HEALTH IMPACT ASSESSMENT
Implementation of Oral Health Strategy
Location of a Community Clinic in Flaxmere

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June 2009
Acknowledgements

Maree Rohleder, Health Protection Officer and Ana Apatu, Senior Population Health Advisor, Hawke’s Bay District Health Board would like to acknowledge Sue Ward, Project Manager- Oral Health Business Case and Claire Caddie, Oral Health Service Manager for their support of and contribution to this Health Impact Assessment.

We would also like to thank all of the people who gave freely of their time to organise and attend the stakeholder workshops. Without their assistance and feedback we would not have been able to undertake this important piece of work.

The administration support from Audrey Garrett and Lynn McCowan has also assisted us greatly.

The Ministry of Health, Health Impact Support Unit - Learning by Doing Fund has funded this Health Impact Assessment and we have appreciated the support given to us by this unit.

Our special thanks to Rob Quigley from Quigley and Watts for his assistance, facilitation and mentoring throughout this Health Impact Assessment, and to Celia Murphy also from Quigley and Watts for undertaking the review of key literature for us.
Foreword

Health Impact Assessment (HIA) is a systematic way of identifying the potential impacts on the health and wellbeing of a population of any proposed policy, strategy, plan or project, prior to its implementation. The systematic use of a number of procedures, methods and tools can enable planners and decision makers to check their assumptions against the potential, and sometimes unintended, effects on the health of a population and the distribution of those effects across the population, the aim being to ensure that no population groups will be disproportionately affected.

HIA processes lead to recommendations that are evidence based and outcomes focused, and set out practical ways to enhance the positive effects of a proposal and minimise any negative effects. HIA is therefore, an important tool to use where the goal is to reduce inequalities in health.

Throughout this report there are references to the concept of “Whanau ora”. Maori families being supported to achieve their maximum health and wellbeing, is an overarching strategic priority both nationally and for the Hawke’s Bay District Health Board. All oral health service developments must aim towards and ensure equity in health outcomes for Maori. This has particular relevance for the Flaxmere community.

Also, in this report there are various references to oral health, oral health care, dental health and dental care. For the most part, the reader can regard the use of the terms ‘oral’ and ‘dental’ to have one and the same meaning. Locally, the use of the term ‘oral health’ is becoming commonplace, where as in the international literature ‘dental health’ is the more commonly used term.

This HIA has been funded by the Ministry of Health, through their Health Impact Assessment Unit. The Ministry established a Learning by Doing Fund in 2007 and this fund has enabled the Hawke’s Bay District Health Board to carry out this and a number of other HIAs during 2008/09.
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Executive Summary

In July 2006, the Government signalled that it was to embark on a substantial nationwide upgrade of community-based oral health facilities to support the delivery of child and adolescent oral health services and to improve oral health outcomes. As a consequence, funding has been committed that will allow a nationwide investment in facility refurbishment and service development. Addressing the current inequalities in oral health outcomes is both a Government and Hawke’s Bay District Health Board priority.

The model of care proposed in the oral health strategy for Hawke’s Bay will engage families early, through prevention and education programmes and by promoting healthy lifestyles from an early age. Community dental clinics will be established that increase access for Hawke’s Bay high need populations. Services will be flexible and will, where necessary, be taken to communities.

A ‘hub and spoke’ model is proposed for schools and includes both fixed and mobile clinics. The model proposes moving from the current 45 school-based clinics to 3 community clinics, 6 fixed clinics based on school sites and a fleet of four double-operator mobile clinic caravans, one single-operator mobile clinic caravan and a mobile screening van.

The proposal supports the establishment of community clinics in the “high need” communities of Wairoa, Flaxmere and Napier South/Maraenui. Fixed clinics are proposed for Onekawa, Greenmeadows, Hastings Central, Havelock North, Mahora and Waipukurau.

Mobile screening services will provide low cost, responsive options for schools where children have good oral health status. Most primary and intermediate school children will be seen and assessed annually in mobile clinics which will visit many school sites on rotation. Those children requiring follow up consultations and treatment will be seen at the community clinic. All children in the 0-5 year age group will be seen at the community clinic.
This HIA is focused on the three options for development of a community clinic in Flaxmere, which is part of phase one of the Hawkes Bay District Health Board Oral Health Strategy. The three options for the location of the community clinic are:

1. As a part of a wider ‘health’ centre in partnership with a community provider
2. A site within the Flaxmere village
3. Develop a school site for the suburb of Flaxmere.

The HIA was also looking at how best to engage with caregivers/Whānau/Pacific families to ensure optimal access to the community clinic and involvement with their children’s care and treatment.

The four stages of a typical HIA have been undertaken, drawing together evidence from the social science literature, submissions and feedback from community representatives, community organisations and the Hawke’s Bay Regional Council.

**Findings**

1. Oral health is an important element of general health and wellbeing. Tooth decay is one of the most prevalent chronic diseases worldwide and people are susceptible throughout their lives. Recent evidence of an association between disease of the gums and bones in the mouth and diseases such as coronary heart disease has brought an increased focus on the importance of oral health to general health. However, oral health has and continues to be considered as separate from other health considerations. This has resulted in care of the teeth and mouth having a lower priority than other health problems.

2. Isolated interventions which merely focus on changing oral health behaviours will not achieve sustainable outcomes in oral health. Public health strategies should tackle the underlying social determinants of oral health through the adoption of the ‘common risk’ approach. The common risk approach addresses risk factors common
to many chronic conditions. For example, oral health is determined by diet, hygiene, smoking, alcohol use, stress and trauma. As these causes are common to a number of other chronic diseases, adopting a collaborative approach to improving the environment is likely to be more effective than one that is disease specific. This approach is most effective when local communities become actively involved in efforts to promote their overall health, including oral health.

3. Much of the literature relating to barriers to oral health care comes from the USA and refers to families who receive Medicaid, a government funded medical/dental care system for those who are unable to afford private medical/dental insurance (there is no universal access to free dental care for children in the USA). While this system is different from the New Zealand situation, many of the barriers these low-income families face are likely to exist for New Zealand families. While structural barriers exist, the attitudinal barriers for people in the community may be more difficult to overcome. Both sets of barriers are important considerations when deciding how new oral health care services will be run and where facilities should be placed.

4. The literature clearly shows that simply improving access to oral health care is not enough to reduce inequalities in oral health. The lack of knowledge, the attitudes and perceptions, which affect the oral health care behaviours of those who do not access dental care, also need to be addressed.

5. One of the most prevalent perceptions in the community is that dental care has a lower priority than medical care. Many researchers and commentators recommend integrating medical and dental care, and taking a ‘common risks’ approach to dental care.

6. The strong emphasis on integrating dental and medical care suggests that locating both services in one clinic/organisation allows for cross referrals and a better opportunity for dental care to become part of health, rather than separate from it.
7. Integration of dental and medical care also increases the opportunity for parental engagement. Families visit medical services more often and, unlike dental appointments, parents almost always attend with their children so there are opportunities for engagement with parents.

8. Parental engagement is important as the literature shows that parents who seek dental care for themselves, also seek dental care for their children.

9. Engaging adolescents and getting them to practice good oral care is more difficult. The few studies identified in this review suggest using approaches which fit with current youth culture.

**Recommendations**

*This Health Impact Assessment makes the following recommendations to HBDHB Oral Health Steering Group:*

1. **The community clinic should be located in the Flaxmere village and/or co-located with another health provider.** This recommendation was supported by the majority of the stakeholders and by the literature review. The literature review also strongly supported having the community clinic in a health facility which would also serve as a “dental home”. Some of the stakeholders advised that this facility should be seen as “neutral” to help establish trust in the service.

2. **Community trust in the service and the staff will need to be established early and maintained.** This was an important finding from both the literature review and the stakeholder workshops. The employment of dental assistants ‘who the community could relate to’ was seen as a positive move in helping to form relationships and trust. Having dental therapists permanently based at the facility, reinforces the concept of “dental home”. Ensuring currently employed local dental therapists move to the new facility will be critical for ensuring service and relationship continuity.
3. **Implement an oral health community education programme in Flaxmere.** This should be done in partnership with the health promotion advisors in the Healthy Populations Group, as this is a particular skill set of theirs. Parents need to be engaged and encouraged to access dental service for themselves, as studies have shown that parent’s health beliefs and attitudes toward dental care are significant predictors of children’s dental care and utilisation. Access to the service alone may not lead to the elimination of disparities in the severity of dental caries in children at different socioeconomic levels. There is a need for an adequate balance between professional oral health care and other health promotion programmes, in order to engage both parents and the community in good oral health care.

4. **Collaborative approach to engaging schools in any health service delivery and health promotion activities should be taken.** This recommendation came from concerns expressed from by school principals about the number of “Health Professionals” accessing schools and it is recommended that a co-ordinated collaborative approach is taken when working in schools. The Health Promoting Schools model has proved a successful way of engaging with parents and the wider school community in creating a supportive environment for promoting health.

5. **Workforce issues and succession planning for Dental Therapists needs to be addressed.** Many stakeholders acknowledged that it was obvious that a number of dental therapists are approaching retirement age.

6. **A robust information and tracking system needs to be in place to prevent children being ‘lost’ in the system.** This is important to identify and monitor who is not using the service. This will assist in reducing the ‘do not attend’ rates and enabling services to respond to potential issues quickly in the future.
7. **Transport options for getting children and families to the community clinic need to be considered as part of planning.** This could include active movement initiatives, such as a ‘walking bus’, to encourage physical activity of the children and families.

8. **Regular communication with the schools and the Flaxmere community about the service developments should occur throughout the process.** Note that it is important that the following concerns raised by the school principals are discussed and where possible addressed:
   - Potential for students being seen as truants by the community
   - Schools are responsible for student safety while at school including when they attend the community clinics – this may cause problems
   - Administration costs to schools from having to process leave passes to attend the clinics
   - Parental consent required to transport students to the clinics
   - Reliance on third parties to transport the students
Background

In July 2006, the Government signalled that it was to embark on a substantial nationwide upgrade of community-based oral health facilities to support the delivery of child and adolescent oral health services and to improve oral health outcomes. As a consequence, funding has been committed that will allow a nationwide investment in facility refurbishment and service development. Addressing the current inequalities in oral health outcomes is both a Government\(^1\) and Hawke’s Bay District Health Board\(^2\) priority.

The principles underpinning the new strategy are as follows:

- Improving the oral health status of those currently disadvantaged is a priority – particularly Maori, Pacific peoples and lower social economic groups.
- Oral health is an integral part of general health and wellbeing throughout life
- DHBs have the primary responsibility for ensuring high-quality oral health services are available
- A strong preventative programme complements examination and treatment services
- A robust and appropriately trained workforce provides a high-quality service
- Evidence-based oral health services require comprehensive information collection and on-going research.

There is an expectation from the Ministry of Health that the Hawke’s Bay District Health Board will implement the full strategic vision over the next ten years, but the early focus in phase one is on the development and reconfiguration of the services to children and adolescents (0-18 years) which will occur over the next three years (2009 -2011).

The model of care proposed in the oral health strategy for Hawke’s Bay will engage families early, through prevention and education programmes and by promoting healthy lifestyles from an early age. Community dental clinics will be established that increase


access for Hawke’s Bay high need populations. Services will be flexible and will, where necessary, be taken to communities.

A ‘hub and spoke’ model is proposed for schools and includes both fixed and mobile clinics. The model proposes moving from the current 45 school-based clinics to 3 community clinics, 6 fixed clinics based on school sites and a fleet of four double-operator mobile clinic caravans, one single-operator mobile clinic caravan and a mobile screening van.

The proposal supports the establishment of community clinics in the “high need” communities of Wairoa, Flaxmere and Napier South/Maraenui. Fixed clinics are proposed for Onekawa, Greenmeadows, Hastings Central, Havelock North, Mahora and Waipukurau.

Mobile screening services will provide low cost, responsive options for schools where children have good oral health status. Most primary and intermediate school children will be seen and assessed annually in mobile clinics which will visit many school sites on rotation. Those children requiring follow up consultations and treatment will be seen at the community clinic. All children in the 0-5 year age group will be seen at the community clinic.

It is anticipated that the above initiatives will be phased in over a three year period.

Health Impact Assessment

Health Impact Assessment (HIA) is a multidisciplinary approach that investigates the potential public health and wellbeing outcomes of a proposal. It aims is to deliver evidence based recommendations that inform the decision-making process, to maximise gains in health and wellbeing and to reduce or remove negative impacts or inequalities. HIA uses the broad definition of health used by the World Health Organization:
“Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”

HIA is an internationally recognised approach that helps to protect and promote community wellbeing and public health.

The key reasons to undertake Health Impact Assessments within the health sector are to:

- Ensure inequalities in health and improving population health are considered in planning
- Promote a participatory, consultative approach to policy making
- Help policy makers meet requirements of health legislation and policy direction
- Help policy makers incorporate evidence into policy making
- Promote cross-sectoral collaboration
- Help policy makers consider Treaty of Waitangi implications.

**HIA Process Used**

The HIA process follows the standard methodology as described in the document “A Guide to Health Impact Assessment: A policy tool for New Zealand”. It is usual within an HIA to compare one proposed option against another, either comparing a proposal with ‘business as usual’ or comparing the various proposed options available. In this instance, the Strategy options compared were the different locations for placing the proposed community clinic.

The four key stages of a Health Impact Assessment process were followed in this HIA, and they are:

- Screening
- Scoping
- Appraisal and reporting
Evaluation

Screening
Screening is the initial selection process to assess the strategy’s suitability for health impact assessment. The screening for the Oral Health HIA was undertaken by a small team from the Hawke’s Bay District Health Board. This process confirmed that it would be appropriate to undertake a HIA on the Oral Health Strategy. The write-up of the screening process is available from the authors.

Scoping/setting the priorities of the HIA
Scoping highlights the key issues that need to be considered and sets out what will be done in the HIA. The scoping meeting was held with a group of key people at the Hawke’s Bay District Health Board on the 17th October 2008 and was facilitated by Robert Quigley from Quigley and Watts, and Ana Apatu and Maree Rohleder from the Hawke’s Bay District Health Board. A full copy of the scoping report is available from the authors.

As the Oral Health Strategy was large, it was decided to focus on one specific component of the Strategy, whether to develop a community clinic as a part of a:

1. wider ‘health’ centre in partnership with a community provider in Flaxmere
2. site within the Flaxmere village
3. school site for the suburb of Flaxmere.

The HIA also focussed on ways in which the Strategy might encourage engagement with caregivers/Whānau/Pacific families in ensuring their access to the community clinic. It was anticipated that the developments would occur in year three (2011) of the HBDHB implementation plan and hence input into the decision on the location of the service was well timed. Flaxmere was chosen as the focus of this HIA because it was representative of the issues that would be experienced in other areas which would be affected by the Strategy. It allowed the HIA to focus on a defined geographical area and population. It was also opportune that the Hastings District Council was developing an urban design framework for the Flaxmere Village and associated areas, at the same time.

From the scoping meeting the group made the following recommendations:

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**Aim**
To identify the positive and negative health and wellbeing impacts on implementing Phase One of the Oral Health Strategy in Flaxmere and to provide recommendations to the decision makers about the risks and benefits.

**Objectives**
- To engage with stakeholders and selected parts of the community, and develop potential approach for future consultation.
- To develop a literature evidence base about implementation of oral health services in communities (engagement of families and models of care)
- To assist the implementation of the Oral Health Strategy for reducing oral health inequalities in Flaxmere
- To assist the implementation of the Oral Health Strategy for maintaining or improving access and quality of services.
- To make recommendations to the Oral Health Strategy decision makers about appropriate ways to maximise positive health and wellbeing outcomes from the Oral Health Strategy and minimise or negate negative outcomes.

**Determinants of Wellbeing and Health**
The scoping group decided to focus on the following determinants:
- Access to services e.g. sites in relation to community need, and transport access to these sites
- Availability of services e.g. range of services

**Population Groups of Interest**
The scoping group decided that the population group that the HIA should focus on would be:
- Whānau/families
Children

**Appraisal**
The aim of this stage was to appraise the Strategy’s potential to affect wellbeing and population health, if the strategy is implemented as outlined. This stage also determined what practical changes could be made to the Strategy to promote and protect wellbeing and health.

For this HIA several sources of evidence were used to assist in undertaking the appraisal. These were:
- Review of key documents (undertaken by Quigley and Watts)
- Community profile
- Interviews and workshops with community and key stakeholder groups
- Scan of relevant policy and strategy documents.

**Evaluation**
This assesses how the HIA process was undertaken (process evaluation) and the extent to which the recommendations were taken up by the policy makers (impact evaluation). The evaluation was undertaken by the HIA Research Unit at the University of Otago. It will be available separately from the authors of this report, once the HIA has been completed.
Appraisal Findings

**Literature Review**
The full review of key literature is available in Appendix One. A summary is as follows:

Oral health is an important element of general health and wellbeing. Tooth decay is one of the most prevalent chronic diseases worldwide and people are susceptible throughout their lives. Recent evidence of an association between disease of the gums and bones in the mouth and diseases such as coronary heart disease has brought an increased focus on the importance of oral health to general health. However, oral health has, and continues to be, considered as separate from other health considerations by the public, and often also by health practitioners. The perception that oral health is separate from other health has resulted in care of the teeth and mouth having a lower priority than other health problems.

Isolated interventions which merely focus on changing oral health behaviours will not achieve sustainable outcomes in oral health. Public health strategies should tackle the underlying social determinants of oral health through the adoption of the common risk factor approach. The common risk approach addresses risk factors common to many chronic conditions. Oral health is determined by diet, hygiene, smoking, alcohol use, stress and trauma. As these causes are common to a number of other chronic diseases, adopting a collaborative approach to improving the environment is likely to be more effective than one that is disease specific. This approach is most effective when local communities become actively involved in efforts to promote their overall health, including, oral health.

Much of the literature relating to barriers to care for oral care comes from the USA and refers to families who are unable to afford private medical/dental insurance (there is no universal access to free dental care for children in the USA) who receive Medicaid, a government funded medical/dental care system. While this system is different from the New Zealand situation many of the barriers these low-income families face are likely to exist for New Zealand families. While structural barriers exist, the attitudinal barriers of people in the community may be more difficult to overcome. Both sets of barriers are important
considerations in deciding how new oral health care services will be run and where facilities should be placed.

The literature clearly shows that simply improving access to oral care is not enough to reduce inequalities in oral health. The lack of knowledge, the attitudes and perceptions which affect the oral health care behaviours of those who do not access dental care also need to be addressed.

One of the most prevalent perceptions in the community is that dental care has a lower priority than medical care. Many researchers and commentators recommend integrating medical and dental care, and taking a ‘common risks’ approach to dental care.

The strong emphasis on integrating dental and medical care suggests that locating both services in one clinic/organisation allows for cross referrals and a better opportunity for dental care to become part of health rather than separate from it.

Integration of dental and medical care also increases the opportunity for parental engagement. Families visit medical services more often and, unlike dental appointments, parents almost always attend with their children so there are opportunities for engagement with parents.

Parental engagement is important as the literature shows that parents who seek dental care for themselves also seek dental care for their children.

Engaging adolescents and getting them to practice good oral care is more difficult. The few studies identified in this review suggest using approaches which fit with current youth culture.

**Causal Pathways**

Causal pathways are important tools used when carrying out Health Impact Assessments as they show the linkages between ‘cause’ and ‘effect’. Feedback and evidence from the
stakeholder meetings and the literature review have been illustrated in the following causal pathways diagrams. The pathways show points at which changes could be made to enhance the positive and reduce the negative aspects of the proposal. These pathways are discussed more fully later in the document.
Location of Community Clinic

School
- Not co-located with wrap around services
- Students who do not attend a school
- Children not from that school uncomfortable about access
- Misused opportunity to increase whanau ora

Co-location
- Co-located with other providers
- Children not from that school uncomfortable about access
- Whanau not engaged in dental health themselves
- Don’t value access for their children/youth

Co-located with other providers
- Whanau issues: outstanding payments owed to co-located providers
- Staff shortages
- Unable to deliver services as required
- Opportunity cost for scarce funding
- Increase in DNA rates

Tracking system for children/youth through:
- Staff retiring/aging workforce
- Staff shortages

Model of Oral Health Care

Mobile van has physical access issues on school site
- Cost to gain access
- Opportunity cost for scarce funding
- Children/youth with disability require additional support
- Increase in DNA rates

Children & youth miss out on needed intervention

Children/youth walk to hub
- Safety of children/youth
- Failure of scheme for Ty

School issues:
- Students seen as truants by community
- Schools still responsible for student safety
- Administrative cost to schools from student leave passes
- Parental consent required to transport student
- Reliance on third party to transport

Students who do not attend a school
- Reduced oral health
- Negative health and wellbeing outcomes
- Decreased whanau ora
Oral Health

Location of Community Clinic
- School
- Village
- Co-location

Increased access for children at that school
Increased visibility of service
Shared responsibility for oral health and other social services
Opportunity to wrap around services to high needs group

Better dental outcomes for those children
Increased access
Less duplication of effort with other providers and consistency of prevention messages

Improved whanau outcomes
Decreased inequalities

Model of oral health
Staff work collaboratively
Multidisciplinary team
Professional support with competency maintained

Engagement with community/parents/whanau/care-givers
Higher spec clinics which comply with OSH etc
Community Clinic open all year round including holidays and weekends

Better dental outcomes for all
Improved whanau outcomes
Improved oral health

Access for children and youth/community
Van targets high needs children/youth and whanau
Screening van able to pick up 0-5 not currently well looked after

Opportunity to treat kids who aren’t in school eg expelled, T&P homeschooled
Better preventative care
Increased access to dental and other health and social agencies

Decreased inequalities
Increased whanau involvement

Improved oral health
Increased health and wellbeing outcomes
Increased whanau ora

Dental vans used in school holidays to screen/treat adults in low income areas or carry out health education
Opportunity to treat kids who aren’t in school eg expelled, T&P homeschooled
Increased access to dental and other health and social agencies

Improved oral health
Increased health and wellbeing outcomes
Increased whanau ora

Improved whanau outcomes
Discussion

Both locally and internationally, there is increasing recognition of the role that various social, economic, environmental and political factors play in determining the health experiences and outcomes for individuals and social groups. These factors include such determinants as income, employment status, housing, education, social position and social exclusion. They can have both direct and indirect impacts on health, as well as having interrelated and cumulative effects over lifetimes.

Poor health, like poor education, holds back many people. Moreover, the cycle of poor health, unemployment and poverty compounds over a person’s life. (Ministry of Health 2002)

There is clear evidence that the factors which influence wellbeing are not equally distributed between Maori and non-Maori and this is the main cause of higher death and disability rates for Maori. It is therefore important to concentrate on upstream measures and interventions that impact on these determinants of wellbeing, two of which are access to health services in relation to community need, and the service/procedures available, including the quality of the health services.

The causal positive and negative pathways which are illustrated above will now be discussed as they relate to:

- Location of the community clinic in Flaxmere
- Model of oral health care

**Location of the Community Clinic in Flaxmere**

There are three options for the location of the community clinic which were considered as part of this HIA:

- At a primary or secondary school
- Within the Flaxmere Village
- Co-location with another provider
A non-negotiable aspect regarding the location of the community clinic is that any new HBDHB owned and funded clinic facility could only be built on District Health Board or Ministry of Education land. The HBDHB, however, could pay rental to another provider for use of their facility.

**Community Clinic Located in a Flaxmere School**

There are one positive and three negative pathways which relate to location of the community clinic in a school. By placing the community clinic within a school there would be better access for children at that school which would lead to better dental outcomes for those children and hence improved whānau ora.

The literature review commented that:

*For generations of New Zealanders it has been the norm for the dental care to have been initiated by the dental nurse/therapist at school. Parents have not had to take the responsibility of finding a dental carer for their children or to remember to make regular appointments and have not had to be engaged in their children’s dental care. It is likely many assume the dental nurse will turn up at school and take care of their children’s teeth.* (Murphy C. 2009)

A potential negative pathway described by stakeholders was that locating the facility in the school meant that it was not co-located with another health service provider. This could prevent a “wrap around service” being delivered, and hence a missed opportunity to increase whānau ora, with possible negative health outcomes.

The literature review commented that school dental clinics are currently only open on average sixty days per year. Of all the primary and intermediate schools in New Zealand only 45% have a dental clinic on site. Closed clinics are often perceived by the public as a no service situation. While this is not the case it does create a barrier to access for many, when clinics are open on a rotational basis. This was also discussed in some of the stakeholders workshops with one stakeholder commenting that “closed [facilities in] schools are not accessible”.

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4 Wrap Around Service: A coordinated system of support by organisations to meet the varied needs of a family
The stakeholders also highlighted another potential negative pathway where children who do not attend the school where the clinic was located could feel uncomfortable about accessing a facility which was not on their own school grounds. There was also a concern that children who do not attend a school could also be affected. Some stakeholders also commented “Some families may not be comfortable going into the school”.

Community Clinic Located in the Flaxmere Village
By locating the Community Clinic in the village participants believed there would be an increased visibility of service and increased access, potentially increasing volumes, quality and customer satisfaction. This has the potential to lead to better dental outcomes for all, with increased whānau outcomes, decreased inequalities and improved health and wellbeing.

Watt noted that although traditionally schools have been the settings for oral health interventions other settings can also be used e.g. nurseries, youth centres, colleges, places of work, places of worship and community centres. These provide opportunities to target defined populations. Isolated clinical preventive measures have minimal impact and can be wasteful of resources. Joint action in combating the common risks to general and oral health is needed. A range of complementary actions delivered in partnership with relevant agencies and the local community are needed. He concluded that public health strategies based on the common risk approach are more likely to be effective in achieving significant oral health gains. (Watt R.G. 2005)

Community Clinic Co-located with another Health Provider
This path leads to an opportunity to wrap services around the high need group and reduces duplication of effort with other providers and presents an opportunity for consistency of prevention messages.

The literature review discussed that simply increasing children’s access to dental care may not be enough to reduce inequalities. They suggested it was also necessary to make access easier for mothers. One study found that mothers of 3-6 year old children who received regular preventive dental care had a better knowledge of oral health care, more positive attitudes, better self- care
practices and were more likely to seek oral health care for their children. Such findings suggested increasing care of mothers can increase children’s dental use and preventative services.

The literature review found several papers which looked at the integration of dental health with medical care.

Del Cruz et al (2004) suggested primary medical care providers have an opportunity to play an important role in helping children and their families’ access oral health care. They recommended models of care that integrate dental and medical care and noted that the medical office is an opportune site to reach the large numbers of children who make medical but not dental visits.

Mouradian (2001) also recommended opportunities for joint ventures are set up in targeted communities to improve oral health care. She noted the same children are at risk of a whole host of other health and social problems and it would be efficient to approach target populations and common determinants of health jointly, rather than to create lots of new programmes for oral health alone. Dentistry should be more integrated into medicine and the rest of the healthcare system and there should be a shared responsibility for oral health. Mouradian (2001) recommended greater integration of dentistry not only with medicine but also with other social systems serving children and families.

A potential negative pathway for co-location was also expressed by stakeholders at several workshops. Participants were concerned that if the service was partnered with a health provider that they would be denied dental care or would not feel comfortable accessing dental treatment if they had outstanding bills at the medical practice. They also expressed concern that there could be outstanding relationship issues with the co-located service. Some of the stakeholders commented that the facility needed to be on “neutral ground”.

**Trust and Relationships**
The pathways also looked at issues if the provider was unknown to whānau/caregivers/Pacific families, was not culturally appropriate and not timely. Several workshop participants discussed
trust as being essential to having confidence in the dental therapy service. The stakeholders felt it would be beneficial to have a dental therapy assistant to whom they could relate to e.g. Pacific dental assistant for the Pacific Community etc to help establish this trust. One stakeholder commented that ‘people make the difference’ and another stakeholder commented ‘once something goes wrong - we will not come back until we are very ill’. Such issues apply equally across all service types, not just to co-location.

During the youth stakeholder workshop, youth felt it was necessary to have a relationship with their dental therapist to encourage them to access the service.

*Know the person – keep reminding you*
*Nice to have connection (quotes from youth stakeholder workshop)*

The importance of relationships is supported by the literature review. A study done by Kelly et al (2005) compared the psychosocial factors associated with families who did and did not seek dental treatment for their children. African American caregivers emphasised the importance of developing trust, building a good dental provider relationship for their child and avoiding negative experiences. Nearly all caregivers reported neglecting their own oral health care. Many described having little or no childhood exposure to preventative oral health care, with dental care being out of financial reach or not of importance. Comments included a perception that school policies do not treat medical and dental appointments equally so parents wanting to take children out of school for dental appointments received a more negative response than those taking children to a doctor. Non-utilising parents reported their lives were too busy and complicated to overcome the many structural barriers – transport, lack of alternative childcare options, coordinating with employment, negotiating care and working around other commitments. The dentist was not seen as a priority. This would mean children would miss out on the needed intervention and hence reduced oral health.

**Model of Oral Health Care**

**Professional Development and Future Planning**

significant needs in terms of oral health service provision. Some of the key findings from the reports are:

- Significant recruitment and retention issues in the dental therapist workforce.
- Many school dental clinics are in a poor state of repair, and the majority are not suitable to the needs of modern dentistry
- Clinic configurations do not meet the needs of local communities

The key stakeholders also discussed the staff issues in the workshops commenting that in Hawke’s Bay there is an aging dental therapist workforce and that dental therapists can feel professionally isolated. Participants also agreed with the findings from the above reviews that many school dental clinics are in a poor state of repair and are not equipped for modern dentistry. The principles underpinning the new strategy are to have a robust and appropriately trained workforce which provides high-quality service.

Participants believed that by having staff who work together in a collaborative manner in the community clinics and mobile vans, professional support and competency can be maintained. This has the potential to address concerns around professional isolation which is currently being felt by the some of the dental therapists, and it also provides the opportunity for staff mentoring. Dental therapists would be working in purpose built facilities which have equipment suitable for the needs of modern dentistry. The potential positive outcomes from this professional support and more modern equipment are increased volumes of clients seen, increased quality of work and increased customer satisfaction. This is turn is likely to provide better dental outcomes for the whānau.

Dental therapists reaching retirement age was identified as a concern for the dental service in Hawke’s Bay and “succession planning” needs to be taken into account when planning dental therapist services for the future.
Engagement with Whānau

Having the hub clinics open all year round, including holidays, has the potential to improve engagement with community/parents/whānau and caregivers, and this in turn increases the ability to provide a “wrap around” service to high need groups, and subsequent better dental outcomes. These pathways have the potential to result in an increase in whānau health outcomes. In contrast, a potential negative pathway is reduced oral health if whānau are not engaged in dental health themselves and do not get access for their children/youth.

An example of successful engagement is Oranga Niho, a kaupapa Maori dental health service in Flaxmere, Hastings. This service was established as a pilot programme by the Ministry of Health in 2000. The service is integrated within the wider Te Taiwhenua o Heretaunga service and supports Whanau Ora, the strengthening of people within Heretaunga. The service is provided within the tribal boundary of Ngati Kahungunu Iwi.

The aims of the service were to:

- Reduce the prevalence and social impact of dental caries amongst tamariki, rangatahi and pakeke through the establishment, provision and support of culturally appropriate, affordable, and accessible dental services for Maori
- Promote and support the development of appropriate oral health services to meet the dental health needs of Maori
- Develop affordable, appropriate and accessible services for kaumatua and kuia aged 65 or more
- Provide an integrated oral health service – this refers to a Dental Therapist, Dental Surgeon and Oral Health Promoter/Educator, working together to provide oral health services to children, adolescents and low-income adults
- Provide a whānau based oral health service and a service available to the whole whānau through a common provider and co-located with primary health services including primary medical services. The service also aimed at whānau not accessing regular oral health care
- Improve the oral health status of Maori in Flaxmere and Hastings West and reduce the barriers to education, prevention and care which have led to poor Maori oral health status
• Reduce the disparities in oral health status experienced by Maori compared to Pakeha New Zealanders

The service, set up in 2000, was located in the local health service centre. An evaluation midway through its pilot period found it had made considerable progress in raising awareness of the importance of oral health within its target groups and was delivering an effective service to those most in need.

**Importance of Family/Whanau Involvement**

The importance of family/whanau involvement is also supported by the literature review, which found several international papers which suggested that parents who take care of their own teeth and attend dental appointments are more likely to care for their children’s teeth. They are also more likely to understand the need for preventative care. Sohn et al (2007) studied low-income black families with children, 0-5 years, in Detroit, USA. They found that caregivers who had visited the dentist for preventative reasons themselves were five times more likely to take their child to the dentist than those caregivers who had gone to a dentist only for treatment of a problem. There was also a clear association between children’s dental visits and the recency of caregivers visits. The study also found that caregivers who brushed their teeth less than once a day were less likely to take a child to the dentist, however the most significant factor was whether or not parents had visited the dentist themselves for preventative care. The authors noted

“The importance of promoting caregivers preventive behaviours in concert with increasing access to dental care and removing barriers to dental care.”

Talskar et al (2005) analysed data for over 3400 children (aged 2-5 years) from the National Health and Nutrition Examination Survey (USA). They noted parents were the primary decision makers for children’s health and dental care and that understanding their perceptions about dental care could help understand why children did not get the care they needed. Parent’s health beliefs and attitudes toward dental care for themselves were significant predictors of children’s dental care and utilisation.
Gussy et al (2008) undertook a study of 294 parents with infants 12-24 months to identify oral health behaviours, knowledge, attitudes and practices. The authors noted that:

“Parents needed more oral health care information and concluded that health care professionals who had more contact with parents of infants and toddlers than dentists need to be able to provide information, skills and encouragement to facilitate good oral health care.” (Sohn et al 2007)

Mouradian (2001) found that children are dependent on their parents care and need their parents to understand and act on oral health recommendations, to access care and make medical decisions for them. Parental oral disease and previous dental care experiences have a direct influence on children’s care and need to be considered in children’s care. Larger societal policies also influence parent’s ability to promote children’s health e.g. flexible work policies, availability of transport to medical/dental care. Mouradian stated that health care for children cannot be designed without understanding of essential links to parents.

**Oral Health Promotion**

Ismail & Sohn (2001) commented that promoting access to dental care by itself may not lead to the elimination of disparities in the severity of dental care among children at different socioeconomic levels. They found that there is a need for adequate balance between professional oral health care and other health promotion programmes. Oral Health cannot be promoted solely through provision of oral health care but must be promoted at home and through community-based preventive services, general oral health care promotion programmes such as school – based education. Ismail and Sohn (2001) said,

“Eliminating disparities in oral health can only be achieved when all determinants of disparities social, community, personal and familial factors are considered. Access to care alone won’t solve the problem.”
The literature review also looked at oral health as an integral part of the Health Promoting Schools model as a successful way of engaging with parents and the wider school community in a supportive environment for promoting oral care and caries prevention.

A World Health Organization (2003) report noted that schools can provide an important network and channel to the local community. Health promotion activities can be targeted at the home and throughout the community by school personnel and through the pupils passing messages onto other members of the family. Schools can serve as a focal point, providing essential training and health education materials for parents and families. Parents are educated about their own oral health as well as caring for other members of the family. The report stated that educational programmes are most effective when parents and families meet together and support each other at regular meetings in schools.

**Access of Mobile Vans to School Sites**

Concern was expressed by some school principals about access to school sites for the mobile vans. In order for the vans to gain access to some of the school sites they would need to do alterations to the school grounds/entrances and this would be an increased cost for the school. This would divert schools funding and hence they would need to forfeit other school programmes/alterations to provide funding for access to the school vans. If the schools were not able to get the mobile vans physically on site this could mean that the dental service would need to consider other methods of delivering dental therapy services to that school.

**Tracking System**

There was concern expressed by several stakeholders that there needs to be a comprehensive tracking system to ensure children who are referred to the community clinic are followed up to ensure they receive the correct dental treatment. If the tracking/referral system does not work correctly then there will be an increase in “Do Not Attend” rates and hence children and youth may miss out on dental interventions.
The literature review described ‘Head Start’ which is a programme in the USA that works with economically disadvantaged families to promote school readiness of children by providing educational, health, nutritional, social and other services to enrolled children and families. They found that parents expressed difficulties in managing their demanding lives and stated that staff did not understand the problems parents faced on a daily basis. Parents expressed frustration at their attempts to care for their children’s teeth because of busy schedules, conflicting life demands, lack of co-operation from the children and lack of knowledge about how to care for their children’s teeth. The focus groups showed a need for culturally sensitive materials, hands on participatory educational activities, simple clear educational messages and a need to reach pregnant women to increase awareness of the need for very early dental care for their infants.

These are important issues to be looked at when considering how to get parents to take children/youth to the clinics and hence reduce the “Do Not Attend” rate.

**Access for Children/Youth to the Community Clinics**

There are several pathways which discuss the issues around transporting children/youth to the community clinics. These pathways originated from the stakeholder’s workshops that were held.

The first pathway considers children/youth with disabilities and the additional support that would be required for them to access the community clinic, without which they may miss out on needed interventions.

The second pathway explores parental issues which include inability to get/afford time off work, no transport, no money for petrol, lack of knowledge as to the location of the community clinic, again culminating in children not being taken to the clinic by parents and so missing out on needed interventions.

Involving parents in children/youth dental care is often linked into parental perceptions of dental care. The American Academy of Paediatric Dentistry (AAPD) developed a policy paper which looked at the concept of a dental home for all infants, children, adolescents and people with special health care needs. A “dental home” should include integration of all aspects of oral health
and all interactions between patient, parents, medical and dental professionals. This concept comes from the American Academy of Paediatrics definition of a “medical home”. This was described as paediatric primary health care that is delivered in a comprehensive, continuously accessible, family –centred, co-ordinated, compassionate, and culturally-effective way which is delivered and/or supervised by qualified child health specialists. The policy paper noted that children with a dental home would be more likely to receive preventative and routine health care. 

Some of the Stakeholders who were parents commented on transport being an issue in regard to the location of the community clinics:

“Transport is an issue for big families”
“Bus system needs to have flexible times”

The third pathway discussed issues which have been highlighted by schools that may prevent children from accessing needed interventions. These involved:

- Students been seen as truants by the community
- Schools still being responsible for student safety when they attend the community clinics
- Administration costs to schools from having to process leave passes to attend the clinics
- Parental consent required to transport students to the clinics
- Reliance on third parties to transport the students

The fourth pathway looked a student safety with students having to walk/bike to the community clinic and children/youth not being comfortable doing so and therefore missing out on dental interventions.

Access for children/youth/community

The first pathway relating to access, presents potential positive outcomes from utilising dental vans in school holidays to screen/treat adults in low income areas or to carry out health promotion. This concept is not new and the literature review describes the establishment of a
school based mobile dental programme in Texas which was run by a collaboration of community partners which provided free dental care to low income children in schools. (Jackson et al 2007) The vans were used during the school holiday time in community settings to treat low-income adults referred by health and social service agencies.

The next potential positive pathway discusses the mobile van targeting high needs children/youth/whānau. This provides an opportunity to treat children/youth who are not in school e.g. those that are expelled, home schooled etc. This has the potential to lead to an increase in access to dental, health and other social agencies and decreases inequalities. The above study also commented:

*The mobile clinic operated as a safety net rather than as a dental home for patients. However the mobile clinic was able to reach more children than a fixed site clinic.* (Jackson et al 2007)

Another potential positive pathway is the ability of the community clinic to screen 0-5 year olds.

*The Head Start study found that parents were unaware of the importance of fluoride, used poor bottle feeding practices to get children to sleep, were unsure of when dental care should start, few had taken their child for the first dental check up and generally only went for dental care when problems arose. Pregnant women had not had their teeth checked and there was confusion about when children should have their first check.* (Modfidi et al 2009)

By instigating screening of 0-5 year olds these issues would be minimised and there would be better earlier interventions, preventative care and increased whānau involvement. Stakeholders commented that the lack of access for this age group was a significant gap in current services

**Limitations**

- Initially the scoping group discussed focusing the HIA the entire oral health business case/oral health strategy. It soon became apparent that much of the business case had been
agreed and was not subject to change. For the HIA to be of value to the decision makers, it was decided to focus the HIA on the location of a community clinic in Flaxmere and engagement with caregivers/whānau/Pacific families in getting them to access the community clinic, as a final decision on configuration and location of this service has not been made.

- During the workshop for the Pacific community some of the Pacific communities were not represented.

- There were time constraints relating to reporting deadlines due to the outbreak of Influenza H1N1 which diverted the authors time.

**Recommendations**

*This Health Impact Assessment makes the following recommendations to HBDHB Oral Health Steering Group:*

1. **The community clinic should be located in the Flaxmere village and/or co located with another health provider.** This recommendation was supported by the majority of the stakeholders and by the literature review. The literature review also strongly supported having the community clinic in a health facility which would also serve as a “dental home”. Some of the stakeholders advised that this facility should be seen as “neutral” to help establish trust in the service.

2. **Community trust in the service and the staff will need to be established.** This was an important finding from both the literature review and the stakeholder workshops. The employment of dental assistants ‘who the community could relate to’ was seen as a positive move in helping to form relationships and trust. Having dental therapists permanently based at the facility, reinforces the concept of “dental home”. Ensuring currently employed local dental therapists move to the new facility will be critical for ensuring service and relationship continuity.
3. **Implement an oral health community education programme in Flaxmere.** This should be done in partnership with the health promotion advisors in the Healthy Populations Group, as this is a particular skill set of theirs. Parents need to be engaged and encouraged to access dental service for themselves, as studies have shown that parent’s health beliefs and attitudes toward dental care are significant predictors of children’s dental care and utilisation. Access to the service alone may not lead to the elimination of disparities in the severity of dental caries in children at different socioeconomic levels. There is a need for an adequate balance between professional oral health care and other health promotion programmes, in order to engage both parents and the community in good oral health care.

4. **Collaborative approach to engaging schools in any health service delivery and health promotion activities should be taken.** This recommendation came from concerns expressed by school principals about the number of “Health Professionals” accessing schools and it is recommended that a co-ordinated collaborative approach is taken when working in schools. The Health Promoting Schools model has proved a successful way of engaging with parents and the wider school community in creating a supportive environment for promoting health.

5. **Workforce issues and succession planning for Dental Therapists needs to be addressed.** Many stakeholders acknowledged that it was obvious that a number of dental therapists are approaching retirement age.

6. **A robust information and tracking system needs to be in place to prevent children being ‘lost’ in the system.** This is important to identify and monitor who is not using the service. This will assist in reducing the ‘do not attend’ rates and enabling services to respond to potential issues quickly in the future.

7. **Transport options for getting children and families to the community clinic need to be considered as part of planning.** This could include active movement initiatives, such as a ‘walking bus’, to encourage physical activity of the children and families.

8. **Regular communication with the schools and the Flaxmere community about the service developments should occur throughout the process.** Note that it is important that the
following concerns raised by the school principals are discussed and where possible addressed:

- Potential for students being seen as truants by the community
- Schools are responsible for student safety while at school including when they attend the community clinics – this may cause problems
- Administration costs to schools from having to process leave passes to attend the clinics
- Parental consent required to transport students to the clinics
- Reliance on third parties to transport the students
References

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Appendix 1: Literature Review the Health Impact Assessment of Hawke’s Bay DHB Oral Health Strategy
Literature Review the Health Impact Assessment of Hawke’s Bay DHB Oral Health Strategy

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May 2009

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Executive Summary

Oral health is an important element of general health and wellbeing. Tooth decay is one of the most prevalent chronic diseases worldwide and people are susceptible throughout their lives. Recent evidence of an association between disease of the gums and bones in the mouth and diseases such as coronary heart disease has brought an increased focus on the importance of oral health to general health. However oral health has, and continues to be, considered as separate from other health considerations. The perception that oral health is separate from other health has resulted in care of the teeth and mouth having a lower priority than other health problems.

Isolated interventions which merely focus on changing oral health behaviours will not achieve sustainable outcomes in oral health. Public health strategies should tackle the underlying social determinants of oral health through the adoption of the common risk factor approach. The common risk factor approach addresses risk factors common to many chronic conditions. Oral health is determined by diet, hygiene, smoking, alcohol use, stress and trauma. As these causes are common to a number of other chronic diseases, adopting a collaborative approach to improving the environment is likely to be more effective than one that is disease specific. This approach is most effective when local communities become actively involved in efforts to promote their overall health, including, oral health.

Much of the literature relating to barriers to care for oral care comes from the USA and refers to families who are unable to afford private medical/dental insurance (there is no universal access to free dental care for children in the USA) who receive Medicaid, a government funded medical/dental care system. While this system is different from the New Zealand situation many of the barriers these low-income families face are likely to exist for New Zealand families. While structural barriers exist, the attitudinal barriers of people in the community may be more difficult to overcome. Both sets of barriers are important considerations in deciding how new oral health care services will be run and where facilities should be placed.

The literature clearly shows that simply improving access to oral care is not enough to reduce inequalities in oral health. The lack of knowledge, the attitudes and perceptions which affect the oral health care behaviours of those who do not access dental care also need to be addressed.

One of the most prevalent perceptions in the community is that dental care has a lower priority than medical care. Many researchers and commentators recommend integrating medical and dental care, and taking a ‘common risks’ approach to dental care.

The strong emphasis on integrating dental and medical care suggests that locating both services in one clinic/organisation allows for cross referrals and a better opportunity for dental care to become part of health rather than separate from it.

Integration of dental and medical care also increases the opportunity for parental engagement. Families visit medical services more often and, unlike dental appointments, parents almost always attend with their children so there are opportunities for engagement with parents.

Parental engagement is important as the literature shows that parents who seek dental care for themselves also seek dental care for their children.

Engaging adolescents and getting them to practice good oral care is more difficult. The few studies identified in this review suggest using approaches which fit with current youth culture.
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Introduction
The Hawke’s Bay District Health Board is undertaking a health impact assessment (HIA) on the -
implementation phase of the new Oral Health Strategy.

In 2006, the Government announced a reinvestment in a nationwide oral health system for children and
adolescents, and that reducing inequalities in child oral health are government priorities as part of the
ongoing implementation of the New Zealand Health Strategy.

The Ministry of Health proposed a community-based and population-focused oral health service made up
of a mixture of oral health facilities appropriate to the needs of each community and the needs of the
board positions on, and recommendation for, the New Zealand School Dental Service, proposed
reconfiguration of oral health facilities based on the ‘hub and spoke’ model. This configuration usually
consists of strategically sited ‘hub’ clinics with appropriate outreach services and facilities. Outreach
services may include examination and preventive care only, or full treatment services. The focus of
outreach services should be on retaining and improving access to oral health care in a new oral health
facility configuration.

This meant a substantial nationwide upgrade of community-based oral health facilities to support the
delivery of child and adolescent oral health services and to improve oral health outcomes. As a
consequence, funding has been committed that will allow a nationwide investment for facility
refurbishment and development.

and DHB strategic asset and service plans for oral health all identified significant needs in terms of oral
health service provision, as well as a need for a major upgrade in the configuration and delivery of oral
health services.

The reports identified that:
- many school dental clinics are in a state of poor repair, and the majority are not suitable to the
  needs of modern dentistry
- clinic configurations do not meet the needs of local communities
- there are significant recruitment and retention issues in the dental therapist workforce
- enrolment rates of preschoolers are poor, and the continuity of care for adolescents is problematic
- the current Memorandum of Understanding with the Ministry of Education is not the most
effective tool for ensuring school dental clinics are maintained at a standard suitable for the
practice of modern dentistry.

The principles underpinning the new strategy are:
- improving the oral health status of those currently disadvantaged is a priority – particularly Maori,
  Pacific peoples and lower social economic groups
- oral health is an integral part of general health and wellbeing throughout life
- DHBs have the primary responsibility for ensuring high-quality oral health services are available
- a strong preventative programme complements examination and treatment services
- a robust and appropriately trained workforce provides a high-quality service
- evidence-based oral health services require comprehensive information collection and on-going
  research.

The recommendations in the DHBNZ report and the Māori Child Oral Health Review are based on
research among, and experience of, the DHBs and Maori health providers.
There is an expectation from the Ministry of Health that the Hawke’s Bay District Health Board will implement the full strategic vision over the next ten years, but the early focus in phase one is on the development and reconfiguration of the services to children and adolescents (0-18 years).

Overview of the Oral Health Strategy in Hawke’s Bay.
The model of care proposed for the oral health services strategy in Hawkes Bay will engage families early, through prevention and education programmes and by promoting healthy lifestyles from an early age. It will also establish community dental clinics that increase access for Hawke’s Bay high need populations. Services will be flexible and will where necessary be taken to communities.

The hub and spoke model proposed includes fixed and mobile clinics. The model proposes moving from the current 51 school-based clinics to 3 community clinics, 6 fixed clinics based on school sites and a fleet of four double-operator mobile clinic caravans, one single-operator mobile clinic caravan and a mobile screening van.

The proposal supports the establishment of community clinics in the “high need” communities of Wairoa, Flaxmere, and Napier South/Maraenui. Fixed clinics are proposed for Onekawa, Greenmeadows, Hastings Central, Havelock North, Mahora, and Waipukurau.

Mobile screening services will provide low cost, responsive options for healthy populations. Services will target those most at risk such as adolescents out of school. ‘Centres of Excellence’ will develop, encouraging research, innovation, training and recruitment activities.

It is anticipated these initiatives will be phased in over a three year period.

**HIA**

**Aim:**
To identify the positive and negative health and wellbeing impacts on the phase implementation of the oral health strategy in Hawke’s Bay. To provide recommendations to the decision makers about the risks and benefits.

**Objectives:**
- To engage with stakeholders and selected parts of the community, and determine potential approach for future consultation.
- To develop an evidence base about implementation of oral health services in communities (engagement of families and models of care)
- To question the assumption implementation of the oral health strategy will reducing oral health inequalities in Hawke’s Bay
- To question the assumption that implemention of the strategy will maintain or improve access and quality of services.

It was decided the HIA should focus on:
- access to services e.g. sites in relation to community need, and transport access to these sites
- health services e.g. procedures available and quality
- whanau
- children

This literature review addresses two issues:
- the location of the services in the community which facilitate the best access
• strategies to engage whanau/parents to increase participation/attendance for prevention and treatment.

Methods
An initial search was carried out at the Wellington School of Medicine library with the assistance of library staff. This search included Medline and CINAHL databases but did not find many articles. A second search session at the School of Medicine library using additional search terms found additional papers. Google Scholar and the Cochrane library were also searched. Google Scholar proved fruitful but the Cochrane Library was not useful. A Google search found some of the policy documents and was used to seek information about consent practices in New Zealand schools.

Abstracts were scanned, relevant papers from 2000 retrieved. Full papers were read and data extracted.

The early searches found mostly American literature so subsequent searches of Google Scholar were used to seek British, Canadian and Australian information.

Search terms: hub and spoke model oral health, community dentistry, community health centres, adolescent/children/oral health, dental care, access, barriers, primary health care, community based dental facilities, oral health service mobile clinics/service/vans/screening/treatment, fixed clinics, fixed-chair, dental service collaboration, improved access, community engagement/participation, services to vulnerable groups, community outreach, integrated oral healthcare, parent participation/engagement, school-based dental care, centralised services, satellite services, school dental clinics/dental therapists, referral services, hard to reach populations, parental responsibility, parent focused, dental health teams, communication strategies.

Context
Oral health is an important element of general health and wellbeing. Dental decay is one of the most prevalent chronic diseases worldwide and people are susceptible throughout their lives. Dental decay is caused by a complex set of interactions over time. Risks for dental decay include physical (cariogenic bacteria), biological (inadequate saliva flow), environmental (low exposure to fluoride), behavioural (poor dental hygiene), lifestyle factors (inappropriate infant feeding methods, poor diet) and poverty. (Selwitz et al.2007)

Recent evidence of an association between periodontal disease (disease of the gums and bones in the mouth) and systemic disease such as coronary heart disease has brought an increased focus on the importance of oral health to general health but oral health has and continues to be considered as a separate entity from other health considerations (Stokes et al.2009).

The perception that dental health is separate from other health has resulted in dental care being regarded as having a lower priority than other health problems. However poor dental care can cause pain, sleepless nights, limitations in eating leading to poor nutrition and its associated consequences, as well as time off schools and work and the risk of chronic disease. Good dental health is important in overall quality of life, self esteem and social confidence. Dental caries in young children is a good predictor of poor dental health later in life (Watt. 2005).

A World Health Organization (WHO) report (Watt. 2005) noted that though overall improvements in oral health have improved in many developed countries over the last 30 years, health inequalities have emerged as a major public health challenge because lower income and socially disadvantaged groups experience disproportionately high levels of oral disease.

Results
The literature on access to dental care, location of services and engagement of parents in their children’s
dental care seems to be mainly from the USA. Very few papers were found relating to these areas from
Britain, Canada or Australia. Much of the literature concentrated on clinical issues and the prevention and
treatment of caries.

The literature search did not find any dental care systems in other countries exactly like the new model
being planned in New Zealand so it was difficult to find evaluation literature and evidence. Few other
countries offer universal free dental care to children and adolescents. The Australian dental system
delivers dental care to children and adolescents through the dental therapists in school clinics but literature
on access and parental engagement was not found. Victoria in Australia has set up a system of fixed and
mobile clinics which sounds similar to that proposed. A process evaluation of this new system was found
but not an evaluation of the outcomes.

**Barriers to Care**

Much of the literature relating to barriers to care is from the USA and refers to uninsured children (there is
no universal access to free dental care for children in the USA) from low-income families who receive
Medicaid, a government funded medical/dental care system. Children registered under Medicaid receive
care from dentists but only limited numbers of dentists accept Medicaid patients. The limited number of
dentists willing to treat Medicaid patients mean many families have difficulties accessing care and
experience long waiting times to get appointments. They also experience transport difficulties if dentists in
their local area do not participate.

While this system is different from the New Zealand situation some of the barriers these low-income
families face are likely to exist for New Zealand families. The barriers discussed in the literature include:

- parental attitudes and behaviours about dental care and oral health
- cultural beliefs and health practices
- language differences
- fear of dental treatment (there is a whole body of literature about dental fears)
- educational levels of parents/patients
- negative experiences with/ attitudes toward dentists and their staff about treating low-income
  people
- difficulties with scheduling appointments
- transport to clinics
- long waiting times
- lack of knowledge about how to access dental care
- inability to get time off work to attend appointments (for parents to attend themselves or to attend
  with children)
- lack of experience and effectiveness in dealing with the dental system
- a lack of means to pay for treatment (a perception of treatment being high cost)
- low priority given to dental care compared to health care in general
- a belief that dental care is not necessary for very young children
- lack of value placed on dental care
- lack of awareness of the need for preventive care – especially for infants and toddlers
- a perception that dental pain is a normal part of life
- a perception that needing false teeth later in life is normal

Kelly et al (2005) described a qualitative study of 76 Medicaid registered families in Kentucky USA
which compared the psychosocial factors associated with families who did and did not seek dental
treatment for their children.
The ‘utilising’ groups (those whose children had received oral health care) reported higher education levels and health beliefs that included identifying oral health as being important and integral to overall health. This group emphasised the importance of preventing oral health problems, monitoring dental growth and developing life-long preventive oral care habits.

The ‘non-utilising’ families perceived both oral and general health care in emergency rather than preventive terms. They also perceived oral health care as unnecessary for younger children and less important than general medical care. Many were more inclined to use home administered relief for dental pain (pain relievers etc) than they would for medical problems. Among some there was also an expectation and acceptance of tooth loss with aging (parents with false teeth). This group also saw societal provision, coverage and better access to medical care as meaning that oral health care was less important to health. Oral health care was perceived as necessary only for treatment of problems not as prevention.

The non-users did not identify professional preventive oral health care as a parental responsibility and did not associate oral health care with a child’s overall health.

Some parents reported setting a poor example to children, lacking sufficient knowledge about oral health, relying on schools and dentists to transmit oral health information to children and not being in control of their children’s oral health behaviours.

Coloured participants noted the ‘cultural whiteness’ of the dental service as a barrier.

African American caregivers emphasised the importance of developing trust, building a good dental provider relationship for their child and avoiding negative experiences. ‘...’ there ought to be some way parents can have contact with the dentist before they need to take children...”

Nearly all caregivers reported neglecting their own oral health care. Many described having little or no childhood exposure to preventive oral health care, with dental care being out of financial reach or not of importance.

Comments included a perception that school policies do not treat medical and dental appointments equally so parents wanting to take children out of school for dental appointments received a more negative response than those taking children to a doctor.

Non-utilising parents were happy for their children to attend school based oral health appointments alone whereas utilising parents thought parents should be present when children were receiving oral health treatment.

Non-utilising parents reported their lives were too busy and complicated to overcome the many structural barriers - transport, lack of alternative childcare options, co-ordinating with employment, negotiating care and working around other commitments. The dentist was not seen as a priority.

Mouridian (2001) mentioned the difficulties of larger societal policies which create barriers to parents ability to promote children’s health eg flexible work policies, availability of transport to medical/dental care. She noted the need for ‘wrap-around services – transport, case management and other outreach services to overcome these barriers.

Ismail & Sohn (2001) commented that promoting access to dental care by itself may not lead to the elimination of disparities in the severity of dental caries among children at different socioeconomic levels. They carried out a study to test whether or not universal access to oral health care affected rates of dental caries in children from differing socio-economic status (SES) groups.
Data from other countries that have universal dental insurance programmes for children (such as Britain) did not support the assumption that access to dental care can reduce the relative inequalities in dental caries between low and high socio-economic groups. Even in an environment where all children had "free-of-charge" coverage for diagnostic, preventive and basic restorative dental services high rates of dental caries remained more common in children from low-SES backgrounds.

The Ismail & Sohn (2001) study looked at data from a North American site and compared it with Nova Scotia where a universal dental insurance programme had been in place since 1975. The survey looked at 6 – 7 year old children’s oral health, exposure to fluoridated water and parental education. Nova Scotia children visited dentists reimbursed by the government on a fee for service basis and had a relatively high use of oral health services throughout their lives.

The results showed that universal access and use of oral health services did not reduce disparities in caries between children from families with high and low education levels, so access to care alone did not reduce dental caries.

The study authors described the need for a multi-factorial approach that addressed family and community determinants of oral health and highlighted the importance of healthy behaviours in prevention of dental caries. Children with low caries brushed their teeth at least once a day, first visited a dentist between age 2 – 5 for a check-up and had one parent with a university education. Children with optimal fluoride in the school water supply also had a low rate of dental caries. Children whose first dental visit was for a check-up or cleaning rather than treatment had fewer caries. All these things need to be looked at collectively – factors cannot be considered in isolation.

The Nova Scotia scheme may have reduced inequities in access to oral health care but not necessarily inequalities in oral health status. This points to a need for an adequate balance between professional oral health care and other health promotion programmes. Oral health cannot be promoted solely through provision of dental care but must be promoted at home and through community–based preventive services, general oral health care promotion programmes such as school-based education and the mass media’s promotion of dental appearance.

Eliminating disparities in oral health can only be achieved when all determinants of disparities – social, community, personal and familial factors are considered. Access to care alone won’t solve the problem.

Birch et al (2005) summarised dental care systems in Australia, New Zealand, Canada and the USA. The authors noted that the Australian oral health care system for children operated with dental therapists in schools and accounted for half of dental visits for 5 – 11 year olds but only a fifth of dental visits for 12 – 17 year olds. Increasing staff shortages and an aging workforce led to these services targeting children at higher risk of dental disease. However strict processes for gaining positive parental consent to examine and treat children also meant that those from poorer non-English speaking backgrounds were less likely to receive care.

The Community Dental Service of the British National Health Service (NHS) provided screening of schoolchildren and treatment for special needs populations and other groups who had problems accessing care (generally low income groups). The NHS General Dental Service covered services provided by private dentists to NHS-registered patients (adults and children). To maintain registration patients were required seek care within a 15 month period. Services for children (and pregnant women, unemployed people & low income families) were paid in full by the NHS. Sixty percent of children were registered to receive NHS care.
Birch et al (2005) identified cost as a universal barrier to care. For all types of adults and in all countries the incidence of not visiting a dentist because of the cost was much greater than the incidence of cost being barrier to visiting a doctor.

**Location of services**

**Care linked with schools**

School dental services were discussed in a few papers and were for the most part cited as an innovative and successful method of reaching ‘hard to reach’ children in poor communities. These papers were from the USA where there is no universal healthcare and where the ‘hard to reach’ are those from low socio-economic status groups unable to afford private insurance. The Medicaid system reimburses dentists who care for patients covered by the state insurance system but reimbursement levels are lower than fees paid by private insurance companies and many dentists do not participate in the scheme for this reason. The low number participating dentists makes access for low income families difficult.

**New Zealand**

One article (Nash 2004) described the New Zealand School Dental Service as an “icon” and quoted a dental colleague as saying “The School Dental Service has become an integral component of the New Zealand culture. To Kiwis it is like motherhood, apple pie, and the flag.” Nash went on to say “And it is highly valued, not only by the public, but by dentists as well.”

The school dental service was started in New Zealand in 1921. Dental treatment at school has therefore been the norm for many generations of New Zealanders. Parents/caregivers have traditionally not been present when children have been seen/treated by the dental therapist at school though parents are generally welcome to attend. Preschool children need to be enrolled by their parents (generally encouraged by Plunket nurses and other medical carers) but children who have not already been enrolled receive enrolment information when they start school. A search of school websites suggested there are inconsistent attitudes and policies to parental consent for treatment. In some instances parental consent is required for all examinations and treatments but in others, parents are required to opt-out of treatment, so, if the parent does not respond within a specified time consent is assumed.

For generations of New Zealanders it has been the norm for the dental care to have been initiated by the dental nurse/therapist at school. Parents have not had to take the responsibility of finding a dental carer for their children or to remember to make regular appointments and have not had to be engaged in their children’s dental care. It is likely many assume the dental nurse will turn up at school and take care of their children’s teeth.

The Auckland Regional Dental Service website noted that parents are welcome to attend any appointment with their child. The system described on school websites suggests children go out of class to attend appointments with the dental therapist when they are at the school clinic so parents are generally not present during appointments. Children who attended a school without an onsite dental clinic have often walked to the local school with a clinic. There has not been an expectation that parents would accompany the children. It is likely therefore that parents/caregivers consider it normal for children to see dental carers unaccompanied (unlike medical appointments which children seldom, if ever, attend without a parent or carer). Parents probably recall having seen the dental nurse without their parents being present when they were children. This means many parents have probably not have not been involved in discussions with dental carers and prevention information has been delivered second hand and/or through pamphlets, or not at all.

School dental clinics are currently only open on average sixty days per year. Of all primary and intermediate schools in New Zealand only 45% have a dental clinic on site. This means that the current
school dental clinics are often closed and not in use. Closed clinics are often perceived by the public as a ‘no’ service situation which is not the case, however it does create a barrier to access for many when clinics are open on a rotational basis. This situation is one of the issues that has led to moves towards a different approach to oral health service provision. There is recognition that the provision of fixed facilities in the community, open year round would offer better access as families can attend when they are able to. There is now recognition that consent is required for all child/youth treatment and that parents’ participation is required when children need treatment. New services will work with families/whanau to support access to care and strengthen the focus on prevention. (personal communication Sue Dasler, Senior Oral Health Advisor, Ministry of Health).

The new Ministry of Health dental health policy proposes putting oral health care into existing services in the community using a mix of fixed and mobile units. The intention of these changes is to:

- increase pre-school and infant contact and preventive activities;
- reduce barriers to access particularly for families with greatest needs;
- improve access to services for adolescents.

These community facilities may be developed at many different locations, including school based clinics, stand alone facilities, or co-located as part of community health centres. The mix of facilities should be appropriate to the needs the population. The location of fixed and mobile facilities will be prioritised according to the community oral health needs.

Mobile services will offer greater flexibility to take services to high need communities, for example lower decile and rural/remote schools so these population groups achieve improved access. This approach recognises that some children and adolescents in higher decile areas will need to go to a community clinic to access their oral health care.

*Level one* mobile units will focus on providing a suite of prevention services including examinations, fissure sealants, xrays and health promotion. *Level two* mobile units will offer a full suite of care, that is preventive and treatment, and may be located on school grounds, marae, adjacent to medical centres, or community centres and other locale where priority groups are likely to attend.

A major reinvestment of child and adolescent oral health services is currently underway as there is widespread recognition that there are inequalities in oral health outcomes and access to oral health services, and that the facilities constructed in the 1960s and 1970s are no longer ‘fit for purpose’ and do not meet the needs of communities in the present day. This is the first full-scale change in child and adolescent oral health services since the School Dental Service was introduced in 1921. (Personal communication Sue Dasler, Ministry of Health)

**Australia**

Only a small number of papers which discussed the Australian oral health care system for children were found. Oral health care in Australia is provided through a school dental service with a mix of fixed and mobile clinics. The literature suggests simply providing clinics/access for children is not an adequate response to oral health care.

Spencer (2004) stated that in Australia a deliberate policy of intervention involving a program using special purpose dental therapists resulted in vulnerable children having far better access to public dental care than that enjoyed by vulnerable adults. However according to 2002 figures, only 50 per cent of Australian children last visited a school dental clinic. The school dental services in the two largest states, New South Wales and Victoria, had a long history of underfunding that hampered coverage for all children. This chronic problem, coupled with increased competition for direct public subsidy for public dental care, left the school dental services unable to eliminate the inequalities in access to dental care among children. The school dental services provided both supporting evidence of policy directions to be
pursued and a cautionary note about expectations for achievements unless sufficient direct public subsidy and innovative programs were established and maintained.

Spencer recommended a revitalisation of the Australian school dental services and recommended:
• a commitment to population child oral health promotion. Specific oral health promotion activity to be initiated in the areas of maternal and child oral health, preschool oral health, and school oral health. An emphasis on health promotion to help shift the balance from risk to protective behaviours or exposures;

• a commitment to expand school dental service coverage especially to lower socio-economic children who slip through the safety net;

• a strong emphasis on clinical prevention on the basis of risk identification and management as part of the provision of dental care;

• continued reform of the targeting of the school dental services and prioritisation among children enrolled in the school dental services;

• consideration of the wider mission of the school dental services to change oral health care attitudes and behaviours in children.

An evidence review of oral health strategies was carried out by the Dental Health Services in Victoria, Australia (Dept Human Health Service, 2000) to inform the development of a new dental strategy Oral Health Promotion Strategy for 2000 -2004. The key evidence based recommendations for Victoria arising from this review also noted that simply providing access to care was not enough. The recommendations were based on the Ottawa Charter and included;

Development of Healthy Public Policy
• Supporting primary health care interagency collaboration and networking
• Generally improving access to dental care

Creating Supportive Environments
• Community access to fluoride (either water and/or toothpastes)
• Topical fluoride therapies for at risk groups

Strengthening Community Actions
• Enhancing environmental support within communities, such as canteens and foodservice, toothbrushing in childcare centres, role model behaviours, resource materials to meet the needs of culturally diverse populations
• Increasing education levels of parents, particularly regarding dental caries in infants
• Improving access to custom-made mouth-guards for risk groups
• Improving parental capacity to support child and adolescent oral health such as support for parenting skills, parental encouragement and increasing preventive knowledge
• Developing oral health knowledge among health professionals who have access to at risk groups eg Maternal and childcare nurses, childcare workers etc

The development of personal skills
• Reducing intake and frequency of sugar consumption in high risk individuals
• Developing oral hygiene skills

Reorientation of health services
• Improving general medical and dental health practitioner knowledge of oral cancer incidence, risk factors and detection methods
• Improving access to dental sealants, especially for high risk individuals
• Improving access to timely dental examinations
• Actively promoting policies that promote minimum treatment interventions and effective preventive strategies and health promotion, and not just treating the aftermath of dental disease.
Integrating dental care with medical care

The separation of oral health care from general health care and the health of the rest of the body and the resulting perception that oral health care is less important was discussed in a number of papers.

This perception was discussed by Fitzgerald et al (2004) in a study of New Zealand adolescents’ perceptions of oral health and oral health care. The teenagers expressed the view that dental treatment was not seen as ‘value for money’ and that doctors were a better deal as they ‘look at the whole body’ and can deal with ‘serious problems’. Dental problems were not seen as important and teeth were only related to health when something went wrong. The teenagers considered dental problems to be a cosmetic rather than a health issue. The authors noted the lack of funding for oral health care for adults sends a message that seeing a dentist is an optional extra in life available only to those who can afford to pay.

Watt (2005) also commented on this separation. “One of the major criticisms of clinical preventive measures and dental health education has been the narrow, isolated and compartmentalised approach adopted, essentially separating the mouth from the rest of the body.” Watt went on to say oral health programmes developed in isolation from other health initiatives leads to duplication of effort and often conflicting and contradictory messages being delivered to the public. Watt recommended the common risk approach which links common factors in heart disease, obesity, diabetes and oral health.

Watt noted that although traditionally schools have been the setting for oral health interventions other settings can also be used eg nurseries, youth centres, colleges, places of work, places of worship and community centres. These may provide opportunities to target defined populations. Isolated clinical preventive measures and educational programmes have minimal impact and can be wasteful of resources. Joint action in combating the common risks to general and oral health is needed. A range of complementary actions delivered in partnership with relevant agencies and the local community are needed. He concluded that public health strategies based on the common risk approach are more likely to be effective in achieving significant oral health gains.

Heuer (2007) noted ‘Pediatric and family nurse practitioners in primary care settings are uniquely positioned to change the perception that oral care is less important than general health care’. Her study described the Neighbourhood Outreach Action for Health programme (NOAH) (Arizona USA) which targeted vulnerable populations and integrated oral health into comprehensive care for families through school-based, primary care services and was designed to reach at risk, uninsured children. It began in 2001 with oral screening and referral by school nurses (in general health clinics) but evolved into a interdisciplinary, integrated care programme which provided preventative and restorative dental health services at school health clinic sites. Families received co-ordinated care from multiple disciplines during a single patient visit. When children were seen at their first Early and Periodic Screening, Diagnostic and Treatment (which included immunisations) they were also seen by a dental hygienist. Oral hygiene care and treatment planning was co-ordinated with their primary medical care.

dela Cruz et al (2004), in a paper that reported on a study which examined referral decisions of medical providers and the factors which influenced their decision to refer children on for dental care, noted that most children are exposed to medical care but not dental care at a very young age. Because of this the authors suggested primary medical care providers have an opportunity to play an important role in helping children and their families access oral health care. They recommended models of care that integrate dental and medical care and noted that the medical office is an opportune site to reach the large numbers of children who make medical, but not dental, visits.

dela Cruz et al referred to USA Surgeon General workshops, held in 2000, which recommended preventive oral health care and risk-based dental referrals be provided in doctors offices. Both the American
Academy of Pediatrics and American Academy of Pediatric Dentistry encouraged non-dental providers to include the assessment of children’s oral health as a normal part of their care.

dela Cruz et al recommended using opportunities to link primary pediatric care and health promotion to oral health concerns to help change the situation whereby oral health care is often forgotten, ignored or seen as not as important. This would require the promotion of personal hygiene and good nutrition being explained in both medical and oral health contexts.

Children are seen often by primary care medical providers in their early years but the medics generally have limited training in oral health. (Mouradian 2001) Primary care practitioners (doctors, nurses etc) should help share responsibility for children’s oral health and become more involved in it. Mouradian recommended opportunities for joint ventures be set up in targeted communities to improve oral health care. She noted the same children are at risk of a whole host other health and social problems and that it would be efficient to approach target populations and common determinants of health jointly, rather than to create lots of new programmes for oral health alone. Dentistry should be more integrated into medicine and the rest of the healthcare system and there should be a shared responsibility for oral health. Mouridian recommended greater integration of dentistry not only with medicine, but also with other social systems serving children and families.

A Canadian survey, Main et al (2006), identified a range of issues which affect access to oral health care. These included the need for oral health to be recognised as integral to primary health and the need for alternative delivery sites such as community health centres. These services must be affordable, appropriate (especially to low socio-economic groups), accountable and sustainable.

Mouradian et al (2003) described a different collaboration between medical and dental practitioners. Integrating Oral Health into Primary Care (ICOHP) was a project in the USA which involved training primary care medical staff to promote oral health to families. The focus on families was important as the programme aimed to change parental attitudes, cultural practices and behaviours associated with oral disease. The paper described the training process for medical staff and noted that collaboration between dental and medical practitioners at the community level was important to ensure children with identified needs were able to access care. The authors noted educational institutions (in this case dental universities) had a key role in providing the training programmes and modelling dental-medical relationships.

Pierce et al (2002) noted the desirability of the integration of medicine and dentistry and advocated for providing oral health activities in convenient locations that are easily accessible to a large number of people. Pierce et al described a North Carolina Medicaid programme in which doctors provided preventive dental treatment. The goals of the programme were for physicians to educate parents about health, identify children with dental caries and refer them to a dentist, and to apply fluoride varnish to children (under 3 years) The programme found that with very little training (2 – 3 hours) the doctors could identify dental problems.

Victoria, Australia put out a new plan for dental care in 2004. The planning document, Oral Health Strategic Plan & Service Plan for Victoria, 2005 -2010, described a service within which dental care is integrated into primary care settings.

The plan states:
Future planning and new infrastructure will result in:
1. **Health Service Integration**: New clinics will co-locate child and oral health services within a primary care setting
2. **Targeted Development**: New clinics will be developed in identified areas of greatest needs.
3. **Sustainable Development**: New clinics will be developed in identified regional ‘hubs’, have a minimum of four chairs, and will offer support to smaller pre-existing ‘spoke’ clinics.
Integrated oral health services: a step in the right direction (Dept of Humans Services 2008) evaluated of the change process of four participating services and Dental Health Services Victoria from June 2006 – August 2007 but did not evaluate the outcomes of the changes. However, the document stated ‘From experiences so far, integration is achieving measureable benefits for clients and dental staff.’

The evaluation also noted ‘Clients see benefits when families can be present together, and follow-up appointments for different treatments can be made at one site’.

A planning document from one region in England also recommended integration with primary health in the Oral Health Strategy 2004- 2009 (NHS Dental Care Agency, 2005). This strategy noted that oral health promotion should be fully integrated within the National Health Service and the key between good oral health and good general health must be recognised. The plan identified the need for environmental and clinical changes and the need for a wide range of partners to work together. It stated ‘Successful programmes require community involvement and integrated approaches across many sectors with an emphasis on making healthy choices, ‘easier’ choices.’

No evaluation of this plan was found.

The concept of a ‘dental home’ was reported in a policy document from the American Academy of Pediatric Dentistry (AAPD). The AAPD supported the concept of a dental home for all infants, children, adolescents, and persons with special health care needs. A ‘dental home’ should include integration of all aspects of oral health and all interactions between the patient, parents, medical and dental professionals. This concept comes from the American Academy of Pediatrics’ definition of a ‘medical home’. This was described as pediatric primary health care that is delivered in a comprehensive, continuously accessible, family-centered, coordinated, compassionate, and culturally-effective way which is delivered and/or supervised by qualified child health specialists. The policy paper noted that children with a ‘dental home’ would be more likely to receive preventive and routine health care.

Integrated Dental and Medical Care in New Zealand

The Oranga Niho is a kaupapa Maori dental health service in Flaxmere, Hastings. It was established as a pilot programme set up by one of six Taiwhenua Maori health providers which operate throughout the tribal boundary of Ngati Kahungunu Iwi. The aims of the service were to:

- Reduce the prevalence and social impact of dental caries amongst tamariki, rangatahi and pakeke through the establishment, provision and support of culturally appropriate, affordable, and accessible dental services for Maori
- Promote and support the development of appropriate oral health services to meet the dental health needs of Maori
- Develop affordable, appropriate and accessible services for kaumatua and kuia aged 65 or more
- Provide an integrated oral health service – this refers to a Dental Therapist, Dental Surgeon and Oral Health Promoter/Educator, working together to provide oral health services to children, adolescents and low-income adults
- Provide a whanau based oral health service and a service available to the whole whanau through a common provider and co-located with primary health services including primary medical services. The service also aimed at whanau not accessing regular oral health care
- Improve the oral health status of Maori in Flaxmere and reduce the barriers to education, prevention and care which have led to poor Maori oral health status
- Reduce the disparities in oral health status experienced by Maori compared to Pakeha New Zealanders
The service, set up in 2000, was located in the local health service community. An evaluation midway through its pilot period found it had made considerable progress in raising awareness of the importance of oral health within its target groups and was delivering an effective service to those most in need.

The evaluation report listed similar Maori oral health services linked with other community and medical providers and services:

- Te Whare Kaitiaki, a whanau dental clinic in the School of Dentistry in Dunedin provided dental care for Maori in a Maori environment by Maori providers at the School of Dentistry.
- Ngati Porou Hauora - dental care for people in the Ngati Porou, East Coast area.
- Tipu Ora in Rotorua and the School Dental Service - clinic located within the Tipu Ora facilities since 1998. It provided low cost appropriate dental services to children, women and their whanau.
- Te Atiawa is an iwi based dental health service in New Plymouth for whanaui which open in 1999 located on the marae and open 2 days a week.
- The Mid-North Pilot with Northland Health and Ngati Hine Health Trust delivered a primary school based program focusing on tooth-brushing and preventive dentistry.
- Te Whanau o Waipareira Trust and Te Puna Hauora o Te Raki Paewhenua (West Auckland, South Auckland and North Shore) delivered integrated care through contractual arrangements whereby a dentist and a dental therapist provide care to community service card holders and young Maori children. It was funded through the Health Funding Authority (HFA), Work and Income New Zealand (WINZ) and Accident Compensation Corporation (ACC).

Mobile clinics

Jackson et al (2007) described the establishment of a school-based mobile dental program in Texas (USA) run by a collaboration of community partners which provided free dental care to low-income children in schools. The authors noted the success of this project came from the involvement of many partners, especially the schools and schools staff. Parental consent was required for children to be treated. An ‘opt-out’ consent option was used for screening but consent was needed for treatments. One staff person was devoted to getting parents to return consent forms. The authors noted consent form return rates were much higher when teachers encouraged their return. The programme employed staff to develop and maintain relationships with schools and parents and offered incentives (vouchers) for teachers and children. Originally the mobile clinic schedule in each school was based on the number of children who had returned consent forms from the previous year but the rigid schedule of dates prevented all children from getting full care. A more flexible approach allowed the van to stay at the school till all children had completed treatment. Children with problems that could not be treated in the mobile unit were referred to dentists who treated the children free of charge (there was a register of local dentists who agreed to treat two children per year free of charge).

Maintenance of the vans was noted as a difficulty as moving them jostles equipment.

The programme identified schools as an ideal setting because of the “captive” audience.

The vans were used during school holiday time in community settings to treat low-income adults referred by health and social service agencies.

The authors noted one of the disadvantages of the mobile clinic was that it operated as a “safety-net” rather than as a “dental home” for patients. However the mobile clinic was able to reach more children than a fixed-site clinic.

Douglass (2005) noted that productivity of mobile clinics is dependent on the number of days a unit can be fully utilised. Douglass identified routine maintenance, lack of driver/other staff, vacations, inability to locate suitable site, weather related issues, heating/cooling, garage space, jarring of equipment on poor
roads all as problems which affect usage. She noted that there are many pitfalls in the use of mobile clinics – mainly economic and functional problems. Douglass noted mobile clinics can decrease missed appointments when run in conjunction with schools as the mobile units can address transport problems for families.

**Strategies to engage parents**

The literature search found very few papers which related to the engagement of parents and/or families as part of oral health care other than in the context of providing education or information to parents as a part preventive oral health. Generally working with parents focused on the provision of written information about their children’s oral health status and interventions (eg number sealants placed, disease identification, urgency of treatment, importance of regular dental visits and providing a contact phone number for questions).

There was some literature which discussed oral health as an integral part of the Health Promoting Schools model as a successful way of engaging with parents and the wider school community in a supportive environment for promoting oral care and caries prevention.

The WHO (2003) report noted that schools can provide an important network and channel to the local community. Health promotion activities can be targeted at the home and throughout the community by school personnel and through the pupils passing messages on to other members of the family. Schools can serve as a focal point, providing essential training and health education materials for parents and families. Parents are educated about their own oral health as well as caring for other members of the family. Schools can support each other at regular meetings in schools. Good communication between school oral health services and parents is of paramount importance. Equally, students are encouraged to impart the knowledge and skills that are beneficial to other family members. For those who do not attend schools, outreach programmes that involve using parents and family members as facilitators can help promote oral health to these families and entice them to be part of the school community.

Other ways of engaging with parents about dental care in the literature relate to an integrated medical and dental model, and to parents own dental behaviours, as significant predictors of their care of their children’s dental needs.

Heuer et al (2007) described the Neighbourhood Outreach Action for Health programme (NOAH) (Arizona USA), a co-ordinated and integrated model of care which operated through a school health clinic. The programme encouraged better communication with families and providers. Families responded well to integrated care and ‘no-show’ appointment rates decreased. The integrated model put oral health care into regular established medical age-related prevention strategies. Early findings showed very good patient outcomes, as measured by immunisations, well-child care and completed dental treatments. Recall systems were put in place to ensure return visits. Interdisciplinary care co-ordination allowed for reinforcement of health education practices which included nutrition, medical and oral care. This provided opportunities for dental care information to be provided for families in the medical setting.

Modfidi et al (2009) described Head Start, a national program in the USA that works with economically disadvantaged families to promote school readiness of children by providing educational, health, nutritional, social and other services to enrolled children and families. Early Head Start (EHS) promotes healthy prenatal outcomes, enhances the development of infants and toddlers, and promotes healthy family functioning.

The authors commented that because EHS programmes offered services for pregnant women and infants it was able to reduce risk factors for oral disease and promote oral health at an early stage before children
got dental caries. The study, which used focus groups of EHS staff and parents, explored opinions about, and values placed on, oral health for young children and pregnant women, practices regarding children’s oral health and potential education opportunities.

Staff and parents both expressed frustration at their attempts to communicate with each other. Parents expressed difficulties in managing their demanding lives and stated that staff did not understand the problems parents faced on a daily basis. Parents expressed frustration at their attempts to care for children’s teeth because of busy schedules, conflicting life demands, lack of co-operation from the children and lack of knowledge about how to brush their child’s teeth. Parents gave a variety of reasons for not practicing oral care – they were too tired, it was not a priority, they didn’t know how to incorporate oral health practices into daily routines, the pervasiveness of sweet foods in the environment and the difficulty they had keeping sweet foods out of their children’s diets. Parents were unaware of the importance of fluoride, used poor bottle feeding practices to get children to sleep, were unsure of when dental care should start, few had taken child for first dental check up and generally only went for dental care when problems arose. Pregnant women had not had their teeth checked and there was confusion about when children should have their first check. The focus groups showed a need for culturally sensitive materials, hands-on participatory educational activities, simple, clear educational messages and a need to reach pregnant women to increase awareness of the need for very early dental care for their infants.

dela Cruz et al (2004) noted that because most children receive medical but not dental care from an early age, primary care providers have an opportunity to assist children and their families get dental care. Medical practices can reach large numbers of children, and doctors and their auxillaries can; assess children’s risk for dental problems; teach parents about the risks and prevention measures; and refer them on to dental services.

The study surveyed 69 pediatric and 49 general medical clinics about the Into Mouths of Babes programme. The programme focused on oral health care of infants and toddlers who received Medicaid. The programme aimed to improve the oral health knowledge and skills of medical staff and encouraged them to include preventive oral health care into their services. The study found that nurses and allied staff in medical centres can assist with reaching, and engaging, parents in children’s oral health care and that they can reinforce dental messages.

Several papers were found which suggested parents who take care of their own teeth and attend dental appointments are more likely to care for their children’s teeth. They are also more likely to understand the need for preventive care.

Grembowski et al (2008) explored whether or not mothers who received regular dental care were more likely to seek oral health care for their children.

The authors commented that simply increasing children’s access to dental care may not be enough to reduce inequalities. They suggested it was also necessary to make access easier for mothers. Their study found that mothers of 3 – 6 year old children who received regular preventive dental care had a better knowledge of oral health care, more positive attitudes, better self-care practices and were more likely to seek oral health care for their children. Their findings suggested increasing care of mothers can increase children’s dental use and preventive services.

Sohn et al (2007) studied low-income black families with children, 0-5 years, in Detroit, USA. They found that caregivers who had visited the dentist for preventive reasons themselves were five times more likely to take their child to the dentist than caregivers who went to a dentist only for treatment of a problem. There was also a clear association between children’s dental visits and the recency of caregivers visits.
The study also found that caregivers who brushed their teeth less than once a day were less likely to take child to dentist, however, the most significant factor was whether or not parents had visited dentist themselves for preventive care.

The authors stated ‘... free care is not sufficient to eliminate differences in dental care utilisation and oral health care in underserved children. Self-care preventive behaviours are paramount in combating oral disease. It takes a personal commitment to preventive orientation by caregivers to improve utilisation of dental care among low income children. This underscores the importance of promoting caregivers’ preventive behaviours in concert with increasing access to dental care and removing barriers to dental care.’

Talekar et al (2005) analysed data for over 3,400 children (aged 2 -5 years) from the National Health and Nutrition Examination Survey (USA). They noted parents are the primary decision makers for children’s health and dental care and that understanding their perceptions about dental care can help understand why children do not get the care they need. Parents’ health beliefs and attitudes toward dental care for themselves were significant predictors of children’s dental care utilisation.

Gussy et al (2008) studied 294 parents with infants 12 -24 months to identify oral health behaviours, knowledge, attitudes and practices. The parents were recruited through maternal health carers. The results showed that parents have variable knowledge about dental care and that their knowledge of how to prevent dental caries was not complete. Authors noted that parents needed more oral health care information and concluded health care professionals who had more contact with parents of infants and toddlers than dentists need to be able to provide information, skills and encouragement to facilitate good oral health care.

Mouradian (2001) noted that children are dependent on their parents care and need their parents to understand and act on oral health recommendations, to access care and make medical decisions for them. Parental oral disease and previous dental care experiences have a direct influence on children’s care and need to be considered in children’s care. Larger societal policies also influence parents’ ability to promote children’s health eg flexible work policies, availability of transport to medical/dental care etc.

Mouradian stated that healthcare for children cannot be designed without understanding of essential links to parents.

**Adolescents**

Adolescents present other challenges. Parental involvement may be less important but teenagers share many of the perceptions of their parents. Different approaches seem to be needed to get them to engage with good oral care with adolescents.

Adolescents make their own decisions about oral health care and need to be specifically targeted with information about oral self-care. However preventive programs targeting adolescents have met with mixed success.

The Department of Human Health Services in Victoria, Australia. carried out an evidence review of health promotion resources in 2000. This review noted the following studies on adolescent oral health care.

A school-based program reported by Albander et al (1994) which involved parental support and encouragement for the comprehensive three phased approach, demonstrated improvement in plaque control practices and gingival condition. However, Blinkhorn et al (1981) again using a randomised, control method, showed only an improvement in knowledge with little impact on health outcomes.
A community outreach program to increase access to care for adolescents in South Australia demonstrated value for youth through dental service collaboration and approaches which recognised youth culture and shaped services reflecting their needs. The use of a mobile screening and information service employing an intra-oral camera received positive feedback and good attendance rates in school settings, but subsequent dental clinic attendance information was unavailable. (Dept Human Health Service, 2000)

A community outreach program for homeless youth in Sydney had some success in increasing dental service use among homeless and in some cases, drug addicted young people. The program identified the importance of culturally appropriate dental professionals and flexibility in appointment allocation. The program was labour intensive, and long-term health outcomes were not demonstrated. (Dept Human Health Service, 2000)

New Zealand adolescents can get publically funded dental care under the Dental Benefit Scheme but uptake is lower than school dental services. (Fitzgerald et al 2004) Internationally it is common for adolescents not to take advantage of oral health care services. Fitzgerald et al (2004) studied adolescent’s views of dental care using focus groups. Participants knew what good dental practice was but didn’t necessarily practise it and tended to seek dental treatment only when they had a dental problem. Most were not regular/preventive attenders of dental treatment. The adolescents believed dental treatment was expensive. The authors suggested this was likely a received view from their parents since they did not have to pay for their care. The adolescents also thought dental care was not value for money compared with medical treatment. Dental problems were not seen as important for health. The adolescents’ concerns about oral health related more to appearance and bad breath. The authors cited other studies which commented on adolescents use of medical care and noted that they were more likely to use primary care health when services specifically aimed at them. Other barriers to the adolescents seeking oral health care included: free dental care was not regarded as relevant to them; past negative experiences with dentists; the adoption of their parents’ perceptions regarding high cost of oral health care; and the view that dental clinic/office environment was unappealing. Fitzgerald et al’s recommendations included a trial of services designed (with adolescent input) to appeal to adolescents and that dentists address attitude issues perceived by adolescents.

A dental service social marketing campaign promoting free dental services for adolescents in the Canterbury/West Coast region was launched in 2004 - “It’s Free & It’s All Good”. The campaign raised utilisation rates at low decile schools by 33% in three years. By 2006 74% of Canterbury adolescents had used the free service. The campaign was developed in response to DHB commissioned research via the University of Otago which investigated young people’s attitudes towards dental clinics. Key points:

- oral health needs to be interesting and relevant to young people
- the campaign messages were used in print, radio, tv, posters
- the campaign is now being picked up by other DHBS and CDHB now supplies posters and promotion materials to other DHBs
- good engagement from private dentists/contracts to provide adolescent dental services
- now exploring ways to reach and involve parents to ensure youth keep dental appointments

(Personal communication Sue Dasler Ministry of Health)

Dental Anxiety
Dental anxiety and the subsequent avoidance of dental care and deterioration of oral health can pose a significant problem for the dental profession. Not much is understood about what causes or relieves this anxiety though fear of pain seems common.

Nicolas et al (2007) report the incidence of moderate or severe dental anxiety to be between 10 -18 percent of the population in western industrialised countries. Patients with anxiety have long intervals between dental appointments and a frequently cancel appointments. The authors noted the anxiety often starts in childhood and that early education in children has a positive influence on dental anxiety and can improve long term dental follow-up. The development of dental anxiety can be prevented by pain control, behaviour management, consideration of the patient as a whole and/or, if necessary, access to sedation. The authors noted treatment of dental fear needs a multidisciplinary team and is time consuming time. They made mention of the importance of training dentists in prevention. Treatment programmes for anxious patients which operated in Northern Europe were mentioned. However, limitations of the treatment programmes cited were that it was expensive and not recognised by social security systems thus increasing inequalities in oral health for people with dental anxiety.

Bare & Dundes (2004) in a small, non-random sample of patients with dental anxiety noted these patients clearly preferred dentists who were friendly, dressed formally and male. The authors suggested female dentists may need to give patients more reassurance. The patients interviewed in the study suggested there may be value in televisions with headphones, guided imagery, relaxing drugs, and nitrous oxide to assuage anxiety. Other recommendations included muting the sound of the drill and a pleasant environment – artwork on the walls, books, magazines, background music and a slightly cool office temperature. The authors noted the need for further research to reduce anxiety and therefore increase regularity of dental visits.
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