

The least change occurred in two of the areas staff considered, prior to FIS, needed the most development. These were networking or sharing of resources between local schools, and Mäori

community awareness and involvement in school health and wellbeing activities. Prior to FIS, a number of staff also noted that parent/whänau awareness and involvement in school health and wellbeing activities was an area that needed development. At the end of 2006, the majority noted that FIS had had a "minor" positive impact on this area.

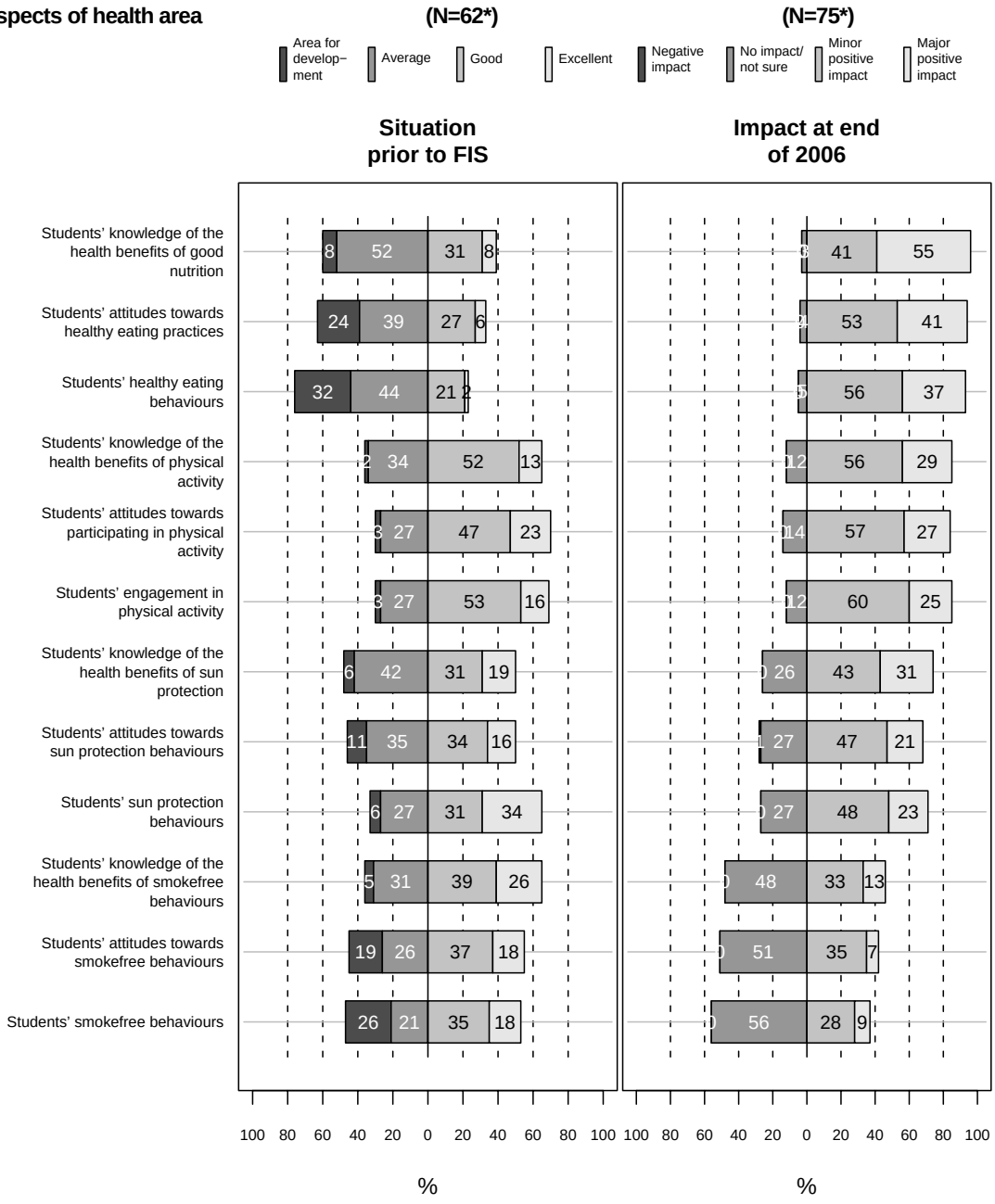
A small number of staff commented that FIS was not the only health and wellbeing initiative that was impacting on schools or students, and therefore it was difficult for them to attribute the changes that had occurred to FIS. But given this caveat, overall these data suggest that FIS had placed health and wellbeing squarely on the agenda in many schools, and was contributing to a number of changes in school policies and practices.

School staff views on the impact of FIS on students

Students' knowledge, attitudes, and behaviours in the four health areas

Prior to starting FIS, we asked all the staff groups to rate students' knowledge, attitudes, and behaviours in relation to the four health areas, and to indicate if they thought FIS would have an impact on these. At the end of 2006, we asked staff if they had noticed any changes as a result of FIS. Like the data on school-wide practices, the four groups of staff surveyed had very similar views on these questions. Therefore as an overall indicator of staff views, in Figure 17, we have presented the FIS lead teacher baseline data alongside the impacts reported at the end of 2006.

Figure 17 **Lead teacher views on the impact of FIS on students**



* Nonresponse rates varied between 0–7%. A nonresponse category is not included in this figure.

These data show different patterns for the four health areas. For the three health areas that staff indicated were a priority in 2006 (healthy eating, physical activity, and sunsmart), there was a general trend for the reported impacts to have exceeded staff's expectations. The smokefree area was an exception to this trend, with staff tending to report lower than expected impacts in this area.

Prior to FIS, staff indicated that healthy eating was the area that needed the most development. In particular, almost one-third of lead teachers and nearly half of Year 4 teachers indicated that

students' healthy eating behaviours could be improved. In 2006, healthy eating was a priority area at most schools, and the area in which staff reported making the most changes. At the end of 2006, staff reported that FIS had had the greatest impact on this area. Half indicated that FIS had had a "major" positive impact on students' knowledge and attitudes, and just over one-third noted corresponding changes to students' healthy eating behaviours. The impacts reported by staff are consistent with the changes shown in the student healthy eating data.

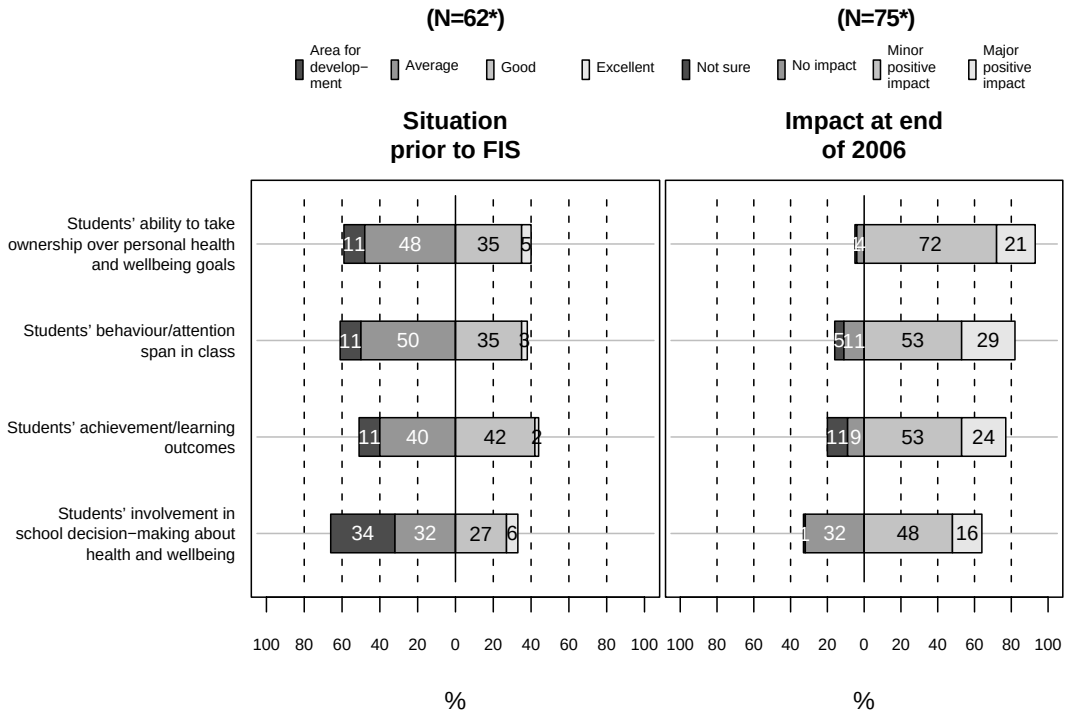
Prior to FIS, most staff indicated students' knowledge, attitudes, and behaviours in regard to physical activity were "good" or "excellent". Like healthy eating, physical activity was a priority area at most schools in 2006, and most staff considered FIS had had a "minor" or "major" positive impact on this area. Year 4 teachers tended to give a higher impact rating in this area than other staff. Their views are consistent with the student data which show positive changes in students' attitudes, knowledge, and behaviours in regard to physical activity.

Sunsmart was the third priority area in 2006, and again, the staff impact data reflect this position. A different pattern is shown for smokefree. Like healthy eating, prior to FIS, a number of staff indicated that students' attitudes and behaviours in regard to smokefree were an "area for development". But many schools had not focused on this area in 2006, and both the student and staff data show fewer impacts in this area in comparison to the two main priority areas.

Students' achievement and general health and wellbeing

To ascertain if FIS was having an impact on wider student outcomes, prior to FIS, and at the end of 2006, we asked staff to rate students' behaviours or skills in a number of areas. As shown in Figure 18, at the end of 2006, the majority of lead teachers considered FIS had had a "minor" positive impact on students' ability to take ownership over personal health goals, classroom behaviour, and achievement. Principals' views were different; they tended to report a higher level of impact than other staff.

Figure 18 **Lead teacher views on the impact of FIS on students' general health and outcomes**



* Nonresponse rates varied between 1–5%. Nonresponses are not included in this figure.

At the end of 2006 we also added two questions. The majority of FIS lead teachers reported FIS had had either a "major" (25 percent) or "minor" (52 percent) positive impact on students' emotional and social health and wellbeing. Likewise, the majority also considered FIS had had either a "major" (35 percent) or "minor" (41 percent) positive impact on students' physical health and wellbeing, such as dental hygiene.

Overall, the impacts reported by staff are consistent with those reported in the student data and with schools' focus areas. The two areas on which most schools focused in 2006—healthy eating and physical activity—show the most change in both the staff and student data.

Support of FIS

Support of FIS by the school community

Similar to the findings reported in the first interim report (King et al., 2006), most staff thought their colleagues and students were highly supportive of FIS, as shown by the lead teachers' views presented in Table 24. Support for FIS from parents/whānau varied more widely but was still rated as "high" or "very high" in the majority of cases.

Table 24 **Support of FIS by school community**

Support by:	Lead teachers End of 2006 (N=75) Very high %	High %	Medium %	Low/Very low %
School management	76	20	1	3
Students	75	24	1	-
Teachers	69	24	5	1
Parents/whänau	45	37	15	3

Leadership

The school change literature suggests that purposeful leadership, and the support of the principal and senior staff, is important to the success of an initiative (Boyd et al., 2005). Table 24 above shows that the majority of staff thought that school management showed a "very high" level of support for FIS. In over half of Phases 1 and 2 schools, FIS was led by a member of the senior management team (a DP, AP, or principal). These people are in positions that enable them to influence school practices. Figure 16 shows that nearly all lead teachers thought that FIS was having either a "major" (44 percent) or "minor" (43 percent) positive impact on school managers' awareness and involvement in school health and wellbeing activities. Only a very small proportion (9 percent), thought FIS had had no impact on school management.

Fruit provision and management

Most staff rated the quality of the fruit as "very high" or "high", and as shown in Table 25, the fruit delivery aspects of FIS also appeared to be functioning well.

Table 25 **Management of the fruit**

Systems in place for:	Lead teachers End of 2006 (N=75) Very effective %	Moderately effective %	Effective %	Not very/ Not at all effective %
Fruit delivery	81	9	9	-
Storing and managing the fruit	71	21	5	1
Monitoring students' intake of fruit	43	33	16	7

Interagency support and school clusters

The majority of lead teachers and principals held similar views on the support surrounding FIS, with most rating the aspects of this support shown in Table 26 as "very" or "moderately"

effective. Lead teachers reported that the communications from their local FISC were particularly effective.

Table 26 **Support surrounding FIS**

	Lead teachers End of 2006 (N=75)			
Type of support	Very effective %	Moderately effective %	Effective %	Not very/ Not at all effective %
Communications about FIS from the local FISC	71	16	11	1
PD provided through FIS	52	31	15	1
The support from local agencies	45	33	19	1
The FIS cluster your school is in	43	27	20	7

The least effective aspect of the support was the school clusters. Although the majority of lead teachers rated their cluster on the top three points of the scale, the data reported elsewhere suggest they were divided as to whether they considered FIS had supported networking and the sharing of resources between schools. About one-third of lead teachers noted that staff from other schools had been helpful in supporting their programmes (see Table 31), and as shown in Figure 16, about one-third thought FIS had had a minor impact on the sharing between schools, but a substantial proportion (45 percent) stated FIS had had "no impact" on this aspect of practice. This suggests that the support and resources staff gain from contact with interagency partners have been more influential in supporting school programmes than contact with the staff from other schools. It may also suggest that practices in regard to clustering may need to be reviewed to ensure that staff are able to gain the maximum benefit from attending these sessions.

The best things about FIS

At the end of 2006, we asked staff to describe the best things about FIS. Most noted two or three main benefits that were in line with the changes and impacts reported above. The majority were extremely positive about the health benefits of eating a piece of fruit a day, and the change in attitudes they had observed as a result of students' increased access to fruit. A smaller proportion commented on other areas. These included the "healthy choice" decision-making skills students were developing, or that parents/whänau were starting to show active support for FIS by changing the food they gave their children for lunch:

> The children look forward to eating their fruit each day and their parents are providing healthier lunches... The children are becoming aware of living a healthy lifestyle. The development of our student health team. (Lead teacher)

Some noted that FIS had acted as a catalyst which encouraged their school to give the four health areas more prominence:

> The FIS initiative has caused a big focus shift to the four areas and we are now constantly discussing the benefits of these with students. This empowers them to make intrinsic positive choices. Examples are the dramatic increase of fitness noted at our school cross country and cluster cross country and also the drastic decline in ordered lunches. Kids are more focused on school work and kids that may go without food are covered through fruit and other initiatives such as a breakfast club. All in all, a very positive outcome. (Year 4 teacher)

Others considered the support they received from interagency partners to be one of the best things about FIS:

> We have had a lot of support from the co-ordinators, Cancer Society and the Heart Foundation, and Sport Auckland so far. (Lead teacher)

Integrating FIS into the curriculum

To take a closer look at the impact FIS was having on classroom practice, prior to FIS and at the end of 2006, we asked Year 4 teachers a number of questions about how they approached teaching about health and wellbeing.

Year 4 teachers' approaches to health and wellbeing

Prior to FIS, as shown in Table 27, all but one Year 4 teacher noted they incorporated activities connected to healthy eating and physical activity within the curriculum. In contrast, sunsmart behaviours were not covered by about one-fifth of teachers, and smokefree by one-third.

Table 27 **Coverage of FIS areas within the curriculum prior to FIS**

	Year 4 teachers Start of 2006 (N=33*)	
Health priority area	**Covered within curriculum %**	**Not covered within curriculum %**
Healthy eating	97	3
Physical activity	97	3
Sunsmart	82	18
Smokefree	67	33

* Given the small N, the percentages in this table should be interpreted with caution.

With the exception of physical activity (which teachers commonly approached by organising students to do physical activity or by teaching physical activity skills), most teachers integrated the four FIS areas into the curriculum via units related to one or a number of curriculum areas. Unsurprisingly, the most common curriculum area associated with these units was Health and PE, but all other curriculum areas were mentioned. This integration was most common for healthy eating, with each curriculum area being mentioned by one-quarter of teachers. For example, 49

percent of teachers noted they covered healthy eating in connection with English activities, 39 percent with te reo Mäori, and 36 percent with science.

To explore how FIS was being translated into classroom settings, we asked the Year 4 teachers to indicate from a list the different ways they encouraged students to learn about health and wellbeing (at the start of 2006), and the four FIS health areas (at the end of 2006). As shown in Table 28, at the start and end of 2006, the most common approach was organising units about the health areas for students to work on. The proportion of teachers who selected this item decreased over 2006. This could be because the baseline questionnaire asked teachers about all aspects of health and wellbeing, not just the four FIS areas.

At the end of 2006, teachers reported increased involvement by students in setting health topics and school-wide decision making, giving some indication that FIS could be supporting teachers to use processes that give more decision-making power to students. This shift towards student-centred practices was located within classroom and school environments, with very few teachers reporting students were engaged in health promotion activities connected to the wider community.

Table 28 **How Year 4 teachers teach about the four FIS health areas**

	Year 4 teachers	
Students learn about health areas by:	**Start of 2006 (N=33*) %**	**End of 2006 (N=38*) %**
Working on units about health/the four health areas**	**91**	**68**
Setting individual health/wellbeing goals	76	61
Completing self-assessments or reflections	79	61
Taking action in regard to class or school health/wellbeing initiatives	46	53
Setting health/wellbeing topics or content**	**24**	**50**
Peer reviewing each other's work	42	42
Setting collective health/wellbeing goals	34	40
Taking action in regard to personal health/wellbeing goals	15	34
Being involved in school-wide decision making around health/wellbeing**	**6**	**29**
Being involved in setting assessment tasks or success criteria	33	26
Taking action in regard to local community health/wellbeing initiatives	9	8

* Given the small Ns, the percentages in this table should be interpreted with caution.

** Indicates items that show a significant difference between the start and end of 2006 (in **bold**).

Forming partnerships with parents/whänau

Year 4 teachers were asked if parents/whänau were involved in classroom health and wellbeing activities. As shown in Tables 29 and 30, the areas in which parents/whänau were involved, and the level and type of involvement, stayed relatively constant over 2006. At both the start and end of 2006, parents/whänau were most involved in activities connected to healthy eating.

Table 29 **In which health and wellbeing areas are parents/whänau involved?**

Health priority area	Year 4 teachers	
	Start of 2006 (N=33*) %	End of 2006 (N=38*) %
Healthy eating	46	50
Physical activity	39	37
Emotional and social wellbeing	12	24
Sunsmart	30	13
Smokefree	15	8
Other	3	3
Parents/whänau are not involved	30	24

* Given the small Ns, the percentages in this table should be interpreted with caution.

The most common type of involvement was parent/whänau input into students' projects or assistance in the classroom (see Table 30). At about one-fifth of schools, parents/whänau had a more active role and were engaged in health promotion with students. At a small number of schools, parents/whänau were involved in setting topics or content.

Table 30 **Parent/whänau involvement in learning about health and wellbeing**

Type of parent/whänau involvement	Year 4 teachers	
	Start of 2006 (N=33*) %	End of 2006 (N=38*) %
Students work on projects that require parent/whänau input	42	50
Parents/whänau assist in the classroom as units are taught	27	29
Parents/whänau work with students on class, school, or community health and wellbeing projects	15	21
Parents/whänau with specific skills contribute to units	12	13
Parents/whänau are involved in setting topics or content	9	5
Other (e.g., the school sends messages to parents about health)	3	16

* Given the small Ns, the percentages in this table should be interpreted with caution.

Forming partnerships with health and community agencies

Lead teachers

One of the aims of FIS is to connect schools with interagency partners who can support the development of programmes. At the end of 2006, schools were working with an average of six agency partners or local groups to support FIS. As shown in Table 31, nearly all were working with a FISC, and around half had connections with the representatives from two of the main

agency groups (SPARC/regional sports trusts and the National Heart Foundation). Two-fifths also noted they had connections with the Cancer Society. There was a general trend for external involvement to have increased between the implementation and end of 2006 surveys, suggesting that FIS is supporting schools to make these connections. Congruent with the longer period of time they had to develop relationships with agency partners, Phase 1 lead teachers were working with one more partner on average than Phase 2 teachers.

The involvement of one of the main agency partners, School Support Services/Ministry of Education, showed a different pattern to that of the other partners. The number of schools stating they had connections with School Support Services/Ministry of Education decreased between 2005 and 2006. In addition, connections with other potential partners such as the local council or iwi groups did not seem to have increased in the same fashion as those with the main partners.

Table 31 **Partners working with lead teachers as part of FIS**

	Lead teachers	
Partners	**End of 2005 implementation survey Phase 1 only (N=27*) %**	**End of 2006 Phases 1 and 2 (N=75) %**
FISC/HPS adviser**	**78**	**96**
Public health nurses (PHNs)	67	73
Sports Trust or SPARC representative	41	55
National Heart Foundation representative	33	47
Cancer Society representative	27	40
Staff from other schools	NA	33
Social Workers in Schools (SWIS)	NA	31
Life Education Trust	NA	28
Iwi health providers	15	21
Other health workers (e.g., DHB)	NA	15
Local community groups	4	12
School Support Services/Ministry of Education staff	19	9
Local businesses	11	8
Local iwi representatives	NA	7
Local social services	7	7
College of Education/University staff	NA	3
Local council	7	3
Other	-	4

* Given the small Ns, the percentages in this table should be interpreted with caution.

** Indicates items that show a significant difference between 2005 and 2006 (in **bold**).

As noted in Table 26, most lead teachers rated the support they received from agencies on the top two points of a five-point scale, with almost half (43 percent) choosing the top point: "very effective". Very few (7 percent) noted this support was "not very" or "not at all" effective. Only a small number of lead teachers reported they were not able to access the people they needed to support programmes.

Year 4 teachers

We also asked Year 4 teachers about the partnerships they found useful in supporting their programmes. The average number of people who supported teachers was similar (about four) at the start and end of 2006. There was a slight increase in connections with people from sports trusts/SPARC and a small decrease in connections with School Support Services/Ministry of Education. The people who were most frequently mentioned were those with whom teachers had the most contact, that is, other staff at their school. Year 4 teachers showed a lower number of connections in comparison to lead teachers, reflecting the fact the FIS lead teachers are likely to be the main conduit in the school for access to interagency partners.

Table 32 **Partners useful in supporting Year 4 classroom programmes**

Partners	Year 4 teachers	
	Start of 2006 (N=33*) %	End of 2006 (N=38*) %
Staff at this school	94	79
Life Education Trust	67	68
Public health nurses (PHNs)	70	61
The school lead health/HPS/FIS teacher	49	55
Sports Trust or SPARC representative	39	53
FISC/HPS adviser	27	40
National Heart Foundation representative	24	29
Cancer Society representative	27	24
Iwi health providers	12	24
Local community groups	-	24
Social Workers in Schools (SWIS)	46	21
Local social services	18	18
Other health workers (e.g., DHB)	NA	11
Staff at other schools	18	8
School Support Services/Ministry of Education staff	27	8
Local iwi representatives	9	8
Local council	6	6
Local businesses	6	3
College of Education/University staff	12	3
None	6	3
Other	-	5

* Given the small Ns, the percentages in this table should be interpreted with caution.

Although the number of people who were involved in Year 4 teachers' classrooms had not substantially changed, their level of involvement seems to have deepened. Table 33 shows more involvement by interagency partners, particularly in the two areas which the student data had changed the most: healthy eating and physical activity. Again, involvement in the smokefree area had not changed.

Table 33 **Year 4 health areas contributed to by agency partners**

Health priority area	Year 4 teachers	
	Start of 2006 (N=33*) %	End of 2006 (N=38*) %
Healthy eating**	**73**	**98**
Physical activity**	**55**	**90**
Sunsmart	33	53
Smokefree	21	26

* Given the small Ns, the percentages in this table should be interpreted with caution.

** Indicates items that show a significant difference between the start and end of 2006 (in **bold**).

The type of contribution these partners made also appears to have significantly broadened in scope. As shown in Table 34, by the end of 2006 the partners were contributing more frequently to all the activities listed, suggesting that FIS is providing a conduit which is supporting agencies to work with school staff in a more in-depth fashion.

Table 34 **Type of contribution by agency partners to Year 4 programmes**

Area	Year 4 teachers	
	Start 2006 (N=33*) %	End 2006 (N=38*) %
Provide information or resources**	**64**	**90**
Provide advice**	**52**	**82**
Talk to student groups	39	55
Provide PD	27	53
Involved in setting topics or content**	**12**	**37**
Work on joint class-school/community projects	27	32
Other	6	8

* Given the small Ns, the percentages in this table should be interpreted with caution.

** Indicates items that show a significant difference between the start and end of 2006 (in **bold**).

Access to resources to support school programmes

One premise of FIS is that increased contact with agency partners should increase teachers' access to, and use of, their resources and programmes. Prior to FIS, Year 4 teachers already used a range of resources to teach about health and wellbeing. Many of these resources came from the main agency partners. By the end of 2006, there was a general trend for increased usage of resources provided by the main partners, with slightly larger proportions of Year 4 teachers using 5+ a day resources, Jump Rope for Heart, SPARC resources, and resources from the sunsmart schools

website. The use of resources by lead teachers showed a similar pattern to that of Year 4 teachers, but reflecting their role as health leaders and their access to agency partners, they tended to report greater usage of the main partners' resources, and in particular, the School Food Programme from the National Heart Foundation and resources from SPARC. Congruent with their longer involvement in FIS, this pattern was more marked for Phase 1 lead teachers.

The majority of Year 4 and lead teachers accessed at least one resource to support healthy eating, physical activity, and sunsmart activities. In contrast, a much smaller percentage had accessed resources to support smokefree activities. At the end of 2006 the average number of resources used by Year 4 teachers was eight, and by lead teachers, seven.

Table 35 **The resources found useful in supporting school programmes**

	Year 4 teachers		Lead teachers
Type of resource	**Start of 2006 (N=33*) %**	**End of 2006 (N=38*) %**	**End of 2006 (N=75) %**
5+ A Day resources from United Fresh	70	82	87
Active Schools Tool Kit from SPARC	33**	45	73
Push Play Action packs from SPARC		42	48
Resources from the Ministry of Education	82	66	72
Teacher developed resources	82	74	71
Sunsmart resources from the Cancer Society	61	61	59
School Food Programme (National Heart Foundation)* **	30	**29**	**59**
Jump Rope for Heart (National Heart Foundation)	61	71	52
Resources from Learning Media	70	58	51
Resources from the Sunsmart schools website	18	32	41
Health and PE exemplars from TKI	58	53	33
Health and PE curriculum resources from TKI	33	32	33
Smokefree schools resources	27	18	23
Resources from sports trusts	9	16	12
Resources from the health education database	NA	16	8
Lungfish challenge or resources	3	5	5
Health Sponsorship Council programmes	6	-	4
DHB toolkits from the Ministry of Health	6	8	1
Other resources	12	3	3

* Given the small Ns, the percentages in this table should be interpreted with caution.

** At the start of 2006 one question was asked about SPARC resources. At the end of 2006 this question was divided into two.

*** Indicates items that show a significant difference between Year 4 and lead teachers (in **bold**).

In general it appears that the main benefit of FIS, rather than increasing access to resources, has been in increasing the ***depth*** of contact with agency partners, thus indicating the importance of having people on the ground who can support school staff.

Teachers' access to information, resources, and professional development

Year 4 teachers

At both the start (70 percent) and end (66 percent) of 2006, the majority of Year 4 teachers wanted more information, resources, or PD to support FIS. In general, teachers were more interested in information and resources than in PD. As shown in Table 36, between the start and end of 2006, teachers' most pressing needs stayed relatively constant. These were around information and resources to support the integration of the four priority areas into the curriculum, and involving parents/whänau and the community in school health and wellbeing initiatives. There was a small decrease in teachers' need for information and resources about the FIS initiative, the HPS approach, and the resources agency partners could offer schools, suggesting teachers considered they had adequate information about these areas.

Table 36 **Year 4 teachers' information, resource, and PD needs**

	Year 4 teachers			
	Start of 2006 (N=33*)		End of 2006 (N=38*)	
Area	PD %	Resources/ information %	PD %	Resources/ information %
Integrating healthy eating into school practice/the curriculum	9	39	16	37
Integrating sunsmart into school practice/the curriculum	15	36	5	34
Involving parents/whänau in health and wellbeing initiatives	9	39	8	34
Involving the wider community in health and wellbeing initiatives	12	33	8	29
Integrating physical activity into school practice/the curriculum	15	24	11	26
Integrating smokefree into school practice/the curriculum	15	30	5	26
Other whole-school approaches to health and wellbeing	9	33	5	21
Measuring the impact on students' learning of initiatives in the 4 areas	24	46	8	21
The resources agency partners offer schools	6	36	5	18
The FIS initiative	15	36	-	16
The HPS approach to health and wellbeing	9	30	8	13
How to work in a school cluster	3	15	3	5

* Given the small Ns, the percentages in this table should be interpreted with caution.

FIS lead teachers

We also asked FIS lead teachers about their resource and PD needs. Like Year 4 teachers they were more interested in information and resources than in PD. Their needs differed depending on

whether they were part of Phase 1 or Phase 2 of FIS. At the start of 2006, reflecting the fact they were about to start FIS, Phase 2 lead teachers were significantly more likely than their Phase 1 colleagues to indicate they needed information, resources, or PD.

At the end of 2006, 70 percent of Phase 1 and 57 percent of Phase 2 lead teachers indicated they would like further support. Their needs differed from those of Year 4 teachers, with lead teachers (particularly those in Phase 2) being more interested in a wider range of resources and PD. In particular, lead teachers wanted information about measuring the impact on students' learning in the four priority areas (as shown in Table 37). Lead teachers also wanted more resources about the aspects of FIS that the data show many schools had yet to focus on: smokefree, sunsmart, and involving parents/whānau and the community in health and wellbeing initiatives. Their interest in resources to support the two main focus areas in 2006 (healthy eating and physical activity) had decreased. This pattern shows lead teachers are aware of the areas of FIS that could be further developed.

Table 37 **Lead teachers' information, resource, and PD needs**

	Lead teachers			
	Start of 2006 (N=62)		End of 2006 (N=75)	
Area	PD %	Resources/ information %	PD %	Resources/ information %
Measuring the impact on students' learning of initiatives in the 4 areas	26	50	28	44
Involving parents/whānau in health and wellbeing initiatives	23	56	21	41
Integrating smokefree into school practice/the curriculum	13	37	20	37
Involving the wider community in health and wellbeing initiatives	19	47	19	37
Integrating sunsmart into school practice/the curriculum	13	35	15	36
Integrating healthy eating into school practice/the curriculum	19	40	15	28
Other whole-school approaches to health and wellbeing	21	37	13	25
Integrating physical activity into school practice/the curriculum	15	35	15	24
The resources agency partners offer schools	1	40	9	24
How to work in a school cluster	6	19	9	17
The HPS approach to health and wellbeing*	**18**	**29**	**5**	**11**
The FIS initiative*	**15**	**23**	**4**	**7**

* Indicates items that show a significant difference between the start and end of 2006 (in **bold**).

We also asked principals about their resource and PD needs. Just over half (55 percent), considered their school needed more access to resources, information, or PD. Principals' needs were similar to those of lead teachers, with one-third or more indicating they were interested in resources and information about involving parents/whānau and the community in health and wellbeing initiatives, and measuring the impact on students' learning of initiatives in the four

priority areas. Unlike lead teachers, one-third of principals also wanted more information about the resources agency partners could offer schools.

This information indicates that the support provided to schools may need to be tailored to these groups, if it is to best meet the needs of different staff groups (in this case Year 4 teachers, lead teachers, and principals). Although the different groups of staff mostly indicated they required resources and information rather than PD, the data collected elsewhere suggest that school staff could benefit from PD which encourages and supports them to use health promotion or action competence models in the classroom.

Sustainability of FIS

The sustainability of FIS is a concern for all the partners in this initiative. We asked all those we surveyed some questions that were designed to explore the aspects of FIS which supported its success, and therefore were also likely to support its sustainability.

FIS success factors

As shown in Table 38, lead teachers and principals held similar views about the aspects of FIS which supported it to be successful. The factors considered the most important were continued central fruit supply, support from agency partners, cluster groups, and support from all staff. Year 4 teachers held different views—they considered that the success of FIS rested more on how the FIS areas were woven into the curriculum and whether resources were available for teachers to use. All three groups placed a similar weight on the importance of the lead teacher role.

Table 38 **Factors which support FIS to be successful**

Success factor	Year 4 teachers End of 2006 (N=38*) %	Principals End of 2006 (N=40*) %	Lead teachers End of 2006 (N=75) %
Funding/continued central distribution of fruit**	**5**	**48**	**47**
Ongoing support from FISC and agency partners	8	20	32
Clustering and sharing of good practice between schools**	**-**	**18**	**16**
Support from all staff	13	8	16
Systems in place to support a continued focus on health	13	3	13
Lead teacher (funded) to support initiatives	16	15	12
Organised systems for managing the fruit	-	20	9
Support from school management or BoT	13	3	8
School focus on health promotion models	3	5	8
Parent/whänau involvement and information	11	15	8
Inclusion of the priority areas in curriculum planning and activities**	**24**	**8**	**4**
Resources for teachers about the health priority areas**	**24**	**5**	**4**
Involvement of local community (e.g., businesses)	-	3	3
Other	2	8	12

* Given the small Ns, the percentages in this table should be interpreted with caution.

** Indicates items that show a significant difference between staff groups (in **bold**).

Like the information, resource, and PD needs reported in Tables 36 and 37, these data show that different staff groups have different views. This suggests that, to support longer term sustainability, a variety of processes and supports are likely to be necessary. For example, continued funding of the lead teacher role and fruit supply is likely to support sustainability. In addition, further attention could be paid to classroom teachers' desires for additional resources to support them to integrate the health priority areas into the curriculum.

Embedding FIS goals and processes in school practice

One way FIS can be sustained in the longer term is through processes and policies relating to FIS becoming embedded in the everyday life of schools. The survey data indicate that FIS is supporting this to occur as school-wide policies and procedures are being developed. It is less clear what actions are needed to keep these policies "living" documents. Some staff noted that FIS had prompted them to re-activate policies that had, over time, lost their impetus. It is clear that longer term sustainability is supported when systems ensure that student health and wellbeing is

kept on the agenda; and policies and practices are regularly revisited, kept up to date; and thus are "living" documents.

Another way FIS areas and processes can become part of the every day life of schools is through the inclusion of the FIS areas and the HPS process within curriculum practice. The survey data indicate that the FIS areas were starting to become more embedded within the curriculum, and to a lesser extent, health promotion processes showed the same trend. Previous experience suggests that this process will take time. As noted in the school change literature, three to five years is a realistic time frame for changes to teacher practice to become evident in student outcomes (Russell, 2003; Timperley, 2003). This literature suggest that sustainability is enhanced by whole-school PD. In the case of the FIS initiative, the survey and case study data suggests that this type of PD could explore: how the use of action competence learning processes can assist teachers to action the intent of the Health and PE curriculum; and the integration of the health priority areas with curriculum areas other than Health and PE.

Sustaining fruit provision

Another aspect of sustainability is the continuation of fruit provision. Many staff considered this was vital for the longer term success of FIS. At the end of 2006, we asked lead teachers and principals if their school had started to develop plans to continue providing fruit once the funding for this ceased. Less than half of lead teachers (40 percent) and principals (38 percent) had started planning. Reflecting the fact that their funding was scheduled to finish first, Phase 1 lead teachers were significantly more likely their Phase 2 colleagues to have started this process. As shown in Table 39, the most common plans were: developing school orchards or gardens; seeking sponsorship or support for funds from various groups; and working towards families taking responsibility for providing fruit. Of those who had not developed plans, about half noted that they would be doing so in the future.

Table 39 **Plans for fruit sustainability**

Sustainability plan	Principals End of 2006 (N=40*) %	Lead teachers End of 2006 (N=75) %
No plans developed yet/not sure	63	60
Developing school orchards or gardens	13	19
Seeking sponsorship or donations from local suppliers, businesses, or iwi	8	17
Working towards families taking responsibility/funding	10	13
Working with cluster on options	-	7
Fundraising	5	4
Other	-	3

* Given the small Ns, the percentages in this table should be interpreted with caution.

Suggested enhancements to FIS

At the end of 2006, we asked school staff for their suggestions about aspects of FIS that could be improved. Only a small proportion (20 percent of lead teachers, 20 percent of principals, and 16 percent of Year 4 teachers) suggested enhancements, thus attesting to their support of the initiative. The main improvements suggested were around continuation of the fruit supply, or ways to improve this supply:

> Schools being able to focus on the implementation of the scheme and associated health initiatives. Please continue the centralised system of [fruit] purchasing, delivering etc. We don't want or need to do this. This could become a burden and detract from the programme. (Principal)

> Continued supply as we do not have the time or resources to supply or source our own. (Lead teacher)

The second main improvement was changing aspects of the clustering or PD approaches. Most of these suggestions were made by lead teachers:

> Whole staff PD around HPS programmes and expectations/commitments. (Lead teacher)

> More specific focus for training/networking days, e.g., how to gain financial support to make program self sustaining. (Lead teacher)

A small number of lead and Year 4 teachers also noted that they would like more curriculum resources.

Summary of school survey findings

Much of the survey data reported here is from Phase 2 schools. At the time of the follow-up survey these schools had been part of FIS for approximately eight months. This is a short time frame within which to measure change. Notwithstanding this caveat, the Healthy Futures student and staff survey data tell similar stories. Most staff and students showed strong support for FIS (and in particular, the provision of the free fruit). Staff reported that FIS had increased their school's focus on, and awareness of, health and wellbeing and had supported them to make connections with agency partners. As a result, staff considered FIS was supporting a range of changes to school practices and student outcomes.

The staff data show that the two areas which were most closely linked to the curriculum, healthy eating and physical activity, were a priority in 2006. The student data support this, and show the most change in these two areas. Although many of the statistically significant shifts in the student data were small, nearly all were positive. It is possible that these shifts are also due to factors other than FIS, such as student maturation or other pre-existing or new health-related initiatives. But when viewed in combination with the staff data and the information collected from the case study schools, the overall picture is one of a systemic change in FIS schools which has occurred within a very short time frame, and which appears, at least for three of the health areas, to be connected to the FIS initiative.

Over 2006, students with less positive attitudes or lower levels of knowledge about the health priority areas started to become more like their peers, thus suggesting that a focus on the four health priority areas in FIS schools is altering students' knowledge, attitudes, and behaviours towards similar outcomes. Table 40 summarises the statistically significant shifts in the student data.

Table 40 **Statistically significant shifts in the student data**

Indicators of change	Health priority area			
	Healthy eating	Physical activity	Sunsmart	Smokefree
Attitudes	√ (nonsignificant)	√		
Knowledge	√	√	√	√
Behaviours	√	√		√ (also nonsignificant negative shift)
Home behaviours	√ (also nonsignificant shifts)	√		

The main statistically significant changes in the student data, which the staff surveys and case study data suggest are likely to be connected to FIS-related activities, are:

- significant increases in students' awareness of the importance of healthy eating and knowledge about healthy food options
- significant increases in both the ***number*** of students who reported eating vegetables and fruit in the day before the survey and in the ***amount*** of vegetables and fruit they ate (most of these increases occurred at school, but some also occurred at home)
- significant increases in: students' awareness of the importance of exercise; enjoyment of exercise; and the number of times students reported engaging in mild to moderate physical activity in the day before the survey
- a significant decrease in the number of times students reported watching TV or playing computer games in the day before the survey
- significant increases in: students' awareness of the importance of being sunsmart and knowledge about sunsmart practices.

The physical activity area showed the most shifts. Student characteristics such as gender and ethnicity, or characteristics such as FIS region, did not show strong associations with these changes. Further analysis indicated that the culture and practices of the school that students attended was a change agent. Changes in students' behaviours were associated with staffs' beliefs that school management and staff were strong supporters of school health and wellbeing initiatives, staff having increased access to PD and support from interagency partners, and the school changing school policies and curriculum activities to align them with the FIS areas.

The health literature suggests that the shifts shown in students' school and home healthy eating and physical activity behaviours are likely to lead to improved health and wellbeing. For example, higher levels of physical activity are associated with benefits to both physical and emotional health (see, for example, Hohepa, Schofield, & Kolt, 2004), and longitudinal NZ studies show that lower levels of childhood TV watching are associated with positive effects on adult health such as lower obesity and smoking rates, and improved fitness (Hancox, Milne, & Poulton, 2004), as well as improved achievement (Wylie & Hipkins, 2006). A healthy body weight, in combination with lower fat intake and adequate vegetable and fruit intake (which provides fibre and nutrients), is likely to act as a preventative factor against a range of diseases, and promote emotional wellbeing (Ministry of Health, 1997).

School and student practices in regard to the smokefree component of FIS showed a different pattern to the other three health areas. After healthy eating, smokefree was most commonly suggested as an area in which development was needed to support students to acquire positive attitudes and behaviours. But many schools did not focus on smokefree in 2006, or were not planning to do so in 2007. At the end of 2006, some changes in the student data in relation to this area were evident: for example, there was a significant increase in students' awareness of the impact of passive smoking and a small but significant decrease in the number of students who reported they smoked more than one cigarette a week. But the staff survey and case study data suggest that these changes are the result of a mix of school, home, and societal factors. The data suggest that there are misconceptions about the smokefree component of FIS, and these need to be addressed. Some staff considered their school was "already smokefree" as required by legislation,

and therefore they had addressed the smokefree component. They did not recognise that this aspect of FIS is also about smokefree education for students (and reducing the number of students who start smoking), staff, and parents/whānau. It is likely that the absence of a dedicated agency workforce in this area further confounds this issue. Staff noted that having programmes or resources available for them to use was one of the main reasons they chose to focus on the other health areas. This information suggests that there is a need to explore how support can be provided for the smokefree component, and that this support needs to include people contact rather than rely on written or Internet-based resources.

The staff data suggest that an increased awareness of three of the four health areas, and changes relating to this awareness, were spreading throughout the school community. All but two school staff reported making at least some change to their practice. Nearly all schools had taken action to address the "school organisation and environment" arm of the HPS framework. In particular, schools had instigated a variety of initiatives designed to create a healthy eating environment within their school, improve their physical activity culture, or increase the emphasis on sunsmart practices. This embedding of policies, procedures, and activities within school cultures is likely to support sustainability in the longer term. Congruent with their longer involvement in FIS, Phase 1 lead teachers reported a wider variety of changes.

The majority of schools were also changing aspects of their practice relating to "curriculum, teaching, and learning". The information collected from Year 4 teachers shows that FIS is supporting an increased focus on three of the four health areas within the classroom. Although changes were starting to occur, and FIS appeared to be supporting an increase in practices that promote student empowerment, many curriculum actions still appeared to be set by teachers. It seems that the full potential of action learning models such as HPS to offer a framework for health promotion and student empowerment has yet to be realised, suggesting a need for PD in this area.

To explore how schools addressed the "community links and partnerships" arm of the HPS framework we divided this arm into two parts: links with parents/whānau and links with health and community agencies. Although staff indicated parents/whānau supported FIS, unlike other areas, parental/whānau involvement in FIS did not show much shift over 2006. A lack of change in this area was also noted in the first interim report (King et al., 2006). Reflecting their longer involvement in FIS, Phase 1 teachers noted more changes than their Phase 2 colleagues. Currently, most schools were using an "information provision" model to make connections with parents/whānau, with fewer activities fitting within an "empowerment" model as advocated by HPS (as described in the introductory section of this report). It is likely that shift in practice in this area will take time as forming partnerships with parents/whānau relies on adequate processes and prior relationship building. Recognising that this was an aspect of FIS (and school practice) that could be further developed, by the end of 2006 the focus of lead teachers was turning to this area.

Substantial changes were shown in the other aspect of "community links and partnerships", that is, the involvement of agency partners in schools. Most schools accessed a range of resources and had connections with a number of agency partners that supported their FIS-related initiatives.

Most considered this support to be very effective, with only a few having difficulty accessing support. Staff had formed or strengthened connections with most of the main interagency partners including FISC, public health nurses, and representatives from SPARC/regional sports trusts, the National Heart Foundation, and the Cancer Society. An exception to this was contact with School Support Services. The data showed low involvement in FIS schools by this agency, and no increase over time.

Prior to FIS, teachers were already using many of the resources provided by the main agency partners, but use of these resources (in particular, from the National Heart Foundation and SPARC/sports trusts) showed a general increase. Lead teachers wanted more resources to assist them to further develop some of the areas that the survey data show have yet to become a main focus (such as involving parents/whānau in FIS and addressing the smokefree component). Year 4 teachers also wanted more resources in these areas and resources to assist them to integrate the other health areas into their practice.

Rather than use of resources, it appears that increased contact with ***people***, that is, agency representatives, has been a key factor in supporting changes both to wider school practices and within the classroom. The findings show a deeper level of involvement by agency partners in the classroom, suggesting FIS is supporting these partners to work in a more active way with schools.

Although the majority of lead teachers considered the school clusters were operating effectively, and about one-third reported they were working in partnership with teachers from other schools to support FIS, most also noted that, to date, FIS had had no or a minor impact on networking and sharing between schools (prior to FIS, this was an area of practice staff considered could be further developed). A few staff members made suggestions about improving the timing or focus of cluster group meetings.

Looking to the future, staff considered that the existence of the following conditions is likely to ensure that FIS is successful in the longer term:

- funding or continued central distribution of fruit and organised systems for managing the fruit
- ongoing support from FISC and agency partners
- clustering and sharing of good practice between schools
- a lead teacher to support initiatives
- support from all staff
- support from school management or the Board of Trustees
- systems in place in schools to support a continued focus on health
- inclusion of the priority areas in curriculum planning and activities
- a school focus on health promotion models
- resources for teachers about the health priority areas
- parent/whānau involvement and information.

It is a premise of FIS that schools will, over a three-year time frame, plan to address the four health priority areas at different levels of the school system (that is, the three aspects of the HPS

framework). In the first year of the initiative in Phase 2 schools, it is to be expected that some areas will show more change than others. Given the short time frame, the survey data paint a picture of a successful initiative that is raising the profile of health and wellbeing within schools, and which is well supported by school staff and students. School staff suggested very few improvements to FIS, attesting to their support of the initiative and the processes used to implement it. The data suggest that there are three key areas which could be pursued to strengthen this initiative. These are the provision of:

- further resources or PD for teachers to assist them to integrate the four health areas into the curriculum. This support needs to clearly align the HPS process with the action competence models suggested in curriculum support materials and promote the use these models in ways that promote student empowerment
- further resources and support for school staff about how to involve their parent/whänau community in FIS (in part, parent/whänau involvement can be addressed by the use of the HPS process or action competence models noted above)
- support to schools around the smokefree component.

4. The case studies

Introduction to the case studies

In this section of the report, we present key findings from case studies of six Phases 1 and 2 FIS schools nominated for their good practice in aspects of FIS. These case studies explore the individual contexts within which changes related to FIS are located. They examine how school staff initiated change, who was involved in the process, what the changes and impacts were, and plans for sustainability. The case studies were also undertaken to support the sharing of good practice with the wider FIS community.

In this chapter we give an overview of commonalities and points of difference between the six schools. The themes that emerge are related to insights from relevant literature. Details about each school's initiatives are provided in the individual case studies in Appendices L–Q. The case studies variously highlight how:

- staff at Linwood Avenue School made connections with the local community to support FIS
- FIS integrated with an existing wellbeing/hauora focus at Manaia View School
- staff at Porirua School located FIS within whole-school approaches to developing a healthy environment
- staff at Riverton Primary School located FIS within whole-school approaches to student health and wellbeing
- staff at Te Kura o te Teko made connections with their whänau community to support FIS
- students at Wiri Central School were involved in action learning about the four health areas.

Changing school cultures and taking ownership of the vision

Initiatives such as FIS cannot happen without school change. The complexities of managing change in a school setting, and the cultural shift this necessitates, are well documented (Hargreaves et al., 1996; Stoll, 2000). A comparison of the experience of the schools in this study to the literature (Boyd et al., 2005), reveals that these schools had many of the factors in place that are likely to support positive change. Some of the key factors are discussed below.

Congruence with the "big picture"

All six case study schools had prioritised student health and wellbeing for at least two to three years prior to FIS, and therefore approaches to improving health and wellbeing were an existing part of the culture of each school. FIS-related activities were located under a wider umbrella of whole-school initiatives relating to the health and wellbeing of students or the environment. For some schools, participation in the Ministry of Education's Mentally-Healthy Schools contract had been a starting point for their current focus. Staff at all schools considered FIS aligned well with their existing "big picture", and was a powerful catalyst that was supporting staff to strengthen and build approaches or see new priorities.

Leading change

Leadership is central to developing, nurturing, and sustaining change (Fullan, 2005; Harris, 2002). Most schools had more than one person in a senior position leading and championing FIS. At all the schools, having the support of the principal was a key driver behind the initiatives. At most schools, the principal was actively involved in FIS and purposeful about ensuring change occurred. Commonly, the principal also delegated leadership responsibilities to a senior health teacher. Their seniority allowed these staff members to influence school activities and practices. Leithwood et al. (2004) note that practices such as this, where a vision is driven by more than one person, is a form of succession planning. School leaders also reported that the board of trustees and parent groups strongly supported FIS, showing this by allocating funds to FIS-related initiatives.

Developing a shared vision

A characteristic that supports school effectiveness is the existence of a common mission or vision that involves shared beliefs, understandings, and clear goals (Russell, 2003; Sammons et al., 1995). To support change, processes are needed that support staff to develop a sense of ownership over school goals (Bartlett, 2005; Timperley & Robinson, 2000). School leaders reported that initially they had experienced resistance from some staff and parents/whänau about some initiatives such as "water only" or "no sweets" policies. Developing processes designed to encourage staff ownership over FIS, keeping open channels of communication, and regularly reinforcing messages, meant that over time this resistance had virtually disappeared. At all schools, the staff we interviewed commented that their colleagues were supportive of FIS, and we heard about or saw examples of staff modelling healthy behaviours and reinforcing key health-related messages in their classrooms, and during assemblies or break times. Similarly, staff and parents reported that most parents/whänau were also supportive of their approaches. One key reason for this was that their children were driving change through the messages they brought home.

Whole-school approaches to curriculum planning and teacher practice

Most of the schools had a whole-school umbrella approach to curriculum planning. This supported the four FIS health areas to become more embedded in the curriculum. Some schools organised inquiry units or environmental projects connected to the health areas. Others had year-long themes that incorporated these areas. Some schools that did not have a whole-school approach were working towards similar overviews. Teachers at a number of the schools thought that FIS was assisting in raising the status of the Health and PE curriculum.

Some schools had a focus on student-centred practice, and this underpinned their implementation of FIS. At these schools there was an emphasis on student ownership over learning, and students were taking a lead role in designing or implementing initiatives related to FIS. The students who were part of health teams or environmental projects were being supported to use health promotion or action competence learning processes. The work of health teams, although connected to classroom foci, tended to be located outside the curriculum, and involve small numbers of students. The Health and PE curriculum, and the inquiry approaches that are commonly used in schools, offer staff the scope to use action competence processes for the purposes of health promotion within the curriculum. In general, schools had yet to take full advantage of this, and many curriculum foci and actions appeared to be driven by teachers rather than students or the community. An exception to this was the environmental initiatives that are connected to FIS. These initiatives tended to be located within the curriculum and involved a larger proportion of students in active decision-making roles. Perhaps one of the reasons why these models appear to sit well with FIS was because they offered obvious opportunities for a larger number of students to be involved.

The literature suggests that involving students more in decision making about their learning is a factor that supports change (Boyd et al., 2005; Hargreaves et al., 1996). A number of staff noted they would be exploring further ways to do this in 2007.

Health focus areas

School staff perceived the gift of fruit to have set up a partnership with the Ministry of Health, and they were enthusiastic about fulfilling their side of the bargain. This gift had modelled a practical action-orientated approach towards addressing health concerns, which the schools had extended. In 2006, all six schools had taken advantage of the learning opportunities associated with the free fruit to initiate a whole-school focus on healthy eating. All had a related focus on physical activity, and were making a variety of changes on different levels of the school system connected to these two areas. Common approaches to healthy eating included: changing the food students ate at school through initiating healthy lunch box schemes, or changing canteen options or the food offered at class celebrations or school events; working towards Heartbeat awards; and organising community health expos or events that promoted health messages. These activities sat

alongside curriculum activities that explored healthy lifestyle choices and environmental education.

Common approaches to physical activity included increasing the opportunities students had to be active during school and break times, introducing students and the parent/whänau community to a wider range of physical activities, exploring how physical activity was connected to wellbeing, and redesigning school playgrounds or getting more equipment to support a wider range of types of physical activity. Staff and students at some schools had attended Active Schools PD and were using the Active Schools tool kit; other schools employed a physical activity co-ordinator to upskill staff or work with students.

Most schools were also addressing sunsmart policies and practices. Common approaches included enforcing or developing sunhat and sunscreen policies, discussing sunsmart behaviours in the classroom, and exploring options for increasing shade at school or during school events.

Most of the schools had not addressed the smokefree area in 2006. There was a sense of "we already do that" with staff noting that schools are required by legislation to be smokefree. This highlights a misunderstanding about the smokefree aspect of FIS, which is also about reducing smoking initiation. Most schools had programmes for senior students that addressed smoking within units on areas such as puberty. Some staff did not consider smoking to be an issue for young students. Most were planning to review their approaches to smokefree in 2007.

Forming connections to support FIS

One of the premises of FIS is that it will facilitate increased access to agency partners, community groups, and parents/whänau, and that these people will work with schools to improve their initiatives.

Making connections with agency partners

Most school leaders and lead teachers were finding the connections with the agency partners facilitated through FIS to be invaluable. As a result, a number of the schools had strengthened their existing partnerships with health and dental nurses, and within a short period of time, had formed productive new partnerships with their FISC, representatives from SPARC and regional sports trusts, the National Heart Foundation, or the Cancer Society. Other schools were using their own resources to design initiatives, and relied less on agency partners. A number of schools were making links with local council or community groups, iwi, or businesses to support FIS. The literature notes that collaborations such as these with the wider community are likely to support change (Boyd et al., 2005; Hargreaves et al., 1996), and this certainly appeared to be the case at most of the schools.

Clustering and professional development

Most school leaders and lead teachers were also finding the connections with other schools, facilitated through their FIS cluster, to be valuable networking. At these cluster meetings they gained information, ideas, and resources. Lead teachers noted that they were formally or informally spreading these messages and resources to their colleagues. Despite this, a number of the classroom teachers we talked to did not perceive themselves to have ready access to PD or networking opportunities to support their practice. Most were aware of the ideas about lifelong learning that underpins FIS, but did not appear to have an overview of how the HPS process intersects with the curriculum, and were looking for new ideas about how to integrate the FIS health areas into the curriculum.

Through FIS, teachers at some of the schools had attended whole-school PD provided by an agency partner. Active Schools was a common example of this. These sessions were supporting teachers to make changes and encouraging them to give more decision-making power to students. Some staff suggested there was a need for whole-school PD about curriculum approaches and further ways to empower students. These suggestions align with the literature on PD. An ongoing whole-school or team approach is widely used in NZ schools because it has been shown to be more successful in promoting sustainability in the long term (Burt & Davison, 1998; Scott & Murrow, 1998). This, along with clustering, is the model used for most of the recent school PD contracts in literacy, numeracy, and ICTPD. It is likely that the staff at FIS schools would benefit from such an approach.

Making connections with parents/whänau

Most schools regularly consulted their parent/whänau community about their school focus on health and wellbeing, either by survey or at meetings. Some schools had specific processes for consulting with Mäori or Pasifika parents/whänau such as hui at local marae or meetings in parents' homes.

All schools were using a variety of avenues to communicate health-related messages to parents/whänau. Most common was sending home messages in school newsletters to encourage buy-in to school activities such as healthy lunch box initiatives. Another common strategy was encouraging parents/whänau to take part in events during which FIS messages were shared. These included health expos, physical activity events, celebrations of students' learning, or home–school partnership meetings. These activities tended to be focused around information provision, encouraging behaviour change, and setting up situations in which school staff, students, and parents/whänau could model healthy behaviours together. Most schools were also using their connections with local early childhood providers, and intermediate and secondary schools to spread health-related messages.

A range of already proven strategies was used to encourage parents/whänau to attend school events. Common strategies included offering incentives and food, sending home more than one

message about events, personalising invitations, ensuring that all events included students performing or sharing their work, and organising events at times that suited working parents.

Most schools had a small core group of parents/whänau who took a lead role in FIS- and non-FIS-related school activities. For example, a few parents/whänau were members of school health teams, others ran breakfast or canteen clubs and worked with school staff and students to change the menus, and some assisted in event organisation, fundraising, or working bees. Staff and parents/whänau reported that the health priority area that received the most support was physical activity, as a number of parents/whänau supported and coached school sports or attended physical activity events. Most schools also had a group of parents/whänau who came to events if their child was involved, as well as a group with whom they had more difficulty forming connections. Staff at most of the schools noted they would like to develop new ways to form partnerships with these parents/whänau.

Student views

Nearly all the students to whom we talked enjoyed, and felt they learnt from, all school activities relating to health and wellbeing. All were extremely enthusiastic about the free fruit they were receiving as part of FIS, and the benefits of this for their health. They reported that other students also loved the fruit, and over time the number of dissenters had dwindled to virtually none. They considered the purpose of learning about the four health areas was to support them to learn how to make healthy choices and take action in their lives, indicating that they clearly understood that FIS was about lifelong learning and not "just about the fruit". The majority felt empowered by at least some of the health-related activities in which they were engaging at school, and were trying to model healthy behaviours and make changes at school and at home in relation to the four FIS areas. Students attributed recent changes in their healthy eating, physical activity, and sun protection behaviours to activities initiated by their schools. In contrast, they reported they had not learnt much about staying smokefree at school, and their views and behaviours about this component of FIS were shaped by a mix of home and school messages, Life Education Trust bus visits, and TV campaigns.

The activities students most often linked with behaviour changes were those that required them to take action as well as "learn about" an area. These "action" activities could be divided into two groups. One group contained actions that are "done to" students, for example, healthy lunch box initiatives and sunsmart rules. In the other group were activities that were "done by" or led by students, for example, making decisions with a school health team, being an Active Schools games leader, and managing fruit distribution or environmental projects. These latter activities were cited as the most engaging and powerful. Unlike the activities that were "done to" students, these had the added benefit of supporting students to develop a wider range of competencies that may well support longer term change, such as critical thinking, teamwork, planning, or leadership skills.

Sustainability

At all of the schools, the focus on the four health areas and the support provided to schools was encouraging practices that were likely to be self-sustaining. Policies and procedures relating to the four health areas had been developed or reactivated and were becoming more embedded in the culture of each school. FIS had also supported an increased focus on the three of the four health areas within the curriculum.

There was universal support for the continued provision of fruit by students, parents/whänau, teachers, and principals. Most principals had not yet developed detailed plans about how to sustain this after the funding ceases. Most hoped the government would continue funding in some form and that the parent/whänau community would take ownership. A number of principals had tentative plans to approach local suppliers or businesses for sponsorship. Some were considering avenues such as developing school gardens or fundraising.

Where to next?

Prior to FIS, these six schools already had student health and wellbeing squarely on their agenda. FIS provided an extra level of support and the flexibility for staff to grow and strengthen initiatives that suited their school context and community. The school staff, students, and parents/whänau we talked to all considered that, as a result of FIS, their whole school community was more actively modelling and promoting healthy choices.

Using the lens of the HPS framework (as shown in Figure 2) to broadly categorise the changes that were occurring at the schools, all had put in place a wide range of initiatives that addressed "school organisation and environment". All were also addressing "community links and partnerships" by forming partnerships with health promoters and by encouraging parents/whänau to participate in school-driven initiatives and events. By increasing the emphasis placed on the FIS health areas within the curriculum, all were also addressing: "curriculum, teaching, and learning". The information we collected suggests that these curriculum approaches could be enhanced by some form of PD that encourages teachers to see the commonality between the HPS process and the intent of the curriculum. This could support teachers to design health promotion activities that would more actively involve students and parents/whänau in setting directions and working together. Such an approach would enable schools to more fully address all three levels of the HPS framework.

5. National and regional interagency perspectives

Introduction to the interagency stakeholder interviews

This section of the report presents a thematic analysis of feedback from 27 stakeholders, representing key organisations involved in the governance and implementation of FIS nationally and regionally. The information was collected at the end of 2006 and in January 2007. The interviews covered stakeholders' roles in FIS and whether these had changed, their expectations of FIS, progress and challenges, and areas of good practice. This summary draws on the information gleaned during the first round of interviews as summarised in the interim reports (King & Boyd, 2006; King et al., 2006) but primarily summarises the information collected during the most recent interviews.

National interagency stakeholder perspectives

At the end of 2006 and in early 2007, a total of 10 stakeholders were interviewed across five national agencies (Ministry of Health, Ministry of Education, SPARC, Cancer Society, National Heart Foundation). Similar to their position in early 2006, overall, these stakeholders viewed FIS as a successful and positive initiative. They considered that the implementation of FIS was progressing well, that FIS was well aligned with their programmes and that it was continuing to strengthen interagency relationships and collaboration both nationally and regionally.

Strengthening relationships

As has been reported previously (King & Boyd, 2006), the interagency approach has been instrumental in strengthening existing interagency relationships and developing new ones, especially where relationships have been formalised (e.g., through arrangements such as the Tripartite Agreement between the Ministry of Health, Ministry of Education, and SPARC) and in regions where there were existing relationships and trust to build upon.

There was a widespread view that the interagency approach fosters "a shared commitment to bigger outcomes" and allows the regional steering groups to provide a comprehensive multilayered initiative (a whole-school and community approach integrated with the curriculum)

that makes use of the collective expertise of the participating agencies. It also promotes greater understanding of the challenges faced by the different agencies.

National stakeholders considered that agencies' goals seem relatively well aligned or are becoming better aligned through joint work on FIS. Generally, stakeholders see strong synergies between their organisations' individual goals and FIS goals, and see their work being strengthened through FIS and the cohesive interagency work that it fosters.

Supporting agencies to work with schools

National stakeholders considered that the interagency collaboration, promoted through FIS, has enabled regional steering groups to provide a more coherent package of support to schools. It also enhances the ability of the key agencies to deliver their own health promotion messages and programmes in schools. For example, engaging low-decile schools has historically been a challenge for health promoters. FIS has been very successful in engaging these schools and this is bringing flow-on benefits in the uptake of related programmes. The National Heart Foundation has had increased uptake of all of its programmes from low-decile schools, and the number of kura kaupapa Mäori participating in the School Food Programme has increased.

Keeping the momentum going

National stakeholders identified some important challenges for FIS moving forward, and these are discussed in the following paragraphs. It was widely considered that FIS has passed a watershed, with important changes occurring in the way the initiative works nationally and regionally. From late 2006, DHBs have taken an increasing role in the oversight of FIS, with HEHA co-ordinators having responsibility for FIS in their respective regions. The health promotion landscape in schools has changed with the introduction of Mission-On which, among other things, makes schools more accountable for having and implementing school nutrition policies. At the same time, with the implementation of Phase 3 of FIS, the number of schools in FIS has more than doubled. Together, these changes will impact on the way the agencies involved in FIS work, both together and individually.

Possible impacts of increased DHB role in the oversight of FIS

The increased oversight of FIS by DHBs is, in some respects, not a major change. FISC are employed by DHBs and continue to be the core facilitators of FIS in each region, so the interagency groups should be able to conduct "business as usual". Several stakeholders expressed confidence in the expertise and experience of public health units working with schools, and believed DHBs have the infrastructure to be able to deliver FIS well. It was hoped that the increased DHB role would increase regional ownership of FIS.

However, there were some concerns about the possible impacts of the increased DHB role on national consistency, interagency collaboration, and keeping up the momentum that FIS has successfully gained to date.

All of the stakeholders interviewed considered it very important to have consistency as well as the ability to regionalise appropriately. National co-ordination and communication of FIS has enhanced its consistency and cost effectiveness and helped to enable the sharing of good practice. "FIS is a national programme and it needs to have a national flavour." The increased oversight of FIS by DHBs is seen as a potential risk to the ongoing national consistency of FIS.

Some stakeholders were concerned that the new arrangements might weaken interagency collaboration at the national level, reducing their ability to filter change through to the regions. Stakeholders considered that any reduction in national consistency could also impact adversely on the ability to influence FIS at a national level, as it could make it more difficult for national agencies to make connections and manage relationships effectively at a regional level.

At regional level, HEHA co-ordinators have the oversight of all HEHA initiatives in each region, including FIS. This is positive in that it connects FIS into the broader context of health promotion initiatives in schools, to ensure the various initiatives work together in a complementary way. However, it has caused some stakeholders to wonder whether FIS will be "swamped" by the wider suite of priorities and initiatives under the HEHA umbrella—especially aspects such as smokefree and sunsmart because they are not as directly relevant to HEHA as healthy eating and physical activity. It was also recognised that the new structures would take time to bed in, and that this also represents a risk to the momentum of FIS.

Relation between FIS and Mission-On

Stakeholders were very positive about Mission-On and its potential to promote healthy behaviours in school students. It is also widening the interagency approach with further agencies such as Youth Affairs becoming involved.

They also noted that the implementation of Mission-On brings complexity and challenges for FIS as it may increase demand for programmes such as the School Food Programme and exacerbate existing capacity issues, while at the same time reducing demand in the FIS areas of sunsmart and smokefree, which are already lagging behind healthy eating and physical activity in terms of their uptake. There are also concerns that Mission-On will require input from School Support Services in the area of policies and practices, diverting them further away from providing curriculum support to FIS schools. This appears to be a very real concern given that School Support Services is already less likely than other providers to be working in schools, and the survey data show that school staff would like more support in integrating the health areas into the curriculum.

It was recognised that organisations already working with schools in the area of healthy eating will need to review the way they work collectively to ensure services are complementary and do not overwhelm schools.

Delivering FIS in Mäori and Pasifika communities

The need for a greater involvement in FIS by a wider range of stakeholders is recognised at both a national and regional level. FIS has supported a growing sector-wide awareness of the need to prioritise Mäori and Pasifika students' needs, to work with Mäori and Pasifika communities, and provide resources tailored to these groups. For example, SPARC is considering how to better target and support Mäori medium schools, and School Support Services advisers have been working with their colleagues in the Mäori immersion/kura sector to improve their own practices in mainstream schools.

However, stakeholders noted there is a long way to go. As one remarked, there is a relative "lack of involvement in the structure, process, and substance of FIS by non-Päkehä". The key national agencies are often perceived to be predominantly "white organisations". For example, FIS resources are produced in English and, in the main, have not been translated. The need for culturally-specific resources is recognised and is on the agenda at a national level. Some of the interagency resources (such as the School Food Programme) are available in te reo Mäori, and some FIS resources have been translated locally.

The challenges in this area are significant because the issues relate not only to language but equally to cultural mores ("How do you translate a cultural imperative?") and to generating ownership of FIS by Mäori and Pasifika communities ("Does this include me or is it being done to me?"). This issue may require further policy work at a national level, with a focus on the sharing of resources and accountability for FIS with Mäori and Pasifika organisations.

It was also suggested that regional workers need to be upskilled in working in Mäori medium contexts and there was a need for national and regional acknowledgement that interagency groups "have to do a better job of supporting Mäori and Pasifika students and communities".

Phase 3 implementation and sector capacity

Overall, it was considered that the implementation of Phase 3 of FIS went more smoothly than the previous phases:

> The systems and processes for FIS are now in place, and the FISC know what they're doing.

The workforce for Phase 3 is in place and approximately 90 percent of these people attended the 2006 national hui. It is expected that the new FISC will learn from the skills and experiences of their Phases 1 and 2 colleagues.

One of the greatest challenges in Phase 3 stems from its sheer size. This caused initial and ongoing concerns about the capacity of agencies to meet the needs of the Phase 3 schools. The increase was particularly marked for a handful of regions such as Counties-Manukau, where the total number of participating schools grew from nine to 27. Despite strong concerns expressed at the start, and the tight time frame for implementation, the agencies showed an impressive level of goodwill and the successful implementation of Phase 3 to date is testament to the effectiveness of the leadership within these organisations and the collaboration between them.

While the interagency groups successfully catered to the needs of Phases 1 and 2 schools, stakeholders continue to have concerns about their capacity to deliver the same level of support in Phase 3 at their current staffing levels. This is a common theme across the NGO stakeholders, with one stakeholder commenting, "We will not be supporting all schools in Phase 3—we just can't."

The high demand by schools for assistance with healthy eating and physical activity has created pressures that are particularly marked for the National Heart Foundation, and for sports trusts in some regions. The demand for support for sunsmart and smokefree, and the resultant impact for the Cancer Society, was not yet known at the time the interviews were conducted.

Most stakeholders considered that School Support Services does not have the resources to support FIS, as its focus centres around in-depth models of PD for all schools. Ministry of Education priorities have centred on Mission-On. In 2007, School Support Services providers have a new contract output and time set aside for providing support to schools around the new food and nutrition guidelines. It is expected that requests in the physical activity area will drop off as Mission-On and any new regulations take precedence. It was suggested that School Support Services needs to embed FIS into its vision and goals related to key focus areas such as curriculum practice and school leadership and governance.

To address capacity issues, the National Heart Foundation and Cancer Society are considering, in discussion with the Ministry of Health, the use of train-the-trainer approaches. Over time this should create a larger pool of people with nutrition or sunsmart knowledge.

It was also suggested that some of the pressure on interagency partners could be relieved by upskilling FISC to provide schools with more information on the agencies' individual programmes. Using this approach, the individual agencies would retain responsibility for their individual programmes but the FISC would be better equipped to field basic enquiries in relation to the programmes.[68]

One stakeholder suggested a further strategy to mitigate capacity-related issues. This was the provision of additional FIS funding for national agencies to provide flexible resourcing in areas of high demand or high need.

Uneven balance in the four health areas

The capacity issue is exacerbated by the uneven uptake of the four health areas, with the majority of schools choosing to focus initially on healthy eating and/or physical activity. As mentioned earlier, Mission-On may further skew demand toward healthy eating.

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[68] As FISC are funded at a ratio of one FTE FISC per 10 schools, it was argued that FISC are better resourced than the individual agencies to deal with "smaller" issues as they arise.

A possible strategy to manage this issue would be for interagency groups to actively manage the expectations of schools about the level of assistance available to them, given the balance of demand and available FTE from the interagency partners. Schools could be encouraged to prioritise the order in which they take up the four areas to achieve a more workable balance within each cluster. Although it is up to schools to identify their needs, there should be room for negotiation with the interagency group in this process.

Patch protection

One of the key successes of FIS to date has been the strengthening of interagency collaboration at both national and regional levels. However, some tensions and patch protection remain within a few regional interagency groups, as reported previously (King & Boyd, 2006). Each agency has its own output targets to meet, so an element of competition is unsurprising. However, this barrier has been successfully overcome in a number of regions and could be an area where FISC could learn from successful strategies used by their counterparts in other regions.

Some stakeholders saw greater potential for patch protection as DHBs take increased responsibility for the oversight of FIS, with a risk that some DHBs might not "look across the sector" to connect with interagency partners. It was feared that it might require a lot of work to ensure continuation of the interagency approach, and that this would require strong leadership from the DHBs, which may not be forthcoming.

Sustainability

Stakeholders identified supports and processes needed for long-term sustainability of FIS. As an overarching comment, stakeholders pointed out that it is still early days for FIS. While it is seen as an excellent initiative, there are concerns for it to achieve sustainable best practice in the four health areas going forward. Although already discussed, it is important to re-emphasise here the importance of sector capacity for the sustainability of FIS. Another key factor behind the sustainability of FIS at all levels is the depth of enthusiasm, commitment, and goodwill from all participating parties and it is recognised that maintaining this will be a challenge. A thematic summary of the success factors national representatives considered necessary for longer term sustainability is presented below. Issues are presented at three levels: schools, regional, and national.

Schools

Success factors for schools include the whole-school and community approach, support for FIS from school leaders, involvement of teachers, building FIS into quality teaching and learning programmes, and sharing of good practice.

National stakeholders identified several additional supports and processes required for sustainability including: assisting schools and their communities to move beyond the fruit

provision to consider the deeper issues in the four health areas; ensuring whole and consistent school buy-in to HPS and FIS; and planning for fruit sustainability.

Many stakeholders commented on the need to ensure whole and consistent school buy-in to FIS and HPS. It was suggested that the prerequisites to achieving whole-school buy-in include: strong leadership within the school; the willingness and commitment of the board of trustees, principal, teachers, families/whänau, and students to engage with and own FIS; and systems for spreading practice to the whole school (including whole-school PD). Engagement of parents/whänau and students ("the most dynamic change agent we have") was viewed as vital. It was also considered important to recognise that communities develop at different speeds and that the changes need to go at the pace of the community.

One stakeholder suggested that the current approach to FIS was too "top-down" and was therefore not as effective as it could be in securing whole-school commitment:

> The political drive to reducing inequalities results in the model not being focused enough on empowering schools and health promotion. This is not good practice. Evidence suggests that in working with schools it is necessary to get the commitment of the school, otherwise the initiative will not work.

Many stakeholders expressed doubts as to whether it will be viable for low-decile schools/communities to self-sustain the fruit provision after the initial three-year period. Some stakeholders argued that the Ministry of Health needed to develop a clearer position with a longer time frame and graduated withdrawal of fruit provision to encourage schools to work toward total school ownership. Taking a different view, others saw the current model for fruit provision as disenfranchising, removing ownership from schools rather than modelling a health promotion approach.

Regional

Stakeholders highlighted key success factors for FIS, including the collaborative interagency approach at both the national and regional levels, together with open transparent communications, and national hui for FISC and regional interagency staff to ensure broader sharing of knowledge and good practice, developing linkages and fostering a common and robust understanding of FIS.

Additionally, the tripartite partners (Ministry of Health, Ministry of Education, and SPARC) are collaborating to enhance the regional infrastructure to support schools to access a range of agencies through FIS. These agencies have brought regional staff together for four days to discuss collaboration. There is an expectation that the new HEHA project managers should support regional co-ordination at management level, and through co-ordinating the schools sector groups with FISC, School Support Services, and sports trusts.

Whilst very positive about the success of FIS in enhancing interagency collaboration at the regional level and improving the co-ordination of services to schools by the different agencies, stakeholders commonly saw room for improving the effectiveness of the interagency groups in

supporting schools to make concerted changes in the four health areas. In the words of one stakeholder:

> Currently agencies are issues-based not settings-based, so they are providing a support structure… and getting schools to deliver. They need to shift to see how they can support the school setting.

Another national stakeholder raised questions about the effectiveness of the interagency process based on direct experience in one of the regions:

> The interagency meetings never seem to go anywhere or be about anything… [they are] more about updating what's going on rather than discussing and resolving issues like capacity—they should be discussing how we can work smarter together to make this happen.

Other stakeholders made similar comments, noting that although a lot of progress has been made in working together in a unified way, further work could be done to foster a more cohesive approach which interlocked the four health areas. These comments indicate that national stakeholders see a need for their workforce to shift their practice from a medical "information delivery" model towards an "empowerment" model. Suggestions for areas that could be addressed included:

- engaging in problem-solving between FISC, their managers, and interagency groups
- developing processes, self-monitoring systems, and contractual arrangements that support interagency collaboration and that highlight interagency partners' responsibilities to schools
- better facilitation and brokerage of linkages with health promoters and community providers to provide schools with support in the four areas
- establishing partnerships with local Māori and Pasifika community leaders/agencies, and relevant national agencies such as Te Puni Kōkiri and the Ministry of Pacific Island Affairs, which can support communities to achieve sustainable change
- providing "more support for schools in the hard tasks" such as finding ways to work with parent/whānau communities.

National

Two key supports were identified at a national level to ensure the sustainability of FIS: national consistency; and a continued and more hands-on role for a national interagency reference group. These themes are discussed above in the context of the changing FIS environment, and are briefly covered here in terms of stakeholders' views about requirements for sustainability.

To promote national consistency, it was argued that there is an ongoing need for a national co-ordination and communication role within the Ministry of Health, to "work on communicating a strong vision of what is required for success in FIS".

There is an important role for national offices to continue supporting consistency alongside DHBs as they take increased responsibility for the oversight of FIS within their respective regions. The models developed by other agencies may be helpful here. The Ministry of Education has several

national co-ordinators to fulfil this role. For example, a national co-ordinator for physical activity visits the regions to ensure consistency of practice across sites. The Ministry of Education developed this process after finding it effective for the Mentally-Healthy Schools contract.

Stakeholders were clear that there needs to be some form of national steering group (whether the current group or a different one) to support consistency of philosophy and practice, sharing of good practice, and develop responses to evaluation findings and recommendations. Moreover, it was considered that this group should be given a greater stake in FIS and the mandate to problem solve. As one stakeholder said:

> We are more into a solidifying phase but there are still considerable issues that need to be worked through and [the External Reference Group] should have a role in this.

Regional interagency perspectives

In late 2006 and early 2007, interviews were conducted with 17 regional stakeholders including a sample of Phase 1 and Phase 2 FISC, and agency representatives from two regional steering groups (including the Cancer Society, the National Heart Foundation, regional sports trusts, public health nurses, and School Support Services).

Interviews conducted with regional stakeholders at the end of 2005 (King et al., 2006) and mid-2006 (King & Boyd, 2006) revealed a number of themes, which were echoed in the most recent round of interviews. The following section provides an overview of these themes and is followed by a more detailed presentation of findings from the most recent interviews, including stakeholders' reports on: the evolving nature of FIS and FISC roles; leadership; the FIS model; progress and challenges; areas of good practice; and looking ahead to sustainability.

From the perspective of the various agency stakeholders, FIS is a very promising initiative that enjoys widespread support from the schools and communities involved. Although still in its early stages, regional stakeholders reported that FIS is showing positive outcomes in terms of stronger interagency relationships and better co-ordination of services to schools, as well as some early indications of positive changes among schools and students.

Overview of prior evaluation findings

Overall, both FISC and agency partners considered that the implementation of FIS has been progressing well. The principles underlying FIS were perceived to be sound, and stakeholders were strongly committed to achieving its aims as they recognised the potential for long-term benefits from their work with schools. The collaborative interagency model was widely lauded as both a key benefit and key success factor of FIS, and it was reported that school managers, teachers, and students alike strongly supported the initiative.

In general, regional stakeholders demonstrated a strong awareness of the strategic directions, principles, and intentions underpinning FIS, including:

- a "big picture focus on cancer control" in the four health areas
- an aim to "achieve culture shift among kids" that will lead them to sustain healthier lifestyles and, ultimately, improved health
- a strong collaborative focus, with agencies pursuing shared outcomes and "working together to offer more coherent services to schools"
- use of the HPS whole-school community approach, including an emphasis on student empowerment, teaching and learning, and the development of school-community links (and the use of FIS as a means of introducing the HPS framework into further schools)
- the use of free fruit as an incentive for participation in the initiative
- a focus on making FIS sustainable.

Overall, stakeholders expected that the use of these principles would lead to positive changes for students as well as families/whänau, schools, and the wider community. For example, it was felt that by providing practical and tangible resources (e.g., fruit) as well as opportunities for education and empowerment (such as lifelong learning skills), FIS will help to benefit the health of children in the short and long term. Furthermore, there was the broad view that through FIS and associated initiatives, health promotion will become an integral part of school culture. With the use of the HPS framework and processes, this should extend to families, whänau, and communities.

Stakeholders uniformly reported that FIS had succeeded in engaging schools at least in the first steps of FIS by "entrenching fruit" in day-to-day school life. The enthusiasm of stakeholders extended to the potential of FIS to achieve some of the broader aims within the four health areas and to transform schools in the longer term. However, a number of FIS stakeholders also believed that FIS was more of a concrete lever to push transformational HPS approaches, and in this sense was only "one piece of the pie" of a larger framework for change.

Key positive spinoffs of FIS noted in each round of interviews have been the increase in interagency synergies and a reduction in "patch protection" between agencies with overlapping roles. However, as also mentioned by national stakeholders, some rivalries have remained and these hamper the effectiveness of FIS.

The evolving nature of FIS and FISC roles

Stakeholders reported that FIS is an evolving process and that different regions are implementing different aspects of FIS at different rates. For example, some regions have well-developed systems for interagency collaboration already in place, while others are developing or need to develop these mechanisms. In a parallel fashion, the rates at which schools have initiated policy change in each of the four areas has been dependent upon their starting points; for example, whether a school was using an HPS framework prior to FIS. Over time, FIS stakeholders at the

regional level have gained a better understanding of their roles within the initiative, and the direction they need to take in order to assist schools to make sustainable changes. Importantly, agency partners were beginning to see where their roles may overlap, or where they may integrate or co-ordinate learning activities; for example, combining sunsmart activities at outdoor physical activity days. This understanding has led to better implementation of FIS activities in many regions where capacity or resources of agency staff has been limited.

Overall, with the new Phase 3 FISC coming on board, and with systems and relationships mostly in place, workload pressures on Phases 1 and 2 FISC, which were initially high, have eased somewhat. However, there were some variations reported by FISC depending on factors such as whether they work across FIS phases and the size of the school clusters they support. For example, one FISC, with a smaller number of schools, described how their role had shifted over time, from building a relationship base in the schools and starting with fruit in Phase 1, to taking a strategic approach tailored to schools' priorities and addressing schools' interests in the four health areas in Phase 2. In contrast, another FISC talked about a less strategic evolution in their role. Initially this FISC had to sign up a large number of FIS schools for Phase 1 in a matter of days without opportunity to build a foundation. As new FIS phases started, they subsequently added more schools, with no staff to help. As such, their job had become "a frantic scramble".

Nevertheless, FISC continue to report their core roles as facilitating cluster collaboration and co-ordination for PD and other supports to schools. Although some FISC indicated that a better understanding of the broader framework of FIS by the DHBs would contribute to the success of the initiative and its sustainability, FISC generally felt well supported in their roles at the regional level and indicated that they have enough time to fulfil their obligations, although this was not the case for all (i.e., for those who have had a large increase in the number of schools from Phase 2 to Phase 3).

Some FISC expressed indirect concern about the increased role of DHBs in the oversight of FIS and how this would impact on the longevity of FIS. Their concern came not from a perceived lack of DHB support for FIS, but from a perceived lack of awareness on the part of DHB representatives as to what the initiative actually represents, and what it aims to do. Some stakeholders felt that increased information, specifically targeted at DHB leaders, would mitigate these risks.

The FIS model

A number of regional stakeholders said one of the key success factors of FIS was being able to work at the pace of each school. Taking a "from the ground" approach, many FISC saw that an important part of the implementation of FIS was to be able to work with the schools starting from "where they're at" and to be realistic about the length of time needed to truly shift not just school policy, but practice. Furthermore, by working with schools' timeframes it was thought that change would become more sustainable than if all changes were made through "top-down" approaches.

A key issue raised by a number of stakeholders related to the competing models that drive HPS and FIS. HPS is a whole-school model, and although FIS is centred within this larger framework and is intended to follow a whole-school approach, its emphasis on four pre-selected health areas and the use of a lead-teacher PD model makes it more "top-down". Some perceived this to be at odds with the HPS process. It was suggested that, to be truly effective, FIS needs to adopt a whole-school PD model. This would ease the burden on lead teachers who are reported to have little time to manage the workload that successful implementation of FIS entails.

Although some stakeholders felt that FIS and HPS were based on "competing models", they also suggested that those schools that were using the HPS framework prior to joining FIS had an easier time adjusting and implementing initiatives in the four areas. For example, they were likely to have pre-existing school clusters or school policies in the health priority areas. At the same time, FIS was viewed as an important catalyst for increasing the emphasis on the HPS model in schools and in providing "real direction" for schools in setting health-related goals.

Leadership

Almost unanimously, stakeholders indicated that the success of FIS was driven by key leaders at all levels of its implementation (i.e., school, regional, national). At the school level, stakeholders reported that FIS was driven by school managers (i.e., the lead teacher and/or principal). The existence of school staff who were in a position to drive the initiative, and who did so with passion and commitment, was a key factor in the speed and success with which FIS was implemented. Similarly, the importance of FISC as regional drivers of the initiative was highlighted by agency partners who acknowledged the necessity of leadership and co-ordination that FISC provide in order to promote and maintain the success of the initiative.

National drivers of FIS have also been highlighted as key to the initiative's success. Particularly, the role of national co-ordinator was identified as being "huge" in terms of the ongoing rollout of the initiative and its continued maintenance. Stakeholders were concerned that this role may be disestablished and that this would impact negatively on FIS. As one respondent put it, "Without a leader, our journey will go in different ways." Stakeholders also felt that the Ministry of Education could contribute more to FIS. It was suggested that the Ministry of Education needed to do more work creating buy-in and leading the direction of FIS. Stakeholders noted that until this occurs, FIS had the potential to "…stay health-driven and separate from the schools".

Progress and challenges

Expectations of FIS

Almost all stakeholders described FIS as going "really well" and even "taking off like a rocket". Much of the momentum came from schools' initial interest in the "fruit phase" of FIS. This interest was bolstered at some schools by anecdotal reports that children's behaviour and health

had improved. In many cases, initially sceptical school staff developed an enthusiasm for FIS once they witnessed the benefits of the initiative.

FISC suggested that this initial scepticism may have come from unrealistic expectations or impressions of FIS that some schools had when they first signed on to the initiative. For example, some schools understood that they would receive fruit, but did not fully understand or consider their obligations in developing school policy and practices in the four priority areas. Other schools were reported to have understood these requirements, but were worried about the extra burden that changing school practices in the four areas could entail:

> …once there is commitment, it feels like work…schools get overwhelmed by the number of projects that they're asked to take on and tend to put things off for as long as possible.

However, stakeholders' reports indicate that these perceptions of FIS have changed over the course of the rollout as awareness of the initiative grows and there are more realistic expectations and flexible approaches to its implementation (i.e., working at each school's pace).

Regional steering groups

All stakeholders noted the benefits of the regional collaborations that have stemmed from FIS. They found regional meetings to be productive in building motivation and sharing information, challenges, and solutions for common problems. Additionally, stronger partnerships across agencies have been created, and there is greater awareness of each other's roles and awareness of what agencies are able to contribute to the initiative. In some regions, particularly those that are rural, distance is a limiting factor to attendance at meetings for both school and agency partners. One respondent noted that although regional meetings are valuable, there isn't systematic reflection time on earlier work (e.g., Phase 1) to generate lessons learnt or for functioning as a learning organisation.

Capacity

Regional stakeholders echoed the concerns expressed by their national counterparts about capacity to support FIS, especially with the addition of Phase 3 schools, and indicated that capacity issues were "diminishing the goodwill" of agencies. For many agency representatives, FIS is only one of their priorities and their other initiatives, although generally well aligned with FIS in terms of objectives, are often delivered to different schools which reduces the potential for overlapping processes. As one stakeholder indicated:

> …it is difficult to find the time to visit all the schools…I can't focus my time just on FIS as there are other schools looking for information.

This particular interviewee worked with 95 schools, and noted there was often not the opportunity to visit each on more than one occasion. Many regional stakeholders reported that schools expect more support, resources, or PD than can actually be delivered by key agencies. Agency partners

felt that this issue of capacity would best be addressed by funding staff who are dedicated only to FIS.

Stakeholders noted that the smokefree priority area suffers from having no dedicated smokefree co-ordinator on some regional steering groups, and despite being a shared priority among all agencies, has lagged behind the other three areas. They also commented on the lack of regional capacity of School Support Services to support schools and considered this was necessary to assist schools to integrate the health areas into the curriculum.

Staff turnover was another issue, highlighting the need for continuing PD catering for the different experience levels of agency partners. In addition, both FISC and agency staff highlighted the need for teaching resources that are practical and which have been developed specifically to make links to the curriculum.

Meeting the needs of Mäori and Pasifika communities

Regional stakeholders echoed their national counterparts in noting that there was a need to increase Mäori, Pasifika, and community group representation on regional steering groups. For example, one stakeholder reported that there was little Mäori input at the regional level. They believed this to happen more at the school level however. Regional stakeholders also recognised the need for better means to engage with Mäori and Pasifika communities. For example, one FISC noted a lack of FIS teaching resources in teo reo Mäori, and limits on translation. These views echo those expressed in work by Jenkins (1999) about the Mäori component of HPS. Regional (and national) stakeholders' comments suggest there is a need to further develop processes to ensure active Mäori representation at all levels of the initiative, from regional representation and co-ordination, to the provision of culturally appropriate resources and consultation strategies.

Despite some limitations on meeting the needs of Mäori and Pasifika communities, stakeholders provided some examples of effective strategies. For example, one regional stakeholder described how community engagement had been increased through the employment of a Mäori fieldworker with community development experience. This worker focused on engaging school communities in a rural area with a high Mäori population, prior to the rollout of Phase 3.

Connecting to families/whänau and the community

Stakeholders considered that forging connections with parents/whänau was an aspect of FIS (and the HPS framework) that needed more development and support. Although some FISC noted that there was some parental involvement at interagency meetings, for the most part it was noted that "schools aren't saying a lot about it [parent/whänau involvement]". Some schools were connecting with their parent/whänau community through successful whole-school activity days, community newsletters, or by inviting parents to support school-wide lunch initiatives. Additionally, in some regions, community members have been invited to attend cluster meetings

and to discuss possible directions for FIS (e.g., at one cluster group a fruit supplier was invited to discuss how to sustain the provision of fruit).

Despite these positive outreach attempts by schools, little mention was made of ways in which parents/whänau were being directly empowered to make changes in the four priority areas, and for the most part connections between the schools and communities were described in a unidirectional fashion (i.e., stakeholders described the ways in which schools were trying to make connections, but not of the ways in which parents/whänau were empowered to drive or lead initiatives). However, previous research has noted that even thinking about how to involve family/whänau in HPS initiatives was a positive spinoff of schools' use of the HPS framework (e.g., Postlethwaite et al., 2000). As described by stakeholders in this round of interviews, schools are thinking about how best to include family/whänau in the FIS initiative. Stakeholders hoped that this raising of awareness would result in effective action in the long run. Parent/whänau and community involvement is an important area for ongoing development, as it has been shown to be a positive contributor to health changes for all involved (St Leger, 1999).

Embedding the four health areas into the curriculum

In line with earlier findings (King & Boyd, 2006; King et al., 2006), agency stakeholders suggested that, although many schools are making good progress, embedding the four health areas into the curriculum is an ongoing challenge. They noted that school cluster meetings were assisting teachers to share materials and curriculum approaches, and that FISC were facilitating the distribution of the resources from the partner agencies.

The smokefree component of FIS was mentioned as needing more support. As discussed in the staff surveys section of this report, many schools are introducing the four health areas progressively rather than simultaneously, and have generally placed the smokefree area on the back burner. Stakeholders considered that further work was needed to address perceptions that compliance with smokefree legislation is sufficient, and to encourage schools to address smokefree in the curriculum and to send smokefree messages out to the wider community.

Whole-school ownership

Regional stakeholders shared the view expressed by many at the national level that, despite strong enthusiasm for FIS at all levels, there was a need for greater ownership of FIS by all school staff. Stakeholders considered this ownership and staff empowerment could be supported by activities such as whole-school PD and release time for teachers to work on curriculum development related to the health priority areas. Currently, FIS was perceived by many regional stakeholders to be "raining down" on already overworked staff, with a lead teacher as a conduit, and through regional and national "masters". At the same time, some interviewees recognised the critical nature of both support and pressure from the top to achieve and sustain change. For example, one who advocated for a whole-school PD approach nevertheless thought that offering principals greater clarity about the expectations of schools on joining FIS and what kind of resources and

support they could expect in return, would have made for more effective implementation. This could then be followed by a flexible approach to encouraging staff to take ownership of FIS. For example, greater clarity could assist principals to effectively communicate expectations to teachers (top-down), while at the same time building buy-in by all teachers and provide staff with time to engage in joint curriculum and activity planning (bottom-up).

Relationship with other initiatives

Despite FIS supporting interagency synergies and improvements to the co-ordination of health promotion work with schools, some regional stakeholders felt that related initiatives were sometimes tripping over each other (e.g., Active Schools, HPS, Mission-On, etc.). Duplication was sometimes occurring where agency partners were not communicating effectively or did not have sufficient understanding of related initiatives. Some noted that, in combination with the perceived "top-down" approach to delivering FIS, this meant that schools sometimes had a sense of being "imposed upon".

This issue may be resolved in part as FIS becomes more school-driven. FISC noted it was important to identify what schools were already doing, and work from this base to implement the four priority areas at each school's pace. Adopting this model of building on strengths and empowering schools was thought to be key to the success of the FIS initiative, and could ease the sense that some schools had of being imposed upon. Additionally, schools would feel less imposed upon if FIS partners were working with them to identify what was within their capacity for change, given the other demands on their time. Some FISC indicated that working with schools was about "working smarter" through a high level of co-ordination between the schools, FISC, and interagency partners to identify where initiatives, although different, were overlapping and could perhaps be streamlined.

Areas of good practice

Stakeholders considered that changes were happening both in large and small ways across FIS schools. Those that appeared common across a number of schools included a focus on healthy eating and nutrition through initiatives such as healthy lunch boxes, school canteens offering more healthy food choices, and reflection on how school funds are being raised, for example, looking for alternatives to chocolate. At many schools, more whole-school physical activity days were taking place and were being supplemented by daily activity breaks, for example, 15 minutes per day exercise in addition to any PE. Shade trees were being planted and fundraising was being planned for the purchase of school sunhats. A variety of successful approaches in meeting particular challenges and in developing school initiatives was reported by regional stakeholders. These approaches included:

- A kura kaupapa Mäori in a rural area which sourced funding for an orchard and initiated discussions with shopkeepers to eliminate fizzy drinks from the kura.

- A public health nurse who designed a template, centred around nutrition, for school Health Expos. This had been used by several schools.
- In one region an additional 0.5 FTE HPS adviser was employed. Their main aim was to connect with communities (predominantly Māori) and to create buy-in for FIS prior to the rollout of Phase 3.
- A multipronged community engagement programme at one school included: students engaging in promoting FIS-related activities (e.g., sunsmart behaviours) and parents attending an awards ceremony for these students; tree-planting; and effective use of a national Ministry of Health newsletter.

Interestingly, stakeholders reported that FIS is facilitating the sharing of good practice and changes to schools' approaches to health and wellbeing in some schools that are not part of FIS, but that have heard about the initiative. In one region a number of schools that were not eligible for the free fruit funding have been implementing the initiative by themselves. Although focusing solely on the fruit, they are providing children with fruit breaks every morning.

Looking ahead to sustainability

Stakeholders made a variety of points about the longer term prospects of keeping the FIS initiative on schools' agenda. According to some, there were encouraging signs such as FIS becoming embedded in the curriculum and day-to-day thinking of teachers, and schools and communities learning how to work together. Stakeholders agree that changes across the four areas were becoming more entrenched and attributed this to amendments in school policy that were driving changes in behaviour. Additionally, it was noted that changes were likely to be long term "…as they [schools] wouldn't want to go back on a good thing".

Stakeholders also felt that changes to the four health areas were likely to be sustained because changes were being made at the policy level first. Additionally, Mission-On and a range of complementary initiatives have sustainability built into them. For example, a key aspect of sunsmart accreditation is ongoing review and evaluation, which helps to ensure schools continue to follow the policies that have been put in place. The Active Schools initiative has also helped to change the daily routine of schools and, as highlighted previously, the changes that schools have been making in regards to the health priority areas have led to positive outcomes and therefore are likely to be sustained.

All stakeholders would like to see fruit provision continued. They noted that schools across the regions were at different stages of planning or action regarding sustaining the fruit, and there were differences of opinion as to how viable this was. Reflecting their longer involvement in FIS, Phases 1 and 2 schools had been more actively planning than Phase 3 schools. Some schools have already started to plant orchards and gardens, or had enlisted support from local fruit suppliers. But some stakeholders considered that sustained fruit provision may be too much responsibility for schools and believed that in the long run this should fall back on families/whānau: "…they can

be educated to produce their own fruit and gardens." Others appeared bewildered at the thought of how fruit provision could be maintained and suggested this needed to be addressed.

Most regional stakeholders considered that government funding for the fruit should continue beyond three years. However, there was a minority view that extended funding would reduce prospects for sustainability, based on the argument that it would weaken the incentive for schools to become self-sustaining.

Although stakeholders felt FIS was starting to become embedded in school practice, some concern was expressed that schools were still too heavily focused on the fruit provision and were not looking ahead and making sustainable change in the four health areas. To this end stakeholders identified a long list of additional supports necessary for sustainability, including the following supports at either a school, regional, or national level.

- Better communication at the national, regional, and school level. In particular, stakeholders considered national leadership in maintaining common threads and real co-operation between health and education was necessary. The Ministry of Education needed to "fly the flag and show schools it's important".
- Further promotion and use of the HPS model of collaboration and empowerment to ensure local buy-in and transformational change.
- At the school level, a variety of tangible supports was needed including:
  - more PD, dedicated staff time, and other supports to get all teachers and all staff (including all principals) engaged in FIS
  - more support for lead teacher (e.g., more release time)
  - better branding and visibility for FIS to motivate and engage parents/whānau and teachers.
- At a regional level, more PD for public health nurses and others was needed, as were approaches that targeted the whole community and not just working through schools to address issues of nutrition and health.

A core issue raised by many stakeholders related to the length of FIS funding. Most shared the feeling that "3 years is not long enough ... to see the effects of long-term change, it takes 10 years". Some stakeholders felt that the length of the initiative may reflect a political agenda more than a concern with real outcomes for children and communities. They suggested that sustainability would only derive from ongoing national support that provided strong directives for consistent and continued developments in the area of health promotion through schools.

Summary of national and regional stakeholder perspectives

Both recent and previous interviews with stakeholders reveal a number of key themes, with strong convergence between the views of national and regional stakeholders. There was strong support and enthusiasm for FIS from FISC and agency stakeholders. The benefits of the interagency approach have been experienced both quickly and profoundly in terms of improved

communication between agencies, co-ordination of services to schools, and realisation of synergies as agencies worked together toward shared goals.

Change in the four health areas was commonly viewed as both achievable and sustainable, but further work was needed. Interagency stakeholders considered schools are making good progress toward whole-school ownership of FIS and embedding FIS within the curriculum, but there is room for further development and a need to make FIS more school-driven. At the same time, stakeholders are clear that FIS requires ongoing co-ordination and leadership at a national level to ensure strategic consistency while DHBs take responsibility for the oversight of FIS within their respective regions.

It was generally considered that three years was insufficient time to achieve and sustain change of the breadth and magnitude encapsulated within the strategic objectives of FIS. Furthermore, the vast majority of stakeholders believed that fruit provision may not be sustainable for low-decile schools without ongoing assistance.

Other high-priority areas identified by stakeholders include a need to increase the representation by Māori and Pasifika in decision making related to FIS, so to better meet the needs of Māori and Pasifika students and communities. There are concerns both regionally and nationally about the capacity of agency partners to provide the level of support to schools felt necessary to successfully implement and foster the sustainability of FIS (particularly for Phase 3). These concerns highlight an ongoing need for strong leadership to work through these issues and maintain the high levels of commitment and momentum, to build on the successes that have been demonstrated to date.

6. Summary and recommendations

The focus of this report is on the implementation of FIS, and the main aim of the report is to generate information that could be used by a range of stakeholders to improve the FIS initiative. This section of the report overviews the key findings to date from the Healthy Futures evaluation, and suggests possible avenues for strengthening FIS.

Key findings in relation to the four health priority areas

In combination, the findings summarised in this report suggest there had been a systemic effort in FIS schools to address student health and wellbeing. To date, this effort has mostly been focused around three of the four health priority areas. In all of the health priority areas, some positive shifts are shown in the student data. Although some of these shifts are small, the number of changes in the data, and the way they align with the changes reported by staff, and during case study interviews with students and parents/whänau, suggests that many are attributable to changes in school practices related to the FIS initiative. The key findings in relation to each of the four health priority areas are summarised below.

Healthy eating

The student and school staff data concerning healthy eating tell a consistent story. Prior to FIS, learning activities related to this area were already a part of classroom practice at most of the schools, but staff recognised the potential for further development of school practices and student knowledge, attitudes, and behaviours in regard to healthy eating. In 2006, healthy eating was the main health priority area schools elected to address, and staff reported making a number of changes to school policies, practices, and curriculum activities in connection with this focus. For example, at some schools, this resulted in existing or new learning activities being connected to actions such as healthy lunchbox initiatives or changes to canteen food.

Consistent with the information collected from their teachers, students reported they had learnt a lot about healthy eating in 2006, and significant positive shifts in their knowledge about healthy eating practices and their vegetable and fruit intake were evident. To date it appears that FIS has been most successful in supporting actions which create a healthy eating environment in schools, and is starting to support shifts in classroom practice and student behaviours in relation to healthy eating which are likely to lead to improved health outcomes. Increases in the number of students who reported eating vegetables, both at school and at home, suggests that FIS is also starting to have a wider impact on the home environment.

The school data show that, over 2006, there was an increase in the depth to which agency partners, such as the National Heart Foundation and public health nurses, worked with schools to support their healthy eating initiatives. The high uptake of this priority area by schools has placed increasing demands on the National Heart Foundation in particular, with a further jump in demand anticipated due to Phase 3 and Mission-On. A more even balance in uptake across the four health areas is desirable both in terms of capacity and outcomes.

Physical activity

The student and school staff data around physical activity also tell a similar story to the healthy eating data. Prior to FIS, developing a healthy physical activity culture was already on the agenda for many schools. School staff noted that this area was also a key priority in 2006 and reported making a number of related changes to school policies, practices, and curriculum activities. Many also reported accessing support from agency partners. Some of the case studies show the impact of these connections. In particular, teachers were very positive about the student-centred nature of Active Schools PD and considered this PD was prompting a change in the physical activity culture in their schools, and supporting them to make changes to their practice.

Paralleling the teacher data, students reported they had learnt a lot about physical activity in 2006, and the student data show a number of significant positive shifts. In particular, students' attitudes towards exercise became more positive, and the number of times students engaged in mild to moderate physical activity in the day before the survey increased between the baseline and end of 2006. Increases in students' home physical activity with their family/whänau were also shown, along with a decrease in students' TV watching and computer gaming. The case study interviews suggest that some of these changes at home are likely to be attributable to FIS. For example, students described how, as a result of a school focus on healthy lifestyles, they were trying to be more physically active at home, and some had replaced TV watching with physical activity. Taken together, these findings suggest that FIS was supporting change in schools' physical activity culture as well as individual students' approaches to physical activity. In combination with the changes to healthy eating practices, these shifts are likely to lead to improved health outcomes.

Sunsmart

Sunsmart was the third priority at the schools, and many reported reactivating or developing policies and procedures in this area, with a number of staff noting that they were ensuring that students wore sunhats at school and had access to sunscreen. Some were redesigning their grounds to give more shade, and others were working towards sunsmart accreditation. Many also indicated that they were integrating learning about sun protection into the curriculum. Just under half of schools had connections with the Cancer Society. Paralleling their teachers' actions, the student data show significant increases in students' knowledge about sun protective behaviours, but no shift in actual behaviours.

Students who identified as NZ European were the most likely to engage in sunsmart practices at school and at home. The majority of students in FIS schools identified as Mäori or Pasifika, and population health data clearly show that melanoma is less of a concern for people from these groups (Ministry of Health, 2006a). The FIS initiative has its origins in the Ministry of Health's *Cancer Control Action Plan* which has driven the selection of the four health priority areas. But the need to prioritise sunsmart could vary depending on each school's population.

Smokefree

The data around smokefree tell a different story to that of the other three health areas. An interesting narrative runs through the data—that is, despite a substantial number of students having tried smoking or becoming regular smokers at Year 4, school staff placed less priority on this area compared with the other health areas. Although prior to FIS, a number of schools already had activities in place to assist senior students to explore the impact of smoking, this area was not integrated into the curriculum to the same degree as healthy eating and physical activity. This could be because staff were not aware of younger students' smoking behaviours. In addition, some staff appeared to hold the perception that the smokefree component of FIS was about complying with smokefree legislation (and not smokefree education for students), and therefore there was no need to address this area as they were "already smokefree".

Nethertheless, some schools did focus on smokefree and some shifts in the student data were evident, such as, an increase in awareness about the impact of passive smoking and a decrease in the number of students who reported smoking one or more cigarettes a week. The survey and case study data suggest that many of the changes in the other three health areas can be attributable to changes in school practices that result from FIS. In contrast, this information suggests the shifts in the smokefree data are likely to have resulted from a mix of school, home, and societal factors. The student and staff data showed that many schools did not focus on smokefree in 2006, or plan to in 2007. Schools often elected to explore the other priority areas first because of the availability of programmes to support them. The lack of support people and programmes available around the smokefree component is likely to act as a deterrent for schools to address this aspect of FIS. These data indicate that there is a need for more national direction and support and information for schools around the smokefree component.

Sustainability and success factors

Sustainability

School leaders and teachers tend to commit to finding ways to sustain initiatives for which they can see a clear benefit for students, and FIS appears to be one of those initiatives. But staff also acknowledged that initiatives can be hard to sustain, especially with the amount of other PD that

schools are undertaking, and the many demands on their financial resources. Many principals and lead teachers were concerned about how to keep the momentum going, and the continuation of the fruit provision aspect of FIS. Students and whānau also showed strong support for schools' commitment to health and wellbeing and the continuation of the free fruit. Some schools had tentative plans to continue the fruit provision aspect of FIS once the funding stopped, but many had yet to fully explore this aspect of FIS or considered they would be unable to sustain the fruit provision. Regional and national stakeholders concurred, suggesting that fruit provision may not be sustainable for many low-decile schools without ongoing assistance.

The survey and case study data suggest there is a need for mechanisms to keep student health and wellbeing on the agenda of schools. Prior to FIS, many schools had healthy eating and sunsmart policies or guidelines. At some schools these policies had lapsed over time. This study suggests that FIS provided schools with the impetus to revitalise and revisit their practices, thus indicating that schools may need ongoing support to sustain this momentum (whilst also acknowledging other aspects of core school business).

Salutary lessons can be learnt from evaluation of the School Fruit and Vegetable Pilot Scheme (SFVS) in the UK. The evaluators of this scheme concluded:

> Taken as a whole, our findings show that the SFVS did significantly improve the consumption of fruit by children in the scheme, but did not have any wider impact on diet, and increased consumption of fruit was not sustained when children's participation in the scheme came to an end… It is also possible that the SFVS will have a longer-term impact on children who are exposed to the scheme for a greater period of time. Further, the potential of the SFVS to positively impact on children's overall diet might well be enhanced, if implemented in the context of a whole-school policy designed to promote healthy eating. (Schagen et al., 2005, pp. 59–60)

This quote attests to the importance of integrating the FIS priority areas into the curriculum and allowing adequate time for this process. The school change literature clearly states that at least three to five years is needed for changes to teacher practice to become evident in student outcomes (Russell, 2003; Timperley, 2003). National and regional stakeholders also commonly considered that three years is insufficient time to achieve and sustain the desired breadth and depth of change. Although changes in students' knowledge and behaviour are already evident in regard to some aspects of FIS, there are other aspects for which the full potential has yet to be explored. One in particular is use of the HPS process within the curriculum as a vehicle for empowering school staff to work alongside students and the parent/whānau community on health promotion.

Success factors

The findings from this study suggest that to embed FIS in the school system, and support students to take action on FIS goals, a number of conditions need to be in place. The case study schools (which were selected because of their effective practice) already had much of this infrastructure.

For example, these schools had: a history of prioritising student health and wellbeing; strategic leadership (usually by more than one staff member); existing policies and practices; or existing processes for forming connections with their parent/whänau community. In general, staff at the case study and survey schools considered that the existence of the following conditions is likely to ensure that FIS is successful in the longer term:

- funding or continued central distribution of fruit and systems for managing the fruit
- support from school management or the Board of Trustees
- support from all staff
- a lead teacher to support initiatives
- ongoing support from FISC and agency partners
- clustering and sharing of good practice between schools
- systems in place in schools to support a continued focus on health
- inclusion of the priority areas in curriculum planning and activities
- a school focus on health promotion models
- resources for teachers about the health priority areas
- parent/whänau involvement and information.

National and regional stakeholder feedback supported these themes, with the addition of:

- continued progress towards a school-driven, empowerment model of FIS delivery rather than the current model which is seen as too top-down and focused on information provision;
- more PD, dedicated staff time, and other supports to better engage all teachers and other staff in FIS
- ongoing co-ordination and leadership at a national level
- building on the substantial gains brought about by the interagency approach to further improve cohesiveness and co-ordination of health promotion services in schools
- national hui for FISC and regional interagency staff to ensure broader sharing of knowledge and good practice, develop linkages, and foster a common and robust understanding of FIS.

Where to next?

The findings to date suggest that the structure and processes of the FIS initiative are very effective in supporting schools to take action to address concerns about student health and wellbeing. Given these successes, there are a number of avenues which have the potential to further strengthen the initiative. These avenues, and associated recommendations, are summarised below. The recommendations are aimed at different levels of the system. Some require national direction and therefore have implications for both policy development and associated practice. Others are aimed more at the regional or school level.

Taking an action approach to teaching about health and wellbeing

The findings suggest that FIS is acting as a catalyst for schools to use approaches that involve students and staff learning by "doing" or taking action. This modelling of "doing" was initiated by the gift of fruit. A number of teachers noted that, prior to FIS, they had taught about the food pyramid for a number of years, but FIS encouraged them to link this with actions such as healthy lunchbox initiatives or an exploration, with students, of the food to which students had access through the school canteen or at school events. The case study students frequently linked their attitude and behaviour changes in regard to healthy eating, physical activity, and sunsmart to the action component of FIS-related activities. For these students, a combination of learning "about" and learning "for" (by taking action) seems to be particularly effective. The utility of such approaches is borne out in other studies. In a review of good practice in school health promotion in the UK, a report from the Office for Standards in Education (Ofsted, 2006) concluded that the most successful schools were those in which the messages taught in the curriculum were overtly demonstrated, so that students could put their learning into practice.

The action approaches being used in schools can be divided into two types: those which are top-down or "done to" students, and those which are empowering or "done by" students. Empowering actions require students to develop action competence (examples are the involvement of students on health teams, leadership training for students, and student-led physical activity programmes or environmental projects).

The information we collected suggests that schools are using a mix of top-down and empowerment approaches, and both are leading to short-term changes. The case study interviews with students suggest that empowerment approaches appear to have the added value of supporting students to develop competencies and lifelong learning skills that could lead to longer term change.

Overviews of research on health promotion suggest that multifaceted approaches are most effective in supporting change (Lister-Sharp et al., 1999; Stewart-Brown, 2006). This argument can also be applied to the models that underlie approaches to health education. The information provision aspects of top-down models are a prerequisite for empowerment and collective action. Rather than suggest that one model is paramount, there is a need to examine the balance of approaches to ensure they include a mix of top-down and empowerment approaches. At the moment the balance seems to be in favour of top-down approaches, with the use of empowerment models in the classroom being a less common, rather than a more common, behaviour. The information we collected suggests there are opportunities for student empowerment that are not actioned by school staff as they do not necessarily "see" them yet.

This study did not seek to evaluate the HPS approach *per se*, but as this is the backbone of FIS, reviewing its efficacy in addressing the aims of FIS seems an inevitable part of this evaluation. The HPS process encourages schools to develop health teams of students, teachers, and parents/ whänau to act as activists. This model is located ***outside*** the core curriculum and tends to involve small groups of students (though the intent is that this group will eventually grow to include more

students). This study suggests there is a need to support schools to develop models of action competence or activism that are located ***within the curriculum*** and are for ***all*** students. As described in the introductory section to this report, these models already exist. Health and PE curriculum resources outline a number of action competence processes for teachers to use, and some of the inquiry learning models commonly used in NZ primary schools are other examples. Likewise, environmental education provides a model to engage the whole school community (not just a small team of activists). Using this model, students are actively involved in decision making and learning "for" the environment as well as learning "in" and "about" it. Teachers clearly saw the alignment between the HPS model and environmental education, and some schools have environmental education programmes that sit alongside FIS. Perhaps environmental education is so enthusiastically embraced, and seems to fit well with FIS, because it enables schools to involve a larger number of students in health promotion, in this case for the health of the environment rather than individual health.

Although HPS, inquiry, action learning, and environmental education models all use overlapping processes, FIS stakeholders who come from different backgrounds may not be aware of this. This can result in a situation where the health and education sectors are using different models to talk about the same thing. There is a need to align these approaches, and to support teachers to see how the models they are commonly using in the classroom could be used to action FIS goals and support health promotion and student empowerment.

Both this study, and other commentators (Quigley and Watts Ltd, 2005b; Robertson, 2005; St Leger, 2004), suggest there is a need for more support and PD for teachers about health promotion. Robertson (2005) suggests that teachers may not be fully implementing the intent of the Health and PE curriculum and instead are focusing their attention on teaching "about" health. This tension has also been noted in relation to environmental education. Summarising their findings from a stocktake of environmental programmes in NZ schools and kura, Bolstad, Eames, Cowie, Edwards, and Rogers (2004) note that the views that underpin environmental education practice in NZ are not always fully consistent with the goals and aims of environmental education in the international literature. In particular, they noted that teachers did not necessarily perceive student decision making as a central facet of action "for" the environment, although this is a goal of environmental education.

The resources and support available to schools also send conflicting messages. Some, such as Life Education Trust bus visits, appear to primarily use an information-provision model, and therefore reinforce "learning about" approaches. Other resources, such as Active Schools PD, encourage teachers to set up leadership opportunities for students, thereby reinforcing "learning for" or empowerment approaches.

Supporting a change in the education system towards teaching "for" health and wellbeing as well as "about", and increasing the opportunities for students to take an active decision-making role in this process, is not the sole responsibility of the FIS initiative. Educational commentators in general are identifying the need for teacher practice to shift in this direction so that we are better

preparing young people for their future in the rapidly changing world of the knowledge society (Gilbert, 2005). Currently, other initiatives in the education sector are also focused on empowering students and developing their lifelong learning skills. Examples include literacy, ICTPD, and numeracy PD. It is important that teachers have the "big picture" and see the connection between these approaches and FIS. Research shows improved student achievement when there is coherence between the models and approaches used in schools (Newmann et al., 2001). It is likely that this shift towards teaching "for" health will take time. The findings suggest that the following actions could provide additional support for teachers.

Recommendation: Provide curriculum support or PD for all teachers to show the alignment between the HPS model and other models promoted in NZ curriculum support materials (such as action competence models) and encourage the use of these models in ways that promote student empowerment. (For example, in clusters, schools could review their activities to explore the balance they have between teaching "about" or "for" health, and develop new student empowerment models, such as each class having a health team which works on a school or community health and wellbeing goal.)

Recommendation: Explore the balance of information-provision and empowerment approaches in FISC practice, and in initiatives such as Mission-On, with a view to ensuring that associated resources and PD emphasise both approaches.

The FIS professional development model

The case study and survey findings suggest that lead teachers, principals, and classroom teachers have different resource and PD needs. The findings also suggest that there is a need for more classroom teachers to be actively involved in FIS-related PD. Some teachers suggested they needed whole-school PD; others did recognise this need and instead suggested they required additional resources and information.

The model used to provide PD to teachers as part of FIS is a lead-teacher model. It is up to individual lead teachers whether they pass on the knowledge and understandings they have acquired. HPS is a whole-school model insofar as it addresses three levels of the school system. In the education world, rather than referring to a model that addresses ***all levels*** of the system, whole-school tends to refer to a PD process that includes ***all*** staff. PD that includes ***all*** staff or staff teams, and that is ongoing, is recognised in NZ as a good practice model because it has been shown to promote sustainability in the long term (Burt & Davison, 1998; Scott & Murrow, 1998). Three current large national PD contracts all have whole-staff aspects. These are the numeracy (Ministry of Education, 2006c) and literacy (Timperley, 2003) contracts, and the ICTPD clusters (Ham et al., 2003).

Some aspects of the PD to which teachers have access through FIS include all staff. One example is some of the PD that is provided through the Active Schools initiative. This PD was perceived as being very valuable by school leaders and teachers.

Whole-staff PD about FIS processes and approaches could support teachers to see the synergy between the HPS process and similar approaches commonly used in schools that promote empowerment and action competence. This PD would have the benefit of supporting teachers to action the intent of the Health and PE curriculum and embed FIS goals within the curriculum, thereby further addressing the curriculum aspect of the HPS framework.

Although many lead teachers reported that FIS clusters were effective, many also did not consider there had been a resultant change in networking and sharing of practice between schools. A number suggested that cluster sessions could be made more effective if they were more school-driven, needs-based, and supported teachers and FISC to work together on shared goals, thus modelling the HPS process and demonstrating some of the characteristics of a professional learning community (Timperley, 2003).

Those who support schools could also benefit from PD and support that is more closely tailored to their needs. FISC from different phases, and established and more recently employed interagency partners, had quite different PD and support needs. To date much of the national PD offered has used a one-size-fits-all model or included some, but not all, of the interagency partners.

Recommendation: Explore ways to provide whole-school PD to all school staff (e.g., tripartite partners could explore the issues around developing a national whole-school PD process).

Recommendation: Explore further national or regional avenues for providing PD to FISC and interagency staff that meets their differing needs and levels of experience.

Sustainability

Keeping the momentum of FIS going was a concern for many FIS stakeholders. These initial findings suggest that FIS, and in particular the free fruit, is providing schools with the impetus to revitalise or revisit their practices in relation to health. To sustain this momentum, schools may need ongoing support and mechanisms to keep student health and wellbeing on their agenda. Prior school change studies suggest that adequate timeframes (of at least three to five years) are needed for changes to become embedded in the school system. In particular, schools may need more time to fully explore the variety of ways students and the parent/whänau community can be empowered to work alongside schools and health agencies on shared goals. Many stakeholders also considered that low-decile schools may need ongoing support to enable them to continue the fruit provision aspect of FIS.

Recommendation: Explore models for the continuation of full or partial free fruit provision that also encourage schools to continue their focus on student health and wellbeing (e.g., free fruit and other resources could be offered to schools on the proviso that they submit a short yearly plan and annual progress report about intended new developments in health promotion and student and community empowerment).

Addressing smokefree

International evidence suggests that most people initiate smoking in adolescence (Health Sponsorship Council, 2005; Lantza et al., 2000). The data in this report, and in other NZ studies (TNS, 2004), show that some young people seem to be becoming regular smokers at a much earlier age, suggesting that current practices regarding smokefree education in schools, and the support which is provided alongside this, could benefit from being re-evaluated. This is not a simple exercise given that evidence as to the long-term success of smokefree education in schools is unclear (Lantza et al., 2000; Wiehe, Garrison, Christakis, Ebel, & Rivara, 2005). Some studies suggest that particular approaches appear to show more success than others. In a review of smoking and prevention strategies, Lantza et al. (2000) note that school-based initiatives that use a "social influence resistance" model (that is, support young people to build skills to address risk factors such as peer pressure and advertising tactics) are more successful than those that use "information deficit/rational" (information is provided about health risks) or "affective education" (beliefs, attitudes, and norms are explored) models. They also noted that the effectiveness of school-based programmes is enhanced when they are part of community initiatives which target the social and policy environment and which involve parents, mass media, and community organisations. From a review of the literature, the Health Sponsorship Council (2005) suggests that initiatives that target the reduction of risk factors, whilst also promoting protective factors, are necessary. For example, they note that participation in a sports team is a preventative factor for smoking. This suggests that smokefree education may be best located within a wider set of school-based initiatives designed to holistically address student wellbeing and connectedness. The research summarised above indicates some of the factors that would need to be taken into consideration in re-evaluating approaches to smokefree education.

The FIS community could work together to further progress some of the areas of need highlighted by this evaluation. The smokefree component is one of these areas. At the national level, the Healthy Futures findings suggest there is a need to explore current policies and practices in regard to smokefree support for schools and education for primary-age students. At the regional level, one suggestion for future action could be that, with national support, regional FIS teams build on existing knowledge to work on special projects that address two or three of the areas of need highlighted by this evaluation, so that new models could be developed and this learning shared nationally. For example, in regard to smokefree practices, to capitalise on students' obvious concern for the health of their whānau, a cluster of FIS schools that are well advanced in practices relating to other FIS areas could enlist student, community, and agency assistance to review the current evidence base and design ways to address the smokefree component. Clusters located in regions where health providers have existing strengths in smokefree initiatives could approach these providers to work in partnership with school staff, students, and whānau. An approach such as this would have the benefit of simultaneously addressing three areas of need (the smokefree component, making connections with parents/whānau, and developing students' action competence). Given the lack of a smokefree workforce to support the primary schools sector, this

model would enable staff from key agencies to work with one or two clusters rather than all schools.

Recommendation: Develop a national or regional project team to explore current policies and practices in regard to smokefree education for primary-age students and the way support is provided to schools.

Social and emotional health and wellbeing and the FIS model

A number of the case study schools were integrating FIS-relating activities within an overall focus on student connectedness and wellbeing, therefore acknowledging that the four FIS health areas are one aspect of student wellbeing. In these schools, this overarching framework was used to design initiatives to support students to learn how to make healthy choices that could be emotional, social, or physical. Along with the FIS priority areas, many of the survey schools also had a focus on social and emotional wellbeing.

Research shows that a sense of wellbeing and connectedness to family and school is a preventative factor against risk behaviours such as smoking (Resnick et al., 1997), and is associated with improved achievement (Libbey, 2004). The Healthy Futures student data show a similar association, with those who liked school being significantly more likely to have positive attitudes towards healthy behaviours, and engage in these behaviours.

It appears that an exploration of how social and emotional wellbeing could be more explicitly incorporated within the FIS model is likely to enhance outcomes from the initiative. International research suggests that the HPS model is a successful vehicle for developing approaches to mental health and wellbeing. Stewart-Brown (2006) reports that HPS initiatives which target mental health[69] have shown the most successful outcomes relative to other aspects of health. There are a number of ways the profile of social and emotional health could be raised within the FIS initiative and connected with the FIS priority areas. One is through developing (as some schools and clusters have done) a visual model of health and wellbeing that places wellbeing at the centre, and locates the four FIS health areas as aspects of the overall picture. Another is through actively seeking alignments for FIS in the area of mental and emotional health. One key alignment is the fit between the Ministry of Education's Mentally-Healthy Schools contract and FIS models and processes. Some FIS schools had already benefited from this alignment. Participating in this contract was a key impetus behind the "healthy choices" focus at some of the case study schools.

An alignment with the Mentally-Healthy Schools contract could have a number of benefits. Along with being consistent with "what works" in the literature, explicitly connecting the FIS priority

[69] In Stewart-Brown's paper the definition of mental health is broad and encompasses initiatives that encourage wellbeing such as the promotion of self-esteem, emotional literacy, and conflict resolution skills, to initiatives that aim to prevent specific mental health issues such as depression. Those initiatives that promoted wellbeing were noted as more effective than those that aimed to prevent mental illness.

areas with social and emotional health would further align FIS with Mason Durie's (Ministry of Education, 1999) whare tapa whä model (a key construct underpinning the Health and PE curriculum and Te Aho Matua[70]), and existing good practice in schools. Potentially, taking a more holistic approach to student wellbeing could also support FIS to get more of a balance between behaviour change models and the ecological and student empowerment approaches advocated by HPS practitioners. In addition, given that the Mentally-Healthy Schools contract uses a whole-school PD model, it could be an avenue for whole-school PD that supports teachers to make further use of health promotion models within the curriculum.

Recommendation: Explore ways to incorporate social and emotional wellbeing into the FIS model (e.g., explore the alignment of the Mentally-Healthy Schools contract with FIS and the potential for this contract to provide whole-school PD which emphasises connections to the curriculum and the HPS process or action competence models).

Working with agency partners

Working together at a regional and school level

Since starting FIS, the depth to which agency partners were working with schools had increased, and the impact of this could be seen on classroom practice. Most of the increased involvement appeared to be in regard to healthy eating, physical activity, and sunsmart. In particular, most schools had connections with FISC and public health nurses which supported their initiatives, and around half had connections with representatives from SPARC/regional sports trusts, the National Heart Foundation, or the Cancer Society. The Ministry of Education partners (School Support Services) were notably absent. Many interagency stakeholders were concerned about this lack of presence, and the implications of this for curriculum support, and teachers reported that they would like more resources or PD to support them to integrate the health priority areas into the curriculum.

Only a few school staff reported they had difficulty accessing agency partners to support their work. This situation may change in 2007 if, as intended, schools' priorities turn to sunsmart and smokefree, and as Phase 3 schools come on board. Agency partners noted that the number of Phase 3 schools was likely to stretch their capacity.

The interagency understandings and collaborations that FIS had facilitated were seen as a key success factor by interagency partners. These stakeholders also noted a need to further strengthen the effectiveness of regional interagency groups to progress from information sharing to a greater focus on shared problem solving. For example, interagency partners could jointly develop ways to:

[70] The foundation document for kura kaupapa Mäori.

- foster a more cohesive approach between FIS partners to interlock the four health areas and improve service co-ordination
- ensure a cohesive fit between FIS and related initiatives such as Mission-On
- improve facilitation and brokerage of linkages with health promoters, local Mäori and Pasifika community leaders or agencies, and other groups that can support communities to achieve sustainable change
- achieve a balance of "information delivery" and "empowerment" work with schools
- address residual tensions and patch protection in some regions.

Recommendation: Explore mechanisms to increase the regional presence of Ministry of Education/School Support Services representatives.

Recommendation: Develop contractual arrangements that support interagency collaboration and that highlight interagency partners' responsibilities to schools (e.g., for agencies that do not have national lines of accountability, develop processes to ensure FIS is included in contracts).

Recommendation: Encourage regional steering groups to prioritise and negotiate with schools in order to achieve a better balance of uptake across the four health areas and help ease capacity issues in high-demand areas. This could be supported at the national level through the development of processes to guide negotiations.

Recommendation: Encourage regional steering groups to progress from information sharing to a greater focus on shared problem solving. This could be supported by making this area a focus of future national hui and/or through other PD for FISC and interagency partners.

Working together at a national level

Regional and national stakeholders considered that some form of continued national direction was necessary for FIS to support national consistency of philosophy and practice in FIS, for continued ownership of FIS by interagency partners at a national level, and to ensure that FIS retains its momentum and grows and adapts.

Some of the suggestions for further collaboration between agencies could be progressed by national advocacy for FIS from two of the tripartite partners: the Ministry of Health and the Ministry of Education. Some of the impetus of this initial partnership has been lost as more responsibility for FIS was handed to the regions, the national co-ordinator's position was not filled following the incumbent's departure, and the national external reference group was restructured. An ongoing process is also required for keeping the key NGO partners engaged in FIS at a national level.

Recommendation: Develop processes for ensuring an ongoing national forum for tripartite and NGO partners to strategise and plan for the effectiveness and sustainability of FIS, and to provide the supports needed at a national, regional, and school level.

Alignment of FIS with Mission-On and broader government policy

Some of the FIS stakeholders were concerned about the increasing burden being placed on schools as they were being required to address societal problems. They suggested a range of ways that the health goals they were promoting, and FIS, could be strengthened by further action from local and national government. Some of their suggestions are covered within the 10 initiatives in the Mission-On package (Ministry of Education, 2006a). For example, one Mission-On initiative involves the Ministry of Health working with media groups to encourage them to take action to reduce young people's exposure to the advertising of unhealthy food options and increase access to health promotion activities and activities that promote healthy lifestyles. Another Mission-On initiative that is likely to impact on FIS schools (in which they may well be ahead of the game) is the proposed amendment to the NAGs that may require schools to develop and promote healthy eating policies.

Participants mentioned other avenues that are not part of Mission-On. These included: working with the owners of shops near schools to ensure they did not sell unhealthy food to students; auditing vending machines in public places to ensure they offer healthy options; and supporting low-income families to access healthy food, by, for example, subsidising the cost of healthy food, taxing unhealthy foods, or providing vouchers which could be exchanged for healthy options. Some of these suggestions, and others, have been made elsewhere (Wilson et al., 2007). Multifaceted approaches to health are cited in the literature as the most successful in promoting change (Stewart-Brown, 2006). Therefore, an exploration of additional ways that government policy and FIS could be aligned is likely to support the initiative.

Recommendation: To increase the coherence between initiatives in the health priority areas, undertake a stocktake of current FIS and HEHA strategies, and a review of possible strategies. Consider adaptations to FIS or other initiatives in areas where gaps or overlaps are identified.

Working with parents and whänau

As noted previously, schools have a three-year time frame to address the four FIS priority areas, and have already made substantial strides forward in many aspects of FIS. One area that has yet to be fully addressed is making connections with parents and whänau. The school data show some shifts in this area, but also a need for more resources and support. Most schools were making efforts to share health messages with parents/whänau. Some had forged useful partnerships with local marae and iwi, or were using their connections with early childhood centres and local intermediate and secondary schools to share health messages. With a longer period of time to develop connections with parents/whänau around FIS goals, Phase 1 lead teachers reported more changes to their practice in this aspect of FIS than Phase 2. Both Phase 1 and Phase 2 staff noted a need to focus on this aspect of FIS and said they needed more support.

Many current activities are focused on information provision, behaviour change, and staff, students, and parents modelling healthy behaviours together. Fewer schools seem to be forming partnerships with parents and whänau which enable both groups to share an active role in setting

new directions. Other research also comments on home–school connections and the types of partnerships that are formed. In a study of home–school messages about literacy, McDowall and Boyd (2004) note a change in parent and teacher perspectives on their roles in comparison to prior studies from the 1990s. They suggest there has been a shift in educational practice away from the model of "parent as supporter" of school initiatives towards a "parent as partner" model. In terms of practices connected to FIS, many of the communications with parents/whänau could be described as fitting more within the "parent as supporter" model. Some "parent as partner" actions were evident, for example, as parents actively worked with school staff on health committees, as board of trustee members, or through parent groups.

International studies comment on the need to develop more processes for consultation with parents and students about ways to promote healthy lifestyles (Ofsted, 2006). In NZ, Biddulph, Biddulph, and Biddulph (2003) note that genuine home–school collaboration can lift student achievement, but there are no "instant recipes" for developing and maintaining these relationships. They provide a number of examples of successful initiatives, as well as areas that need more investigation. These include the use of meaningful community contexts to enhance achievement. Developing and sharing home–school partnership models is another area in which regional FIS teams could work together. For example, they could build on the successful home–school partnership meetings that some schools have held to initiate discussion about health and wellbeing in their community.

Recommendation: Explore existing and new partnership approaches with parents/whänau, and ways to share information about these models across FIS schools.

Partnerships with Mäori and Pasifika communities

The idea or notion of partnership is a key theme in the FIS initiative. In the wider context, the principle of partnership has been an important part of the government's approach to service provision since the 1990s, and is seen to be a more effective way of achieving policy goals and objectives. For example, in the education sector, Tomorrow's Schools was driven by a belief that greater parental involvement in schools would improve the ability of schools to provide for their communities, and implicit in this was a belief that it would improve student achievement. Partnerships has also been an important theme of the government's Treaty of Waitangi policy since the 1990s. The government has been an involved in developing government–iwi partnerships for a wide range of policy initiatives. For example, the government has developed formal education partnerships with nine tribal authorities. However, what "partnership" means and looks like for the government and different interest groups often varies, as do views about how to achieve a genuine partnership. This study has highlighted some of these tensions.

Whilst the HPS model stresses the importance of working in partnership to address locally-driven needs, some FIS stakeholders noted that the implementation of FIS has been experienced by some, such as Mäori and Pasifika groups, as "top-down", because their involvement at all levels of development was limited. As one stakeholder remarked, there is a relative "lack of involvement

in the structure, process, and substance of FIS by non-Päkehä". Concern has been expressed in prior HPS research about the need to increase Mäori representation within the HPS workforce and for non-Mäori to further develop a better understanding of how to work in ways that best serve Mäori communities (Jenkins, 1999). In this current study, concerns have been expressed about: the lack of Mäori representation at the different levels of FIS; the lack of resources in te reo Mäori for kura; the need for the interagency workforce to be upskilled to work in schools where there is a high proportion of Mäori students and within Mäori medium educational contexts; and the need to explore how FIS is enacted within these contexts. These concerns are particularly pertinent given that students who identify as Mäori are the largest group that FIS is serving. Similar points have been made about Pasifika representation given that students who identify as Pasifika are the second largest group of FIS students.

Some steps have been taken at a national level to start to address concerns about Mäori and Pasifika representation in FIS leadership and policy building. At a regional level, the proportion of Mäori in the FISC workforce has increased, and through being partners to FIS (and therefore prioritising low-decile schools) has supported agency partners to increase their awareness that the resources they produce, and the way they deliver support, needs to be appropriate for different cultural contexts. At the school level, some schools have strong connections with their communities, and others have found forging connections with the local Mäori community to be an aspect of their work in which they require more support.

These are important steps towards developing a genuine partnership. However, it appears that greater involvement of community interest groups is needed through all aspects of the initiative. A genuine partnership does not just involve community groups as recipients of a service designed to address a problem that they have not been involved in identifying. If a goal of FIS is for the communities to genuinely "own" these solutions, then they need to be involved in identifying the problem ***and*** developing the solution. If the communities own both the problem and the solutions, it would seem more likely that the initiative will be sustained in the longer term. Thus, further discussion and consideration of what partnership means, and how it is achieved, is needed at the national and regional level. At the national level, the key agencies could explore their partnership approaches and engage in dialogue about developing genuine partnerships with regional and local-level agents or representatives. Local knowledge of different contexts and communities is very important, therefore those who work at the regional and local level are important contributors to the dialogue at the national level. Where there are gaps in Mäori and Pasifika representation, representatives could be recruited and involved in discussions at the national level.

There are some examples of FIS staff attempting to establish genuine partnerships through community consultation. For example, in one region, prior to the start of Phase 3, a Mäori fieldworker was employed to consult with the community about FIS. It seems important to learn about what seems to be working from these models. Formal recognition of the time and resources that are needed to build effective and genuine partnerships is likely to support further developments in this area.

Recommendation: Develop national and regional policy and processes to ensure ongoing dialogue with Mäori and Pasifika communities, and their representatives, in order to develop genuine partnerships to help promote the longer term sustainability of FIS.

Concluding summary

At the end of 2006, one principal described FIS as "A wonderful, generous, successful idea". Likewise a lead teacher noted:

> Over my 9 years+ at primary level and 10+ years [in] early childhood, this approach to health has been monumental in the focus it has put on health issues, but also so effective in a practical way because of allowing time out of class to develop health awareness and initiatives. The change in our school's ethos in relation to health has been huge!

These sentiments were echoed by many others. Despite the sometimes top-down approach taken to implementing FIS, the act of gifting the fruit, and the partnership this implied, showed that the Ministry of Health was modelling an action-orientated approach. At many of the schools, this action had been a key catalyst for building and strengthening school approaches to health and wellbeing.

This report summarises the findings from what is, essentially, the first year of an initiative. Given the short amount of time which elapsed between the baseline and follow-up data collection for Phase 2 schools (between Terms 1 and 4 of 2006, which is approximately eight months), there are a number of notable positive shifts in the student and staff data. Over 2006, a convergence in the student data is noted. Those students who, prior to FIS, had less positive attitudes or behaviours or lower levels of knowledge started to become more like their peers. The fact that these changes are evident within such a short time frame supports anecdotal evidence about the success of the FIS initiative. Given the current focus on health and wellbeing in the media, and in general, it is likely that other initiatives and health campaigns may well have contributed to the changes observed, but the consistency between staff and student views lends weight to the fact that FIS is a major contributing factor to these shifts.

It is premature to make judgements about longer term impacts, but these initial findings suggest that FIS is creating goodwill and providing a structure that enables the support from a range of agency partners to be galvanised to promote health goals. The changes that have occurred within a short time frame are encouraging. However, the level of goodwill that has been fundamental to achieving this change is both an opportunity and a risk. There is a need to maintain and build on this goodwill at all levels, and this includes addressing: aspects of national policy and practice relating to health education and promotion and working with a range of stakeholders; areas of real or perceived pressure on resources for interagency partners; as well as continuing to find ways for schools to take ownership of, and drive, FIS.

The actions taken in schools can mostly be linked to one arm of the HPS framework: "school organisation and environment" (that is, school-wide policies, practices, and environment). To date FIS seems to have been particularly successful in supporting change in this area. To a lesser extent, FIS is also supporting change in the other two arms of the framework: "curriculum, teaching, and learning", and the aspect of "community links and partnerships" which involves connections with interagency partners.

Schools are busy places, and their core business is developing young people as learners. It is unclear whether the impetus described in this report will be sustained unless the need to further embed the FIS priority areas and processes within the curriculum by offering whole-school PD is addressed. The need for a long-term vision about change is demonstrated by the case study schools. Prior to FIS, student health and wellbeing had been a priority at most of these schools for at least two to three years. Even so, FIS had acted as a catalyst to strengthen this existing focus, and staff identified many future actions that could be taken. This gives an indication of the time frames necessary for sustainable change.

The intent of this report is to contribute formatively to the FIS initiative by providing areas for national, regional, and school stakeholders to debate and explore. The information summarised in this report suggests a number of avenues for strengthening the initiative. Key areas include:

National level:

- exploring national models of smokefree education for primary-age students and ways to provide additional support to schools around the smokefree component
- exploring ways to explicitly address social and emotional health and wellbeing within the FIS model in order to further support change in the four priority areas
- exploring existing and new models for developing partnerships with Mäori and Pasifika stakeholders at a national and regional level.

Interagency level:

- exploring models for ensuring continued national and regional interagency synergies;
- exploring ways to address Phase 3 capacity issues for interagency partners.

School level:

- offering further resources or professional development to teachers to assist them to integrate the four health areas and the HPS process into the curriculum. This support needs to clearly align the HPS process with the models promoted in curriculum support materials (such as action competence models) and encourage the use of these models in ways that promote student empowerment
- offering further resources and support for school staff concerning how to involve their parent/whänau community in FIS (in part, parent/whänau involvement is likely to be addressed by the use of the HPS process or action competence models noted above).

List of abbreviations

Abbreviation	Meaning
AP	Assistant Principal
CS	Cancer Society
DILQ	Day in the Life Questionnaire
DHB	District Health Board
DP	Deputy Principal
ERG	[FIS] External Reference Group
FIS	Fruit in Schools
FISC	Fruit in Schools Co-ordinator
HEHA	Healthy Eating–Healthy Action
HOI	Health Outcomes International
HPS	Health Promoting Schools
ICT	Information and Communication Technologies
ICTPD	Information and Communication Technologies Professional Development
IEP	Individual Education Programme
MoE	Ministry of Education
MoH	Ministry of Health
NGO	Non-Governmental Organisation
NHF	National Heart Foundation
NZCER	New Zealand Council for Educational Research
NZDep	New Zealand Deprivation Index
ORRS	Ongoing and Reviewable Resourcing Schemes
PA	Physical Activity
PD	Professional Development
PE	Physical Education
PEPA	Physical Education–Physical Activity
PHN	Public Health Nurse
RHB	Regional Health Board
RST	Regional Sports Trust
RTLB	Resource Teacher of Learning and Behaviour
SPARC	Sport and Recreation New Zealand
SSS	School Support Services
SWIS	Social Workers in Schools

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