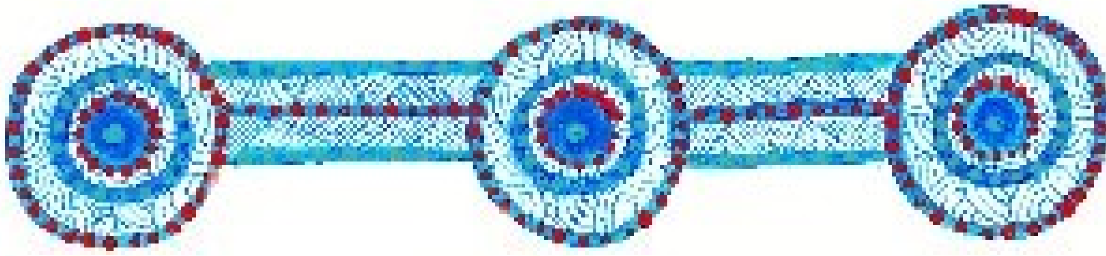


Oral Health Support for Adults with Diabetes Mellitus

Project Completion Report
September 2010

Artwork supplied by Culcha Disc 1999 and we acknowledge the Artists

Models of care

Meeting individual & community needs through workforce redesign

Oral Health Support for Adults with Diabetes Mellitus

Project Completion Report

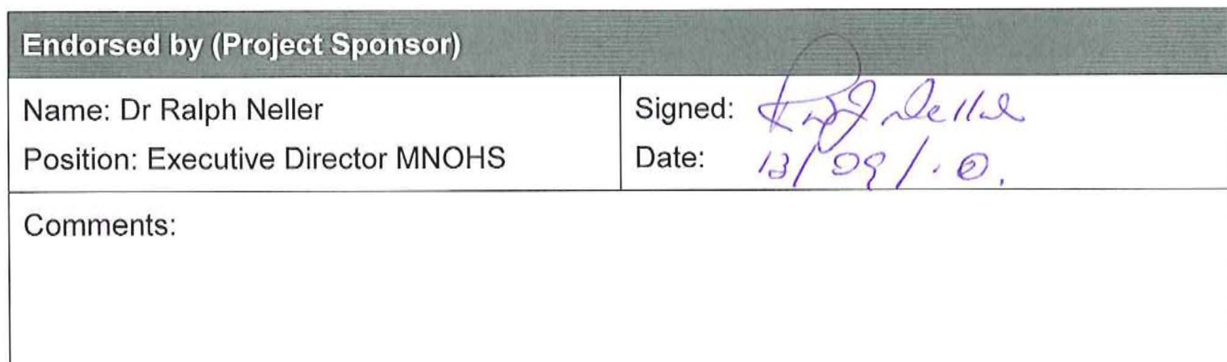
Anna Willis

Andrea Maguire

Anna_Willis@health.qld.gov.au

Andrea_Maguire@health.qld.gov.au

September 2010



Endorsed by (Project Sponsor)	
Name: Dr Ralph Neller Position: Executive Director MNOHS	Signed: [signature] Date: 13/09/10.
Comments:	

1

Abbreviations:

AHWACU	Allied Health Workforce Advice and Coordination Unit
CCHC	Chermside Community Health Centre
COHS	Children's Oral Health Service
DA	Dental Assistant
DOHTAQ	Dental and Oral Health Therapist' Assoc Qld
DT	Dental Therapist
FTA	Failed to attend
ICD	Indigenous Chronic Disease Team, Primary and Community Health Services (CCHC)
ISOH	Information System for Oral Health
KPIs	Key Performance Indicators
MNHSD	Metro North Health Service District
MNOHS	Metro North Oral Health Service
OCDO	Office of the Chief Dental Officer
OHS	Oral Health services
OHT	Oral Health Therapist
PSR	Periodontal Screening and Recording
QPSU	Queensland Public Sector Union
RBWH	Royal Brisbane and Women's Hospital
STDC	Stafford Dental Clinic
TPCH	The Prince Charles Hospital
TOR	Terms of Reference
WBS	Work Breakdown Schedule

Since initial project scoping and development in early 2009, RBWH Oral Health Service has amalgamated with Redcliffe and Caboolture Oral Health Service to form Metro North Oral Health Service (MNOHS), August 2009.

Reference to RBWH OHS within the document is specific to the time period before amalgamation.

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Executive Summary

Oral disease is one of the most prevalent, costly and highly preventable diseases in Australia. With current waiting lists to access dental care in Queensland between two and six years, tight fiscal and workforce restraints and a national dental scheme unlikely to emerge in the immediate future to address these issues, looking for new more effective models of oral health care is imperative. This demonstration project, undertaken as part of the Allied Health Workforce Health Practitioners Models of Care Project, provided Metro North Oral Health Service with an opportunity to review current work practices and develop, implement and evaluate an innovative model of care.

Within oral health services there are growing concerns regarding best management of public sector oral health patients. With increasing numbers of patients with chronic diseases and special needs, and limited referral of such patients for oral health management by general medical practitioners, nursing or other allied health staff, an alternative model of oral health care was explored. This innovative model challenged the current delivery of services and focused on preventive care through reorientation of existing staffing and resources. The project aimed to raise awareness of oral health issues for those with chronic disease and ensure general health practitioners gain an appreciation of the oral-systemic interface and the impact oral diseases have on individuals and society.

This project aimed to embed the path to oral health care into already established general health regimes and to showcase a general model of care for patients with chronic disease whose medical conditions / co-morbidities necessitate early dental intervention. Diabetes Mellitus was chosen as the first focus of this collaborative effort because of its importance as a cause of morbidity and mortality, its strong links with oral health and because it disproportionately affects minorities including the indigenous population.

The project involved raising the profile of oral health in the general health sphere through -

- formation of partnerships with, and referral pathways to and from community and private sector health practitioners in MNHSD
- referral and priority access to care for eligible patients with diabetes at the Stafford Dental Clinic
- provision of preventive assessment, standard dental treatment, supportive periodontal therapy, prosthodontics services and oral health education by the dental team
- patient and carer education
- professional development for stakeholders in oral and community health
- collection of baseline data, post intervention data and project evaluation to determine the level to which access to appropriate dental care has been provided and key outcomes achieved.

The project challenged current service delivery models by utilising the full range of skills of all members of the dental team and through provision of an initial risk assessment and preventive care plan by an oral health therapist.

The model of care developed and trialled in this project has provided more timely access to preventive based oral health care for an identified and targeted high risk group of patients and is transferable to other chronic disease and special needs groups. Improvements in patient health outcomes and cost efficiencies have been identified, optimising the skills and full scope of practice of the dental team has been investigated and strong sustainable partnerships in community and private sector general health spheres have been established. Progressing these positive outcomes will include - advocating for the ongoing addition of oral health to the list of interdisciplinary teams caring for special needs and chronic disease patients; advancing the transportability of the model of care for use with other high needs groups such as oncology patients; and advocating for the continued utilisation of the full scope of practice of all members of the dental team in the provision of high quality oral health care.

Introduction

Beginning in the early 1800's the mouth was disconnected from the rest of the body in health sciences, education and practice. The practice of dentistry became separate to the practice of medicine and as it has evolved, many health professionals have been left without an appreciation of the oral-systemic interface and the impact oral diseases have on individuals and society (Brown, 2004). This project aimed to address this issue by embedding the path to oral health care into already established general health regimes. In the current uncertain economic climate, the tension between fiscal integrity and service provision continues to be a challenge for the delivery of sustainable health services. Within oral health services there are growing concerns regarding best management of public sector oral health patients. With increasing numbers of patients with chronic diseases and special needs, and limited referral of such patients for oral health management by general medical practitioners, nursing or other allied health staff, an alternative model of oral health care has been explored. This innovative model has challenged the current delivery of services and focused on preventive care through reorientation of existing staffing and resources.

Although this project has aimed to showcase a general model of care for patients with chronic disease whose medical conditions / co-morbidities necessitate early dental intervention, diabetes was chosen as the first focus of this collaborative effort because of its importance as a cause of morbidity and mortality, its strong links with oral health, and because it disproportionately affects minorities including the indigenous population (AIHW, 2008, Queensland Strategy for Chronic Disease, 2005). It is intended that the proposed model of care will be transportable to other chronic diseases and special needs groups.

Diabetes – a priority public health issue

Diabetes Mellitus is reaching epidemic proportions in Australia, is prevalent in 7.5% of the population 25 years and older, and in Queensland contributes to a significant proportion of morbidity experienced by the population and to more than one-third of all deaths in the state (AIHW, 2008; Queensland Strategy for Chronic Disease, 2005). A number of oral diseases and disorders have been associated with diabetes mellitus, including periodontitis, oral candidiasis, dental caries, salivary dysfunction, lichen planus, recurrent aphthous stomatitis, and taste and neurosensory disorders. Research has confirmed and established a strong bilateral relationship between diabetic health and oral heath. It has recognised that periodontal disease is more prevalent and more severe in people with diabetes and that treatment of periodontitis can positively influence glycaemic control (Lamster, 2008; Mealy, 2008).

Current Model of Care

Waiting time in Metro North for adults to access public sector oral health services for general care (Category 6) is between two and six years (MNHSD, Oral Health Services Data, 2009). Commonly, patients with medical conditions necessitating dental care are not specifically prioritised and services are delivered primarily through a single discipline/ uni-modal approach. Little collaboration exists between dental practitioners and general health practitioners despite well-documented evidence supporting a multi-modal, multi-disciplinary approach. Despite recognition of the benefits of dental care in the health outcomes of those with co-morbidities, current models of care see dentistry provided in isolation with little integration with other health sectors.

In accordance with current Queensland Health policy and traditional service delivery models, all adult patients are examined by a dentist prior to receiving preventative (or any other) oral health care from an Oral Health Therapist.

New Model of Care

The new Model of Care recognises that oral health disease in the community is prevalent, costly and largely preventable (National Advisory Committee on Oral Health, 2008). It proposes a rethink of the distribution of oral health tasks among providers, and recognises the need to bridge the historical split between medicine and dentistry. It aims to create, strengthen and sustain intersectoral, interdisciplinary and multidisciplinary links and pathways which will provide more timely access to oral health care. The model enables direct referral to an oral health therapist by community allied health professionals and general medical practitioners, improved access of eligible diabetes patients to timely dental care, and ensures a preventive care plan for all diabetic patients. As the first point of contact, an oral health therapist can have a safe and significant impact on the health outcomes of patients through provision of a risk assessment, preventive care planning and treatment, and triaging of cases for treatment by the dentist. The oral health therapist can also provide health education, counselling, and advice regarding other lifestyle risk factors for diabetes such as smoking, nutrition and alcohol consumption.

Project patients with diabetes mellitus were referred by project partners from Chermside Community Health Centre, the Indigenous Chronic Disease Team (ICD) Primary and Community Health Services and private sector general medical practitioners to the Stafford Dental Clinic. Initially a risk assessment and preparation of a preventive care plan was conducted by an oral health therapist. An examination by a dentist followed, with provision of a full course of dental care and review as required. Success of the project has been measured against identified mandatory and project specific Key Performance Indicators (KPIs) in the domains of client health improvements, service productivity and human resource and workforce development.

This project report will outline the project's aim and objectives and review project processes involved in the need's analysis, service development, planning, monitoring, quality and reporting processes. It will discuss the methodology used to collect, collate and analyse data, will examine project results and assess project impact and sustainability and transfer of experience. Limitations and barriers will be discussed in an attempt to identify lessons learnt, and recommendations that may enhance the successes of the project will be highlighted.

It is suggested that the model of care developed and trialled in this project has provided more timely access to preventive based oral health care for an identified and targeted high risk group of patients, and that the model is transferable to other chronic disease and special needs groups. Improvements in patient health outcomes have been identified, optimising the skills and full scope of practice of the dental team has been investigated and strong sustainable partnerships in community and private sector general health spheres have been established.

Objectives

Project aim:

To develop an alternative model of care that would provide safe and effective dental and oral health care to those patients with Diabetes Mellitus, whose medical conditions / co-morbidities necessitate early intervention.

Benefits

Achievement of the project purpose contributed to the following benefits:

- A co-ordinated, managed and measurable approach to addressing oral health and wellbeing in patients with Diabetes Mellitus residing within the Metro North area
- Provision of timely oral health care services for individuals where the presence of oral disease will potentially adversely impact on their general health and well-being or where their condition increases their susceptibility to oral disease
- Provision of oral health services for individuals as a component of a multi-disciplinary / intersectoral model of care
- Improved patient access to appropriately trained staff – dental and allied health professionals
- Improved patient oral health
- Improved patient quality of life
- Professional development for oral and community health practitioners

Project objectives:

Intended objectives over the course of the project: *(see Appendix 2 for detail)*

- Establishment of ongoing partnerships with key stakeholders and project champions
- Development and implementation of an alternative Model of Care to be evaluated in phase three
- Establishment of sustainable referral pathways for *eligible diabetic patients to access timely oral health care
- Promotion of the benefits of utilisation of the oral health therapist within the dental team
- Investigation of the benefits / implementation of the use of electronic health record sharing in oral health services for patients with chronic disease
- Improvement in identification and data collection for diabetic patients attending oral health services
- Development and implementation of professional development / education opportunities for all stakeholders
- Improvement in morale / job satisfaction of staff
- Improvement in patient oral health status
- Development of a Memorandum of Understanding (MOU) with Metro North Primary and Community Health Services Indigenous Chronic Disease Team

*Project patient inclusions**

Up to 200 newly diagnosed and review patients with Diabetes Mellitus, Type 1 or Type 2 referred to oral health services by Metro North Health Service District Community Health Centres and private practice general medical practitioners and who meet public sector eligibility criteria

*Adult patients (18 yrs +) are eligible for free public oral health services if they satisfy the following criteria:

- Pension Concession Care – issued by Centrelink
- Health Care Card – issued by Centrelink
- Sickness Benefits Care
- Pension Benefit Card – issued by the Department of Veteran's Affairs
- Queensland Seniors Health Card

Project Implementation

(see Appendix 1 for Key performance indicators – analysis – results)

Need identification process

A number of activities were undertaken to inform the development of a Model of Care to address the oral health needs for adults with diabetes mellitus. Consideration was given to informing and guiding economic, epidemiological and government strategic and policy factors.

Data collection and analysis involved a literature review on diabetes and oral health, of best practice examples and a workforce analysis; establishment of a steering committee and reference group; an environmental scan which included widespread consultation with stakeholders, review of business processes and mapping of existing referral, client access and patient pathways. Union and professional body support was gained and a pilot clinical trial allowed testing of pathways and resources, and provided valuable stakeholder feedback. To ascertain current research findings and the appropriate place of oral health services in the diabetes service continuum, the following methods of data collection and analysis were utilised to gain baseline data and define need.

Literature review:

The project officer and sponsor at project onset in February and March, 2009 undertook a review of the literature on diabetes and oral health and of best practice examples. This research provided background information, a general overview and identified specific clinical indicators from sources including review articles, peer reviewed journal articles and meta-analysis' of interventional studies. An analysis of current policy and available workforce data was conducted through a literature review of National, (National Advisory Committee on Oral Health, 2009, VI) State (Queensland Strategy for Chronic Disease 2005 – 2015) and District policy documents (Royal Brisbane and Women's Hospital (RBWH) Oral Health Services Data, October 2008; RBWH Oral Health Services – Health Management Protocol-Diabetes Protocol, 2009) and Queensland Dental Board Reports and surveys (Dental Board of Queensland, 2007-2008 Annual Report).

Environmental Scan:

Initial consultation regarding project concepts and ideas began in March and April 2009 with reference group members / key stakeholders. These included Oral Health and Community Health (management, clinical and administration), human resource, union, professional association, Queensland University, Diabetes Australia Queensland and community representatives. Methods used to raise awareness and gather data included face to face meetings, telephone consultations and email correspondence. A Steering Committee was formed *(see Appendix 3)* following initial consultations to guide project direction through regular contact and monthly meetings, with representation from all groups as per the Terms of Reference *(see Appendix 4).* Project governance was identified and communicated to stakeholders *(see Appendix 5 – Project Organisational Structure).* The Executive Director Oral Health Services (MNOHS), senior clinical support staff, Principal Dentist BDH/Consultant Periodontist, Principal Dentist, (STDC), and the Primary and Community Health Services Nursing Director, MNHSD provided initial and ongoing reference group support. A QPSU Health Councillor, with a special interest in oral health, and the DOHTAQ were consulted and provided ongoing input. A written

‘Expression of Interest’ was issued to all MNOHS Health Practitioner Staff in March 2009 inviting appointment to the position of Union Representative on the Model of Care Steering Committee. In May and June 2009, a GPpartners Practice Liaison Officer, their Hospital and Community Integration Chairperson, and local community General Medical Practitioners were consulted and continued to provide project input. Ongoing consultation and face-to-face interviews with clinical and administrative staff within MNOHS, CCHC Diabetes Team and the ICD Team have provided overview information, protocol and process advice, enabled review of business processes, data recording and analysis, and mapping of existing referral, client access and patient pathways. Project dentists, oral health therapists, senior and staff dental assistants have provided initial and ongoing clinical input and feedback via face to face interviews, feedback in group sessions and telephone and email correspondence.

Focus groups and surveys:

Clinical staff from MNOHS, CCHC Diabetes Team and ICD team were surveyed and interviewed to assess professional development needs. Diabetes team staff at CCHC and ICD completed a pre-test, (pre-in-service evaluation survey ‘Living with Diabetes – Management and care of the oral cavity’) to inform their professional development needs. A needs analysis of oral health requirements for diabetic clients, members of diabetes support groups and diabetic community members was conducted following review and collation of interview questions regarding oral health needs and knowledge.

Local site visits and face-to-face discussions:

Site visits were conducted with managers, clinical and administration staff and clients to review best practice Models of Care within MNOHS. Program reviews included ‘Cleft Lip and Palate’ Program, at Specialist Child and COHS, the ‘Special Needs Dentistry, Bone Marrow Transplant’ Program at the Specialist Adult and Brisbane Dental Hospital (BDH) and the Zillmere Refugee Oral Health Program.

Focus test proposed alternative Model of Care:

A pilot clinical trial was conducted on May 18, May 25 and July 16 2009 at the STDC to focus test and evaluate proposed clinical and administrative processes, resources, documents and pathways of the proposed model of care.

How the service was developed:

Literature review:

The literature review conducted identified several key factors as significant. It confirmed the strategic direction of the project in targeting patients with chronic disease, and promoting workforce development (Department of Education, Employment and Workplace Relations, 2009), as in line with the National Oral Health Plan Action Areas (National Advisory Committee on Oral Health, 2004 – 2013), The Queensland Strategy for Chronic Disease (2005 - 2015) and RBWH Oral Health Services direction (RBWH Oral Health Services Data, 2008). It supported the strong links between diabetes and oral health (Lamster, 2008; Kiran M et al, 2005; AIHW, 2008; Manfredi M, 2004; Jones, JA, et al, 2007; Darre L, et al 2008). It provided guidance and direction regarding best clinical oral health practices for diabetes clients (Karikoski A, et al, 2002; RBWH, 2009) as well as assistance regarding best clinical and outcome measures (Karikoski A et al, 2002; LLambes, et al, 2005; Australian Health Ministers' Conference, 2005; AIHW, 2008). Workforce data analysis revealed at a National, State, District and local level, the number of oral health practitioners falls short of the numbers required to meet current need, especially in the public sector, rural and remote areas and indigenous communities (Community Services and Health Industry Skills Council, 2009; Dental Board of Queensland, 2007 – 2008).

Environmental Scan:

In response to an identified need to establish and maintain strong project partnerships and links, Communication and Stakeholder Management Plans were developed to guide ongoing project communication. The environmental scan which reviewed current business processes and mapped current referral, client access *(see Appendix 6)* and patient service pathways *(see Appendix 7)* indicated that there was currently no standard, formal referral pathway from Community Health Services in MNHSD, or private general medical practitioners to or from oral health services, for diabetic patients.

Feedback from face to face consultations with community health staff, oral health staff, GPpartners and private practice general medical practitioners, indicated the need for development of referral pathways to and from oral health services. This research informed the development of necessary project documents and forms to enable a referral pathway. A Resource Management Plan was developed to guide procurement and development of project resources, required for service provision, professional development and project promotion. Current oral health business processes such an appointment making, data collection and recall systems allowed for the project to comply with most standard practices, with little modification. No current baseline data was available regarding the number or percentage of diabetic patients being treated by oral health services in the Metro North Health Service district, or nationally. A need for diabetic patients to be tagged and identifiable for data collection and analysis on the oral health services clinical software system ISOH was confirmed.

Focus groups and surveys:

Data collected from CCHC and ICD team staff surveys and interviews was collated and analysed to indicate a high level of interest in (80 %), and high need for professional development regarding the Models of Care concepts and oral health education for staff. Collated responses assessed level of knowledge as defined by number of correct responses in pre-in-service evaluation survey. Project oral health staff gave interview feedback which identified professional development interest in improving their

knowledge of diabetic patient complications and management. MNOHS oral health therapists supported a trial of working to the full range of their skills and abilities, and improving the current service delivery model. Diabetic community and support group members indicated interest in oral health eduction sessions. Focus group diabetic client surveys to assess general level of oral health knowledge and current oral health status indicated the need for oral health education, showing that only 20% were aware of strong links between oral health and diabetes. Partner health practitioners, referred their diabetic patients to pilot trial days at the STDC to test processes, pathways, resources and gain stakeholder feedback from referring health practitioners and clients. In the pilot, ten patients were referred from CCHC and ICD and received initial assessment and review appointments with an OHT and subsequent review and examination appointments with the project dentist.

The needs analysis identified several key factors:

- Confirmation of the strategic direction and support of the project in targeting patients with chronic disease, and promoting workforce development, in line with key National, State and local level strategies
- Support for the strong links between diabetes and oral health
- Best clinical oral health practices for diabetes clients and best clinical and outcome measures
- The shortfall in number of oral health practitioners required to meet current need, especially in the public sector, rural and remote areas and indigenous communities
- The need to establish and maintain strong project partnerships and links
- Lack of a standard, formal referral pathway from Community Health Services in MNHSD, or private General Medical Practitioners to or from Oral Health Services, for diabetic patients.

Key issues identified and recommendations made can be viewed in *Appendix 8.*

Process evaluation

Project planning and establishment processes

Process evaluation data was obtained by reviewing minutes of steering group meetings, project reports and plans, the project schedule and WBS, Project TOR, issue log, focus groups, informal discussions with stakeholders and final focus group meeting with the steering committee.

A Project Concept Brief which provided initial project scoping and budget was prepared and submitted to AHWACU in October, 2008. At this stage it was suggested that the project would run over a ten month period incorporating a six month trial of the model of care. Subsequent project plans were modified to reflect the outcomes and recommendations made in the phase one project report. Project planning began in April 2009 with the recruitment of the project officer, with clinical pilot days in May and July 2009 used to focus test and evaluate the proposed clinical and administrative processes, resources, documents and pathways of the proposed model of care. The Project Implementation phase was supported by a detailed Project Schedule, as detailed in *Appendix 9* with the clinical roll out covering a ten month period from September 2009 to June 2010, and evaluation write up in July and August 2010. The WBS provided a useful guide to scheduling and completing project tasks. Preparation of the ethics approval submission however was not included in the initial planning process and was time consuming. Work up for project documents, such as participant consent and referral forms *(see Appendix 10 – Project Documents)* took longer than anticipated as consultation with all stakeholders was undertaken for all project documents. Valuable feedback was provided.

Initial recruitment of project officer occurred in a timely manner in April 2009, but the project officer's recruitment to backfill the Senior Oral Health Therapist (District) role for MNOHS in April 2010, left the role temporarily vacant. Subsequent recruitment to the project officer role was successful. Ideally a change of project officer would have been best avoided, as orientation into the role at such a late stage of the project was difficult. The project officer and sponsor were however able to work closely to complete the implementation and evaluation phases of the project. Project staff engaged in AHWACU Change Management and Lean Management workshops and were well supported throughout the project with open lines of communication and timely responses of assistance from AHWACU.

Project development and monitoring processes

The project was funded by AHWACU to cover project officer wages for the duration of the project. AHWACU funding also contributed to costs for dental assistant and administration support, and towards costs of oral health preventive clinical supplies and educational resources. The project achieved its outcomes within the allocated budget, but would have benefited from allocation of more time and resources to administration support, especially during the data collection, collation and analysis processes. MNOHS supported the project through redirection of all categories of oral health staff and clinical resources to prioritise access and clinical care for project patients with diabetes. In kind support was received from all project partners, The Indigenous Chronic Disease Team and Diabetes Educators MNHS and GPpartners. Partners attended Steering Committee meetings and provided valuable input at all stages of planning, implementation and evaluation.

Project educational resources and preventive products procured were slightly in excess of requirements for the implementation and clinical trail, as the proposed ceiling target of 200 project patients was not achieved. These remain valuable resources which can be utilised

with current preventive care programs in MNOHS.

The governance provided through the steering committee and assistance gained from reference group members proved effective. The roles of the project manager, sponsor and steering committee were clearly defined at the project onset, as per a roles and responsibilities charter which was included in the project plan (see Appendix 3). Initial steering committee meetings were face to face during the planning phase, but effective communication was achieved through electronic and email meetings during the implementation and evaluation processes. Project sponsors, the steering committee and AHWACU project officers were updated via monthly and subsequently written quarterly reports from the project officer. Timely decision making processes were possible as communication with stakeholders was open and flexible. Administration and clinical staff from MNOHS Directorate and Stafford Dental Clinic provided invaluable assistance around process improvement in areas such as project documents and appointment and referral systems. Stakeholders offered process feedback face to face, and by phone and email as necessary. This allowed for consideration of the change process required, and subsequent consultation with steering committee. The Indigenous Chronic Disease team provided invaluable support to ensure the project documents and referral pathways were culturally appropriate. Support from partner project champions from CCHC, Indigenous chronic disease team and GPpartners proved vital to successful referral of patients with diabetes.

Project quality and reporting processes

The monitoring process was aided by clear communication, and use of the communication, risk and change management plans as incorporated in the initial project plan.

The advantage of the project officer and sponsors working from the same site allowed for regular formal meetings and informal face to face contact which allowed issues to be discussed and necessary changes to project strategies to be made in a timely manner. Regular face to face meetings with project partners also allowed timely discussion of issues, and clarification around project process and progress and for problems to be addressed and resolved.

Project reports and updates were provided to the steering committee by email. This was the most efficient way to ensure stakeholders were accurately updated on project progress and status. This method although adequate was not ideal for all. The community representative on the steering committee, President of the Chermside Community Diabetes Support Group, although she did have access to and read emails, preferred direct communication by phone. This was provided where possible.

The project was promoted to all internal and external stakeholders via regular newsletter articles in oral health and AHWACU publications. Project promotion was also ongoing throughout all stages of the project formally and informally via scheduled and unscheduled meetings, in-service training sessions, face to face, by phone and email. Posters to promote the project were developed and used in community health clinics to raise awareness. Project champions were vital to ongoing promotion of the new model of care.

Methodology

Data collection and analysis

- Data required to measure mandatory and project specific Key Performance Indicators (KPIs) was recorded, collected and collated using both electronic and manual systems.
- An 'Application for Ethical Review of Negligible or Low Risk Research', for the Models of Care 'Oral Health Support for Adults with Diabetes Mellitus' Project, and supporting documents received approval by the Human Research Ethics Committee, Metro North Health Service District, The Prince Charles Hospital on April 10, 2010.
- In the first instance data was collected electronically by the Information System for Oral Health, ISOH™. This is a client-centric integrated system that supports the services delivered by public dental clinics. ISOH is a windows-based system that handles client administration, invoicing, outsourcing, appointment scheduling, wait listing, treatment recording, document management and file tracking, and reports.
- Patient referrals were received from GPs, community health practitioners and oral health practitioners either by faxed or electronic referral. All project documents *(see Appendix 10)* including:
  - Project Overview
  - Information for Referring Health Practitioners
  - Participant Information Form
  - Participant Referral Form
  - Participant Consent Form and Revocation of Consent Form
  - RBWH (now MNOHS) Oral Health Services Locality Guide and the
  - Colgate Oral Care for People with Diabetes Brochure

  were made available electronically both through the Queensland Health intranet site - Oral Health Services Homepage – Royal Brisbane and Women's Hospital (now Metro North Oral Health Services) - http://hi.bns.health.qld.gov.au/oral_health/community_adult/default.htm#care
- or via the GPpartners internet website – Health Services Directory – Oral health
- http://www.gppartners.com.au/content/Document/hsd/Oral_Health_for_Diabetes.pdf
- These documents are still available and referral of patients with diabetes for dental care is to be ongoing via this process. (Since project completion on June 30, patients no longer receive priority access to care, but are logged onto the ISOH system as general care patients. If more urgent care is deemed necessary by the referring health practitioner, access to service is available through the emergency care or ISOH priority codes process).
- All referred project patients were tagged with 'Diabetes' under the special selection data field and entered into the ISOH system. Data entered into this system allowed generation of reports which detailed information required to meet mandatory KPIs within the client health and service productivity domains *(see Appendix 1 for Key Performance Indicators - Analysis and Results)*

The following reports were generated electronically by ISOH:

- Project patient treatment record dates: date logged onto ISOH, date of first appointment – allowed average wait time to be calculated
- Total number of patients referred to project – date logged on upon receipt of referral
- List of Referrers – external and internal / month
- Number of new and review cases seen (occasions of service)
- ID or tag for diabetic patients
- Cancellations and Fail To Attends (FTA)
- Item codes recorded for preventive care provided to general and project patients

Data was also collected manually from:

- Patient treatment charts - provided information on patient demographics, medical history and OHT accuracy of assessment. Project officer and sponsor manually audited and reviewed individual patient treatment charts to collect, record and verify data.
- The 'Clinical Oral Health Assessment Form' (A Clinical Pathway tool developed by Queensland Health) *(see Appendix 11)* was used to collect the following information which was entered manually for each patient onto an excel spreadsheet for collation and analysis:
  - Medical History / co-morbidities, including high blood pressure, stroke, heart disease, nervous condition, stomach/digestive condition - *(Appendix 18, see Figure 13, Figure 14)*
  - Family history of diabetes – *(Appendix 18, Figure 15)*
  - Age, occupation – *p.23*
  - Oral symptoms and oral hygiene *(Appendix 18, Figure 10 and Figure 11)*
  - Smoking history *(Appendix 18, Figure 16)*
  - Denture status *(Appendix 18, Figure 17)*
  - Periodontal Screening and Recording (PSR), and Plaque Index System were used to collect information to identify improvements in gingival health and patient oral health status during the initial assessment by the OHT *(see Appendices 12 and 13 for explanation of these tools and recording procedures).* A comparison of initial and subsequent scores, at 3 and 6 month intervals, measured the change in oral health status (improvement, no change or decline)
  - Accuracy of oral health assessments to indicate agreement by the Dentist with OHT oral health assessment was established through a chart audit *(see Appendix 18, Figure 9).*
- Information about wage differences was extracted from the QHEPS Dental stream wage rates for Dentists and Wage Rates for Health Practitioners (HP) and analysed by a cost effective analysis *(refer to Table 1, p.32).* This data allowed a comparison of the cost of preventive treatment per occasion of service between dentists and OHTs.

Questionnaires used to gather data included -

- Consumer Satisfaction Questionnaires (CSQ-8) *(see Appendix 14)* – were issued to general care patients and project patients to gather data for comparison of satisfaction levels between general care and project patients.
- Referrers Satisfaction Questionnaires (RSQ) *(see Appendix 15)* - were issued to all external and internal referrers as a post evaluation survey for a point in time only assessment of referrer satisfaction.
- 'Living with Diabetes - Management and Care of the Oral Cavity' - pre evaluation and post evaluation surveys *(see Appendix 16)* were undertaken by project patients and the results were collated and analysed. Results from the pre and post tests were recorded on an excel spreadsheet for analysis.

All data collected manually was placed onto spreadsheets for collation and analysis. Results were achieved by comparing baseline data to post intervention data. Where possible trends were graphed for final analysis and review *(see Appendix 18 for graphed results)*

Justification for methods used

The following documents were used to obtain data required to measure KPIs:

- MNOHS combined Consent and Medical History Form. This is a mandatory Queensland Health oral services document, used to gain patient consent for examination and treatment and provide medical history information.
- Consent for participation in MOC project. This document was developed by the Project Officer as an ethical requirement for consent by patients participating in the project *(see Appendix 10).*
- Revocation of Consent Form. This form was an ethics requirement to enable participants to withdraw from the project at any time *(see Appendix 10).*
- Client Satisfaction Questionnaire (CSQ 8) and Referrers Satisfaction Questionnaire (RSQ) were mandatory requirements of AHWACU. Both of these documents evaluated service delivery by asking eight questions about treatment received by patients and experience received when referring clients to the project. These questionnaires provided information on the success of the referral pathways and service delivery.
- 'Living with diabetes - Management and care of the oral cavity'. This questionnaire was developed collaboratively by Population Health and Oral Health to gain feedback to improve oral health information sessions offered to people living with diabetes. The questionnaire was used as a pre and post evaluation tool. The focus of this questionnaire was to gauge patients' knowledge of the link between diabetes and oral health as well as their knowledge of oral disease and oral hygiene practises. Specifically, patient knowledge of links between diabetes and oral health was assessed by comparing the pre and post test responses to Question 5e on the questionnaire.
- The 'Economic Analysis of Options' *(see Table 1, p.32)* was provided as a method of analysis by AHWACU. Comparison was made between cost of occasion of service, as provided by dentist alone and by both dentist and oral health therapist. Occasions of service figures were averaged, and percentage of non-delegatable duties was calculated within the parameters of service delivery of the new MOC.

Limitations are acknowledged around both data collection and analysis for project specific key performance indicators (*see Appendix 1*). An epidemiologist was not consulted prior to project commencement. Advice was sort from a population health epidemiologist in June 2010 regarding analysis of data collected from the project 'Living with Diabetes' pre and post questionnaires. This advice proved invaluable and it is suggested that future research projects in oral health be supported by expertise in this area. Analysis of full survey results for all questions in the survey is ongoing (only Question 5e pre and post results have been analysed to date, *see Appendix 18, Figure 12*). Consultation with The Clinical Practice Improvement Centre (CPIC) at the RBWH was sought by the Project Officer in June 2009, to aid the development of Clinical Measures required to establish, assess and evaluate oral health outcome measures. Consultants at CPIC were unable to provide assistance around oral health measures. Advice sought from oral health reference group members and literature review evidence supported the use of PSR and Plaque Score measures to assess patient oral health status.

Project specific health outcomes can indicate trends only as no allowance has been made for confounding factors and possible bias. Further research under rigorous statistical guidance would allow further investigation of identified trends.

The CSQ and RSQ were mandatory for all projects and advice was provided by AHWACU around analysis of data provided by these satisfaction surveys. As the model of care being evaluated was new, baseline data for the CSQ was provided by fifty general care patients, with analysis through comparison in levels of satisfaction to project patients.

Who participated, how and at what stage

- Methods used were developed and trialed in the planning stage by the Project Officer and Sponsor
- Consultation with clinical and administration staff, patients and steering committee members provided valuable feedback on processes and project documents in the planning stage. This was done via face to face meetings, telephone and email
- Data was collected clinically by the Project Officer, (oral health therapist) during the implementation stage. This involved a full clinical assessment, and recording of Plaque and PSR scores for project patients
- Project Officer (oral health therapist), the project dental assistant and administration staff assisted patients with completion of project questionnaires as required, during the implementation stage
- Data was collected by the OHT, DA and Administration staff during the implementation stage. This included recording patient data, such as Item Codes on the ISOH system
- Evaluation and analysis of data collected was undertaken and supported by the Project Sponsor, Project Officer MOC, Project Officer MNOHS Directorate, Administration staff, Senior Information Officer (Office of the Chief Dental Officer), ISOH Coordinator (MNOHS), Oral Health Promotion Officer (Central Regional Services), during the evaluation stage of the project. An Epidemiologist from Population Health Central Regional Services devised an evaluation template which helped with the analysis of data collected from 'Living with Diabetes – Management and care of the oral cavity' questionnaire.

Methodological problems and their solutions

- Data entry errors - many staff enter data into the ISOH system, including administration, clinical and managerial staff. During the evaluation and analysis phase of the project it became obvious that some data had been omitted or entered incorrectly. For example, not all project patients had been entered in the special selection field with the ‘Diabetes’ tag. Manual chart auditing however discovered this discrepancy and errors were corrected. There is no simple solution to this problem. Staff shortages, work overload, time constraints and human error impact the delivery of health systems and services.
- The number of returned ‘Living with Diabetes’ post evaluation surveys from project patients was disappointing. Time constraints and lack of dedicated administration support were barriers to increasing the number of post survey questionnaires returned. An allowance for increased administration support in the funding proposal/ project plan, would have supported resources and time for either follow up phone calls or a another mail out.
- The low rate of return of the Referrer Satisfaction Questionnaire (RSQ) can also be attributed to the lack of dedicated administration support, and difficulty in motivating referring health practitioners to complete the survey.

Project Results

Summary of project results

This project has demonstrated safe and positive patient health outcomes and efficient service provision when initial screening and preventive care planning and treatment is carried out by the oral health therapist.

1. *Improved access and reduced waiting list time for targeted diabetic patients:*

The project provided timely oral health care assessment and services for patients with Diabetes Mellitus, as a sub group of high risk patients where the presence of oral disease can potentially impact their general health, and where their condition increases their susceptibility to oral disease. Current waiting list time for eligible patients for general care in Metro North Oral Health Service is between 2 to 6 years. This model of care offered priority access to eligible patients with diabetes and reduced their wait time to an average of 40 days *(see Appendix 18, Figure 1). It is acknowledged that this reduction in wait time is attributable to the priority access provided.* 87 new case assessment appointments and 297 review appointments were provided to targeted patients during the implementation period *(see Appendix 18, Figure 2, 3, and 4).*

2. *Improved oral health status of targeted diabetic patients*:

Standard measures of oral health status were used – plaque score (an indicator scoring cleanliness of teeth) and PSR (an indicator of the health of the gingiva [gums]), and comparisons were made between oral health status at the initial assessment (baseline), and follow up at three months and / or six months. 57% of patients showed improved gingival health, with a further 28 % showing no decline *(see Appendix 18, Figure 10);* while 61.6% showed improvement in plaque scores, with 21.8% showing no decline (*see Appendix 18 Figure 11). It is acknowledged that there has been no allowance made for other confounding factors which may have affected these positive results and the results can only be indicative of a trend towards improved oral health status.*

3. *Improved knowledge by project patients regarding the links between Diabetes and Oral Health*:

Project patients displayed a 33.54% improvement in knowledge of the links between diabetes and oral health from baseline data *(see Appendix 18, Figure 12). Limitations noted: patients completed the pre survey at their first appointment, and the post survey following a mail out after project completion in June 2010. Patients therefore completed the post survey at different points in their continuum of care. Confounding factors have not been accounted for e.g. those patients completing the post survey in a time period close to the end of their course of care and preventive education session, may have displayed increased knowledge. Numbers of pre and post surveys evaluated differed, as not all project patients returned the post survey.*

4. *Cost effective delivery of patient assessment and preventive care*:

By utilising the oral health therapist as the first point of contact in the provision of an initial risk assessment and preventive care, a 36% saving per occasion of preventive service was realised *(see Table 1, p 32). (This benefit is directly related to the difference in wage levels between the OHT and dentist, and the ability of the therapist to perform the risk assessment and provide preventive oral health care, as duties which can be delegated. Tasks performed included - charting of teeth, noting presence of caries, taking bite wing radiographs (see Appendix 17 for Tasks performed by OHT in Model of Care Project).*

5. *Sustainable partnerships and integration of oral health into general health referral and clinical pathways*:

Community health practitioners and private GPs will continue to raise dental awareness and refer their patients with diabetes mellitus to Stafford Dental Clinic for an oral health assessment and treatment - *(post-project patients will not however continue to receive priority access, but will be placed on a general care waiting list or access care according to their allocated ISOH priority access code)*.

6. An oral health assessment and referral to an oral health professional is now a component of the clinical screening tool used by Diabetes Educators Metro North Health Service District *(oral health was not previously included as part of the screening tool, we hope to promote this initiative state wide).*

7. 100 % of targeted project patients received preventive care in comparison to only 52% of general care patients, as assessed via a random chart audit which was conducted on eighty two general care patients. Patient charts were audited to assess if preventive interventions were undertaken during their course of care. The results showed that only 52.4 % of randomly selected general care patients received a preventive intervention, compared to 100% of targeted project patients.

8. Professional development sessions for oral health staff around diabetes management were attended and well received. All Project Staff attended the Diabetes Management Workshops run quarterly at The Prince Charles Hospital (TPCH). The current program includes presentations by Diabetes Educators, Dieticians, Podiatrists, and Endocrinologists. The MOC Project officer consulted with organisers as to the value of adding an oral health component to this program, due to its strong links with diabetes. An oral health presentation by the Project Officer at the final 2009 workshop was well received and the outcome is that the quarterly workshops run for health practitioners caring for patients with diabetes now include an oral health component.

9. Professional development sessions on oral health management for diabetes educators and partner community health practitioners were conducted with staff at Chermside Community Health Centre during implementation. Community health staff can now attend the scheduled Diabetes Management Workshops to update their oral health knowledge.

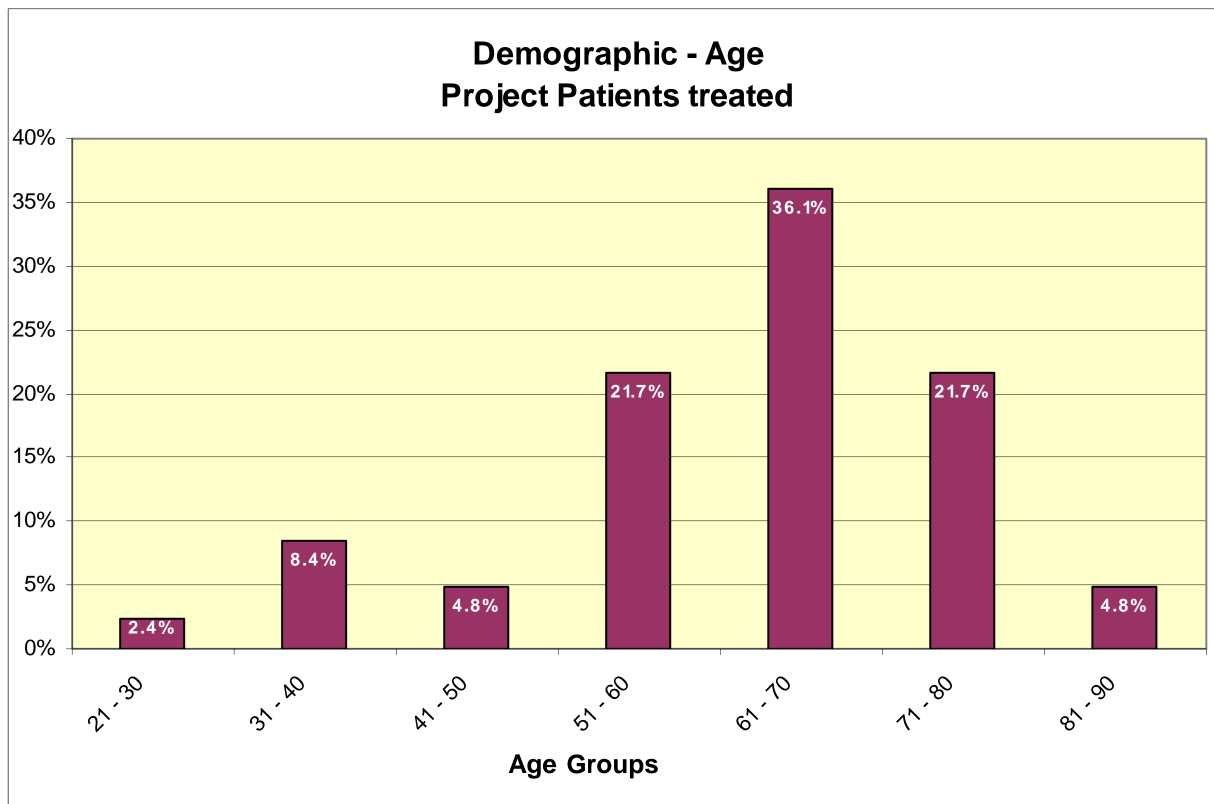
Other findings:

Demographics:

Gender: 49.4% of treated project patients were male

50.6% of treated project patients were female

Age: 84% of treated patients were over 50 years old, with the highest representation in the 61 -70 age group at 36% (see graph below)



ATSI access:

Aboriginal and Torres Strait Islander project patients treated: 20% of all project patients.

A Patient Ethnicity Report for MNOHS clients for 2009 – 2010 (ISOH Report) indicated an identified indigenous population of approximately 3.2% accessing care. This shows that the access and treatment rate for ATSI clients within the MOC Project was much higher than that in general care within MNOHS. This could indicate that the new MOC which relies on strong partnerships and a referral system for identified clients may have a positive influence on increasing ATSI access rates. Limitations noted: indigenous clients were included in the targeted group; diabetes rates are higher in indigenous communities; and the Indigenous Chronic Disease Team (CCHC) supported the project and referred their clients with diabetes. This is noted and warrants further investigation.

Most patients referred had Type 2 diabetes, most reported that their diabetes was controlled, most had associated co-morbidities, and over 80% reported dry mouth as an issue. Although only noted these findings confirm documented evidence for patients with diabetes, and further studies to investigate common risk factors and co-morbidities would be advantageous.

Evaluation against KPI – comparison with baseline data / information

(see Appendix 1 – Key Performance Indicators – Analysis - Results

Mandatory Key Performance Indicators:

Client health:

- The average waiting time for project patients was reduced from 2 – 6 years (Category 6 Wait Time) to approximately 40 days – a 95% decrease in the average time to access services *(see Appendix 18, Figure 1)*
- The numbers of consumers accessing the service – 87 new cases, 297 review appointments. As project patients had not previously been targeted, there is no baseline data for comparison *(see Appendix 18, Figures 2, 3 & 4)*
- Improved Consumer satisfaction: this KPI was measured by comparing satisfaction levels between general care patients and project patients. Results from the CSQ undertaken by general care patients indicated 48.94% with high levels of satisfaction, whilst high levels of consumer satisfaction were reported by 72.22% of project patients. These results show project patients demonstrated higher consumer satisfaction than general care patients *(see Appendix 18, Figure 6)*
- Improved system integration (RSQ): only 4 questionnaires were returned by referring Health Practitioners. 50% were very satisfied with the referral pathways. There is no baseline data for this KPI as it was a point in time measure.

Service productivity:

- The Economic Analysis of Options undertaken demonstrated a 36% saving in cost of occasion of service by utilising the OHT for provision of initial assessment and preventive care, when compared with baseline data as provision of preventive occasion of service by dentist only *(see Table 1, p.32)*

Human resource:

- Increased development of staff (Lean Training and Change Management) – Project Officer and Project Sponsor attended these training days – as recorded by AHWACU. This training was promoted more broadly within oral health, and with project partners, but there was no further uptake.
- Increased supply of staff (Cert IV) – Training offered and promoted - nil completed during project period
- All MNOHS staff involved with the MOC Project were encouraged to complete the Better Workplaces Staff Opinion Survey. This survey looks at morale / job satisfaction in the areas of work life, support, professional growth and work demand. Oral health Brisbane Metro North results for Job Satisfaction showed a negative change of - 6.5% between pre and post surveys. This could be indicative of the change process generally since MNOHS restructure in August 2009. A focus group with staff directly involved in the project indicated they were very satisfied with the MOC *(see Appendix 18,Figure25)***.**

Project Specific Data:

Client Health:

- Improvement in gingival health (PSR) and patient oral health status as measured by Plaque Score (plaque Index system) – Project patients had PSR scores and Plaque scores recorded at their initial assessment which was baseline data. They were then reviewed at intervals of 3 and 6 months. Gingival health showed improvement at follow up of 57.7%, no change in 28.8% and decline in only 2.6% *(Appendix 18, Figure 10).*
- Oral health status as measured by Plaque score – indicated improvement at follow up in 61.1% of project patients, no change in 21.8%, decline in only 5.1% *(Appendix 18, Figure 11).*
- Awareness of links between diabetes and oral health – This KPI was measured by comparing patient response to Question 5e as baseline data collected from the 'Living with Diabetes – Management and Care of the Oral Cavity' pre evaluation questionnaire completed at the initial assessment, to post intervention responses. The results from the pre evaluation surveys were compared to patient responses to the same question in the post intervention stage. Knowledge of links between diabetes and oral health by project patients improved by 33.54% *(see Appendix 18, Figure 12).*
- Safety indicators/Contributing factors (variances): Referrals Indigenous and non indigenous clients. As shown in *Appendix 18, Figure 19* the number of referrals received have been categorised by referral source:
  - 34 diabetic patients were referred by Indigenous Chronic Disease Team
  - 61 diabetic patients were referred by CCHC
  - 29 patients were referred by QH oral health facilities
  - 12 patients were referred by Pine Rivers CHC; and
  - 11 were referred by GP's. As there have not been recorded referrals of Diabetic patients before this project there was no baseline data for comparison

Service productivity:

- Adherence to Best Practice treatment guidelines: All treatment as outlined in RBWH OHS, Health Management Protocol – Diabetes Protocol, 2009

Human resource (workforce):

- Results for this KPI showed 89.74% accuracy of Oral Health Assessments by measuring the number of counter signatures by the examining dentist to indicate agreement with the initial oral health assessment made by the OHT.

Analysis of results in relation to project objectives

(see Appendix 8 - Key Issues / Objectives / Outcomes)

- Established ongoing partnerships with key stakeholders and project champions: Successful partnerships were developed throughout the term of the project. These include CCH, GP Partners, Indigenous chronic disease team

- Developed and implemented an alternative Model of Care to be evaluated in phase three – this was achieved

- Established sustainable referral pathways for diabetic patients to access timely oral health care – Senior OHT (District) will continue to encourage referrals from community and private sector health practitioners. This will require ongoing maintenance and support of project partnerships

- Promoted the benefits of utilisation of the oral health therapist for provision of initial assessment and preventive care – this will be achieved through dissemination of project results

- Investigated the benefits / implemented the use of electronic health record sharing in oral health services for patients with chronic disease – this objective was not achieved: (*see details in shortcomings section, page 29)*

- Improved identification and data collection for diabetic patients attending oral health services. Project patients with diabetes were 'tagged' and identified for the first time when logged onto the ISOH system

- Developed and implemented professional development / education opportunities for all stakeholders – Professional development sessions for oral health staff in diabetes management were undertaken. Diabetes Educators attended sessions in oral health links with diabetes and the community based Diabetes Support Group (Chermside) attended oral health education sessions

- Improved patient oral health status - Standard measures of oral health status were used – plaque score (an indicator of how clean teeth are) and PSR (an indicator of the health of the gingiva [gums]), and comparisons were made between oral health status at the initial assessment and follow up at three months and / or six months. 57% of patients showed improved gingival health, with a further 28 % showing no decline; while 61.6% showed improvement in plaque scores

- Gathered data for outcome evaluation – Data was gathered in various ways – including electronically through ISOH and manually as collected by project staff and entered onto excel spreadsheets for collation and analysis

- Developed a Memorandum of Understanding (MOU) with Metro North Primary and Community Health Services Indigenous Chronic Disease Team - The Draft MOU was reviewed by the Team Leader, Indigenous Chronic Health Services into a draft 'Service Level Agreement' between the Metro North Oral Health Service and the Primary and Community Health Services. A Service Agreement was not appropriate at this time as the provision of priority access to care for patients with diabetes ceased on June 30, 2010. Consultation with the Indigenous Chronic Disease Team is required to clarify the

ongoing relationship with MNOHS and the use of ISOH priority code access by indigenous clients

Project achievement of intended results

The project achieved most of its intended objectives as demonstrated in *Appendix 8 Key Issues - Objectives - Outcomes* – some, however were not realised:

- Sample size did not reach 200 patients as stated in the project plan. As well as an inconsistent rate of referral to the project by health practitioners, time constraints and changes/absence of staff impacted the number of patients seen. There was a total of nine weeks, within the project implementation period when project patients were not assessed/ treated by the OHT.

- Failed to attend (FTA) patients reached 16.4% of total occasions of service *(see Appendix 18, Figure 5)* – this was a disappointing result as it is higher than the average FTA rate in MNOHS. Within the cohort, many project patients had complex medical histories, with associated co-morbidities *(see Appendix 18, Figure 13 and 14).* This may have been a prohibitive factor in attendance rates.

- The GPpartners HRX Health Record Exchange was not implemented. The reasons for this include:
    - Inconsistencies caused by staffing changes – Senior project officer and Principle Information Officer (OCDO)
    - Communication difficulties
    - Information Technology issues
    - Time constraints

- Time constraints also impacted on the number of referrals seen. Due to organisational convenience a dental chair was available only one day per week for MOC patients to be assessed by the OHT. It was hoped to have higher numbers of patients referred to the project, but referral rates did remain within the capacity for access and treatment. Rates of referral dropped markedly over the November 2009 to January 2010 'holiday' period, which also coincided with a period of leave by the project champion at CCHC *(see Appendix 18, Figures 18 and 20).* 34 referrals were received during the last quarter to June 2010, indicating a steady rate of referrals over that period. An indication of sustainable project pathways and partnerships is evident in the continuation of referrals of patients with diabetes to the Stafford Dental Clinic, since project completion on June 30. Although these patients will not receive priority access to care, they will be placed on general care wait lists, and they will have been made aware of the need to access dental care.

- Some of the Diabetes educators only referred Type II Diabetes patients. Lack of clarification and clear follow up by the Project Officer around this point may have contributed to this.

- Certificate IV in Oral Health Education training positions for Dental Assistants were offered but did not take place during this period

- Although final consultation with project staff indicated a high level of satisfaction with the MOC project, the results achieved by oral health on the Better Workplaces Staff Opinion Survey as evaluated by AHWACU, showed a decline over the period of the project *(see Appendix 18, Figure 25).* This may however be indicative of current change within MNOHS following restructure, rather than a reflection of staff satisfaction around the MOC project. A follow up focus group with project staff is suggested to clarify this issue.

Other trends identified from data collected confirmed already established knowledge regarding diabetes and co-morbidities:

- When analysing co morbidities of project patients it was found that 30.5% of project patients reported two conditions as well as diabetes, while 41.7% of patients had one other medical condition *(see Appendix 18, Figure 13 and 14).*

- Number of smokers – of the 84 patients with diabetes assessed by the OHT, 29 recorded a positive smoking status – 34%. This is a much higher rate than the current Australian general population average of 19 % (Winstanley, 2008), supporting existing evidence that smoking is a known risk factor for diabetes *(see Appendix 18, Figure 16).*

- 61.54 % of project patients had a family history of diabetes *(see Appendix 18, Figure 15)*

- Over 80% of project patients reported dry mouth: all were given preventive advice and education for this condition

- Over 40% of project patients had dentures: 15% with partial upper or lower dentures; 12.82% with full upper only dentures; 10.26% with full upper and full lower dentures; 3.85% were edentulous (had no teeth) wearing no prosthetics (dentures). The high percentage of patients wearing dentures in the project patient co-hort, may indicate that a model of care that incorporated the skills of a prosthetist would provide benefits to patients with chronic disease. Other confounding factors that contribute to tooth loss have not been considered in this analysis.

- 19.2% of project patients reported stomach/digestive conditions.

Shortcomings and lessons learnt

- Although 147 patients were referred to the project, indicating the success of the partnerships and referral process, only 87 new patient assessments were conducted with 297 reviews or follow up appointments. The project plan proposed that up to 200 eligible newly diagnosed patients with Diabetes Mellitus would be offered prioritised preventive care at Stafford Dental Clinic. Some reasons that all referred patients were not seen, include – their complex health status, their decision to seek treatment at a facility closer to home, they failed to attend appointments or were unable to attend.
- Limitations in data collection. All patient data may not have been captured, due to data entry errors. Some of the data reports required for analysing the KPI's were not those commonly generated from the ISOH system. Consultation with The Principal Research Officer, Office of the Chief Dental Officer (OCDO) initiated the request to prepare these reports. Although unforeseen circumstances caused delays, the final report preparation supported project data analysis and evaluation, and the assistance of staff from the OCDO is acknowledged and appreciated.
- 16.19% of patients failed to attend – this is slightly higher than the percentage range of between 10% and 13% reported in MNOHS (COHS, FTA Tracking Data, 2006 – 2009).
- Lack of expertise / support from an epidemiologist in the planning phase of project in relation to tool development and analysis of surveys, impacted greatly on the quality and rigor of the evaluation of the project specific KPIs
- Inability to set up HRX – consultation with the OCDO regarding implementation of GPpartners HReXchange system began in December 2009. Although GPpartners provided the expertise and support to implement the system (which is already being utilised at the RBWH), its progression was hampered by barriers in communication, staff changes within Queensland Health, and the trial of this information sharing system did not eventuate. HRX recognises the critical need to share summary patient information, particularly for patients with complex conditions who require the services of a wide range of multisector, multidisciplinary health care professionals (Silvester and Carr, 2009, S13).
- Initial patient medical histories were incomplete e.g. sugar levels, full list of medications taken were not accurate. Initial planning hoped to include recording and analysis of blood glucose levels for all patients initially and at project completion. This proved problematic as many patients did not bring their blood glucose monitoring books to their oral health appointments, or their personal records were not current or accurate.
- Imbalance of numbers in pre and post surveys 'Living with Diabetes' Questionnaire. Of the 87 new cases treated, 78 completed pre - surveys but only just over 50% of these patients returned post-surveys. Limited time / resources allocated to follow up played a major part in the poor response rate.

- Time constraints were also an issue. Clinical days were limited to one day per week during the implementation phase - September 2009 to 30 June 2010.
- Change of Project Officer and Project Sponsor in May 2010 disrupted project process, implementation and evaluation.
- The need to investigate ethics requirements and submit a proposal for ethics review in a more timely manner in the initial scoping and planning stages is recognised.
- Feedback process to referring health practitioners and partners has to date only been done on an informal ad hoc basis as required during implementation. More formal feedback regarding number of patients seen and follow up required for individuals is required.

Impact

- A more co-ordinated, managed and measurable approach to addressing oral health and wellbeing in patients with Diabetes Mellitus residing within the Metro North area
- Provision of timely oral health care services for individuals where the presence of oral disease will potentially adversely impact on their general health and well-being or where their condition increases their susceptibility to oral disease
- Provision of oral health services for individuals as a component of a multi-disciplinary / inter-sectoral model of care
- Improved patient access to appropriately trained staff – dental and allied health professionals
- Improved patient oral health
- Improved patient quality of life

The financial benefits of reorientation of the initial assessment process utilising the full range of skills of the OHT are suggested in the table below. Option 1 depicts 'no change' to current service delivery while in Option 2, the presence of an OHT allows the dentist to increase the time they spend performing duties that cannot be delegated to an OHT. This increase, combined with the additional assessment services provided by the OHT reduces the cost per occasion of service by 36%.

ECONOMIC ANALYSIS OF OPTIONS

	Option 1: Do nothing	Option 2: 1 x FTE Oral Health therapist
No. of FTE Dentist	1	1
No. of FTE Oral Health Therapist	0	1
Per Dentist (L2.4) annual salary	$110,118	$110,118
Per Oral Health Therapist (HP3.4) annual salary	$0	$66,791
Total annual labour costs	**$110,118**	**$176,909**
Dentist (L2.4)		
Occasions of service per shift	8	8
Shifts per week	1	1
Weeks per year	48	48
% time non delegatable duties	60%	90%
% time supervision	0%	0%
Oral Health Therapist (HP3.4)		
Occasions of service per shift	n/a	8
Shifts per week	n/a	1
Weeks per year	n/a	48
% time performing duties currently done by Dentist	n/a	60%
Total annual occasions of service	**230**	**576**
% change occasions of service		**150%**
Average labour cost per occasion of service	**$477.94**	**$307.13**
% change cost per occasion of service		**-36%**

Table 1 - Economic Analysis of Options

Please note – occasion of service figures have been averaged, and percentage of non-delegatable duties is calculated within the parameters of the new MOC.

In the current environment, it is not envisaged that there will be an increase in number of OHTs in MNOHS. Recruiting and retaining dentists is also problematic. The collaborative approach of using the OHT to assess, chart, record and provide preventive care, allowing dental officers more time to provide a more complex level of oral health treatment to patients is consistent with other allied health professional areas and recognises cost and time efficiencies in an ever expanding and costly health service. The multi modal model of care trialled in this project complies with current legislation requirements.

Sustainability and transfer of experience

Patient benefits:

Following project completion in June 2010, eligible adult patients with diabetes will no longer receive priority access to oral health care, but sustainable referral pathways will ensure they will be placed on general care wait lists. Those patients who were referred during the project implementation period will continue to receive care as per their individual treatment plans. Although 70% of project patients showed improved or stable oral health status, further research is required to compare this result to improvements in oral health status achieved through current service delivery models, which do not prioritise preventive care and education. Oral health has been incorporated into the screening tool used by diabetes educators in MNHSD, raising it as an important issue / complication for newly diagnosed and review patients with diabetes *(oral health was not previously included as part of the screening tool, it is suggested that this initiative be promoted state wide).*

Health system / service benefits:

The cost effectiveness achieved through optimal use of the skills of the dental team could be further investigated through trialling the model of care with other chronic disease and special needs groups. Initial screening of patients by OHTs to assess risk and prioritise referral to dentists may be effective in reducing wait list time for chronic disease and special needs patients. Sustainable partnerships with and referral pathways to and from private medical practitioners, GPpartners and community and indigenous health services will be maintained and progressed to other areas in MNHS district. Awareness raising and integration of oral health into general health arenas will continue to be investigated and advanced.

Workforce benefits:

When this project was initially scoped in early 2009, oral health therapists worked under the legislative requirements and guidelines provided by the Dental Practitioners Registration Act 2001, Code of Practice#1, Practice of Dentistry by Dental Therapists and Dental Hygienists. Since July 1, 2010 Oral health therapists, dental therapists and dental hygienists now work under the *Health Practitioner Regulation National Law* (2009) Dental Board of Australia (DBA), Scope of practice registration standard *(see Appendix 19).* A review of this standard will be undertaken by the DBA and is due for completion 2011. It is suggested that the skills mix of the oral health therapist places them in an ideal place to provide preventive care planning for patients in high risk groups, and initial risk assessment screening of patients.

This project has demonstrated safe and positive health outcomes and efficient service provision when initial screening and preventive care planning and treatment is carried out by the oral health therapist.

Queensland Health is currently considering the potential impact of the DBA's Scope of Practice Registration Standard on oral health service provision. The new Scope of Practice Standard *(see Appendix 19)* may provide opportunity for innovation in the working relationships between dentists, oral health therapists, dental therapists, dental hygienists and dental assistants. It is hoped that the outcome of Queensland Health policy around scope of practice for oral health therapists, will facilitate innovation in service delivery models and encourage further research.

Service delivery benefits:

As service delivery costs for oral health care in this model are achieved through current capacity and redirection of resources and staffing, ongoing service costs would not pose a threat to a sustainable model. Project partnerships and champions will be further supported after project completion. There has been raised oral health awareness in general health arenas, and oral health care referral pathways have been embedded into existing community health and private practice processes. The role of stakeholder and partnership engagement which supports the new Model of Care and referral process will be maintained by the Senior Oral Health Therapist (District) MNOHS.

Project results and learnings will be shared through dissemination of the project report, at a local, state and national level as per the distribution list.

Recommendations

- A post implementation review has taken place to ensure the project purpose has been attained. The results of the review have shown an overall success through a co-ordinated, managed and measurable approach to addressing oral health needs for patients with Diabetes Mellitus within the Metro North Health Service District. It is suggested that the project has applicability for transportability and implementation in other oral health settings within the Metro North area and beyond. This model of care may have application for use in the new Oral Health Centre, at Herston, which is due for completion in 2012.
- Within oral health there still exists some siloing of individual oral health professions. It is hoped that this project has encouraged and highlighted the benefits of a team approach to oral health care. It is hoped that progressive university curriculums which now incorporate inter-professional learning and collaboration of all members of the dental team, will provide a future workforce which embraces, respects and utilises the skills of all team members.
- MNOHS must continue to advocate for the addition of oral health to the list of interdisciplinary teams who provide care for patients with chronic disease and special needs and whose oral health is impacted by or impacts their general health. Dedicated resources to advance this initiative are required.
- Securing commitment from the Executive Director MNOHS to a trial which reorientated the assessment process for adult patients and utilised the full range of abilities of the oral health therapist was integral to the success of this project. It allowed the trial to take place and demonstrate positive outcomes. Further research which investigates models of care and service delivery is recommended.
- Transportability of this model of care into other areas of oral health care is highly recommended. Further research to establish if this MOC could assist in reduction of wait list time for other groups of special needs patients would be beneficial.
- Further research and consultation with those providing or undertaking research into innovate models of care in the oral health workforce is highly recommended - for example – the Victoria 'Doutta Galla Community Health Centre' Melbourne model of care, and the 'Clinical management of patients aged 19-25 years by Dental Therapists' course in Victoria.
- Encourage continued uptake of Enhanced Primary Care Plan by general medical practitioners. If clients do not hold a concession card they may still be eligible for referral for dental treatment via the Enhanced Primary Care Plan – 'Dental services under Medicare for people with chronic and complex conditions', by referral to: http://www.health.gov.au/internet/main/publishing.nsf/Content/Dental+Care+Services
- Investigate implementation of the HRX GPpartners electronic health record sharing system in oral health services for patients with chronic disease. It would be advantageous for oral health services to trial the benefits of sharing of health record summary information (medical history and current medication lists) to support the delivery of high-quality health care, in particular, multidisciplinary team management of complex patients. It is recommended to continue this consultation with GPpartners and to investigate the use of HRX in future MNOHS research.

- During the planning phase of the project, consultation with Dr Pauline Ford from the University of Queensland, School of Dentistry, was undertaken. Dr Ford's areas of expertise include oral health links with systemic disease and she provided valuable input. The project officer is currently mentoring a group of third year Bachelor of Oral Health, University of Queensland students in their completion of a literature review. The review is investigating the strong bi-lateral relationship between diabetes and oral health and the incorporation of knowledge about this link into the general health sphere. Collaborative relationships such as this strengthen the connections between our learning and teaching institutions and our service delivery sector. It is suggested that MNOHS investigate the possibilities of collaborating and partnering with universities in projects / research which cover common areas of interest.

- Outcome measurement

This project acknowledges the limitations of traditional quantitative methods for measuring health outcomes. Often maintenance of current health status, rather than decline is a positive health benefit for patients with chronic disease and compromised general health.

Measuring such stability or lack of decline in health status can be problematic, and not seen as strong evidence for success. It is suggested that one of the benefits of this project regarding client health outcomes is around 'positive patient experience.' Although patient satisfaction was an evaluated project measure and KPI, and returned a positive result for project patients, it does not capture the lessons to be learnt through more thorough investigation of individual patient experience (Eager, 2010).

It is recommended that consideration be given to investigation of the use of qualitative tools such as 'discovery interviews' (Eager, 2010), in future evaluation of interventions in oral health care, especially for those with special needs and chronic disease. This tool is currently under investigation as a valuable option for evaluation of health care for oncology patients, whose treatment is often complex, and health outcomes and status difficult to measure.

For example, often a decrease in the rate of decline, or introduction of care interventions which improve patient's experience or quality of life, but not their health status as measured by traditional means, may not be assessed as positive measures when in fact with regard to patient experience they are.

For example, in the MOC Project a high percentage of project patients reported dry mouth, and were given advice as part of their preventive care plan as to how best manage this condition. Improvements in quality of life associated with improved saliva flow and quality can be marked, and had the anecdotally reported improvements by patients been measured from a patient experience perspective, they would have been a strong measure of project success.

If time, funding had permitted, interviewing, focus group evaluations and filming of patients to capture their experience would have been valuable tools to further assess the success of the project around patient experience. These methods could also provide valuable learnings in process evaluation and improvement as they offer opportunity for feedback regarding the positive and negative aspects of patient care.

Conclusion

The findings of this report will add to the ongoing building of a comprehensive picture of how to best manage oral health care for patients with chronic disease and special needs. The need to embed oral health services, education and health promotion into mainstream established community health and private practice regimes is clear. The project team acknowledge and thank AHWACU and MNOHS for the funding opportunity and support provided as they investigated this new model of care. We have been very pleased to be involved in this work and hope that others will gain some inspiration, motivation and ideas from the findings of this project.

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12. Periodontal Screening and Recording (PSR) details
13. Plaque Index System (Plaque score) details
14. Client Satisfaction Questionnaire (CSQ-8)
15. Referrer Satisfaction Questionnaire (RSQ)
16. Living with diabetes – Management of the oral cavity – Questionnaire
17. Tasks performed by OHT in MOC Project
18. Project results – summary graphs
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19. Dental Board of Australia: Scope of practice registration standard

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Synopsis

Oral Health Support for Adults with Diabetes Mellitus

Outcomes

- Improved access and reduced waiting list time for targeted patients with diabetes
- Improved oral health status for targeted diabetic patients
- Improved patient knowledge of the links between Diabetes and Oral Health
- Cost effective delivery of patient assessment and preventive care – by utilising the oral health therapist as the first point of contact in the provision of an initial risk assessment and preventive care
- Sustainable partnerships and integration of oral health into general health referral and clinical pathways
- Professional development for health practitioners

How the need was identified

Historically there has been a split between medicine and dentistry, leaving the oral cavity seen as separate from the rest of the body. As a result many health professionals have been left without an appreciation of the oral-systemic interface and the impact oral diseases have on the general health of individuals. There is growing concern regarding best management of public sector oral health patients due to increased demand on limited physical and human resources.

Diabetes Mellitus is reaching epidemic proportions in Australia, is prevalent in 7.5% of the population 25 years and older, and in Queensland contributes to a significant proportion of morbidity experienced by the population and to more than one-third of all deaths in the state. A number of oral diseases and disorders have been associated with diabetes mellitus including periodontitis, oral candidiasis, dental caries, salivary dysfunction, lichen planus, recurrent aphthous stomatitis, and taste and neurosensory disorders. Research has confirmed and established a strong bilateral relationship between diabetic health and oral heath. It has recognised that periodontal disease (gum disease) is more prevalent and more severe in people with diabetes and that treatment of periodontitis can positively influence glycaemic control. An alternative model of oral health care was developed to provide effective oral health care to those patients whose medical conditions/co-morbidities necessitate early dental intervention, with diabetes as its first focus because of its strong bidirectional relationship with oral health.

How the service was developed

This model challenged the current delivery of services which sees dentistry provided in isolation from other health services through reorientation of existing staffing and resources. The project aimed to improve the oral health status of patients with diabetes by prioritising their access to timely oral health care through a direct referral pathway from GPs

Community Health Practitioners and Indigenous Chronic Disease Teams within Metro North Community Health Centres and via internal referrals from Metro North Oral Health Services. Dental services were provided to eligible adult diabetes patients in the form of assessment and preventive oral health care by an Oral Health Therapist (OHT), standard dental treatment, supportive periodontal therapy, and prosthodontic services were delivered by Dentists and Dental specialists.

Key strategies involved:

- establishment of partnerships with other health service providers
- sustainable referral pathways
- professional development
- patient and carer education
- utilising the full scope of practice of all members of the dental team
- collection of baseline data and project evaluation to determine the level to which access to appropriate dental care and other project objectives have been achieved.

Contact

Anna Willis and

Andrea Maguire

Senior Project Officers

Models of Care: Oral Health Support for Adults with Diabetes Mellitus

Ph: 07 3257 3533

Andrea_Maguire@health.qld.gov.au

Anna_Willis@health.qld.gov.au

Dissemination:

Julie Hulcolme	Executive Director - AHWACU
Dr Ralph Neller	Executive Director MNOHS for dissemination to MNOHS staff
	Steering Committee members
Dr Rhys Thomas	Office of the Chief Dental Office
Linda Bertram	Office of the Chief Dental Office
Julie Barker	Dental and Oral Health Therapists Association Queensland
	National Oral Health Promotion Clearing House
Dr Pauline Ford	University of Queensland

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Senior Oral Health Therapist / Project Sponsor - Alison Dickinson

Steering committee

Stafford Dental Clinic staff

Metro North Oral Health staff

MOC Project Dentist - Dr Debra Buick

MOC – Dental Assistant - Eric Gonzales

Principal Dentist/Senior Specialist Periodontist – Specialist Adult and BDH - Dr Valerie Woodford

Office of the Chief Dental Officer – Principal Research Officer and staff

Dr Pauline Ford – University of Queensland

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Population Health Central – Joy McBride

Queensland Public Sector Union, Oral Health Therapist Representative

Appendix 1

Key Performance Indicators – Analysis - Results

Section 1. Standardised measures to be collected across projects

Domain	Key Performance Indicator	Data/Tools	What will be measured	Method	Analysis	Results
Client health	**More timely access to services** • Up to 80 % decrease in the average time to access services • Up to 80% increase in number consumers accessing services *(1.1b + 1.1c)*	Wait time Service throughput	1.1a Average wait time before intervention 1.1b # new cases seen per month 1.1c # review cases seen per month	Accessed from ISOH – date patient logged onto ISOH, date of first appointment Accessed from ISOH	Comparison between wait time for project patients and wait time for general care patients Total number of project patients seen – new cases seen + review cases seen 1.1b Appendix 18, Figure 2 & 1.1c Figure 3	Average wait time before intervention for targeted MOC patients – 40.4 days; Average wait time for general care patients – two to six years – Appendix 18, Figure 1 87 + 297 = 384 – Appendix 18, Figure 4
	Improved consumer satisfaction • Increased consumer satisfaction	CSQ - 8	1.1d Client Satisfaction Questionnaire (CSQ-8)	CSQ to all MOC patients, CSQ to 60 general care patients	Comparison of satisfaction levels between MOC patients and general care patients	Consumer satisfaction was higher for MOC patients 72.22% compared to 48.94% for general care patients

Domain	Key Performance Indicator	Data/Tools	What will be measured	Method	Analysis	Results
	Improved system integration • Increased stakeholder satisfaction	RSQ	1.1e Referrer Satisfaction Questionnaire	RSQ to all external and internal referring health practitioners	Point in time only assessment of referrer satisfaction	Low level of responses received, but all responses in 'very satisfied' category
Service productivity	Doing more activity with consumers • Up to 10% decreased cost per OOS	Occasion of service / output measure	1.2a # total labour costs divided by total occasion of service	Accessed wages information from QHEPs – QH intranet site; ISOH report for occasions of service	Comparison of cost per preventive treatment occasion of service between dentists and OHT	Cost benefit of 36% - See Table 1, p. 32
Human resource	Increased development of staff #staff undertaking targeted training	Participation in AHWACU run training	1.3d # participation in Lean training 1.3e # participation in Change Management 1.3i # participation in special needs dentistry training 1.3j # participation in diabetes management training	Recorded by AHWACU 6 monthly		Project Sponsors Project Officers 1.3 # All MNOHS clinical staff attended – 13.02.09 02.04.09 1.3J# All clinical project staff attended

Domain	Key Performance Indicator	Data/Tools	What will be measured	Method	Analysis	Results
	Increased supply of staff # Cert IV training positions offered/ completed	Cert IV in Ohed for Dental Assistants training	1.3f # Cert IV training positions offered 1.3g # /Cert IV training positions completed	Offer of Cert IV in OHP Radiography Training & Assessment/ Front Line Management		Training offered and promoted- nil completed during project period
	Morale / job satisfaction of staff Increased staff satisfaction with: • Work life • Support • Professional growth • Work demand	Better workplaces staff opinion survey	1.3h Pulse survey based on Better Workplaces Staff Opinion Survey covering areas of: • Quality of work life • Supervisor support • Role clarity • Peer support • Profess. growth	Start and end of Phase 2 by AHWACU	Comparison of results at Start and end of Phase 2	Oral health Brisbane Metro North results for Job Satisfaction showed a negative change of 6.5% - this could be indicative of the change process generally since MNOHS amalgamation in August 2009. Focus group with staff directly involved in project indicated very satisfied with MOC

Domain	Key Performance Indicator	Data/Tools	What will be measured	Method	Analysis	Results
Project Specific Data						
Client health	Improved consumer outcomes Up to 10 % improvement in gingival health indicator (PSR) between first appointment and review appointment Up to 10 % improvement in patient oral health status, as measured by a decrease in overall plaque score from first appointment to review appointment	PSR indicator tool Plaque Index System (measure for recording amount of plaque present)	2.1a # PSR score for each patient at first appointment 2.1b # PSR score for each patient at review (3/12, 6/12) appointment 2.1c Plaque score for each patient at first appointment 2.1d Plaque score for each patient at review (3/12, 6/12) appointment	Over clinical trial period Manual data collection from patient charts to excel spreadsheet; initial and review appointment 3/12, 6/12	Comparison of initial and review scores to measure change – improvement, no change or decline	• PSR (see Appendix 12 for explanation of tool) • Plaque score (see Appendix 13 for explanation of tool) PRS – improvement at follow up in 57.7% of project patients, no change in 28.8%, decline in only 2.6% (Appendix 18, Figure 10) Plaque score – improvement at follow up in 61.1% of project patients, no change in 21.8%, decline in only 5.1% (Appendix 18, Figure 11)

Domain	Key Performance Indicator	Data/Tools	What will be measured	Method	Analysis	Results
	Awareness of links between Diabetes and OH		2.1c # of patients not aware of links between diabetes and oral health	Questionnaire – Living with Diabetes-Management and care of the oral cavity	Comparison between patient response to Question 5e on Living with Diabetes Questionnaire – pre (1st app't and post – mail out at project completion)	Improvement in knowledge of links between diabetes and oral health by 33.54% of project patients (Appendix 18, Figure 12)
Client health	Safety indicators/ Contributing factors (Variances)	Referrals Indigenous Non-indigenous	2.1c # new case referrals per month 2.1f # FTAs	Report generated from ISOH – Number of referrals per month, Number of referrals per category of health practitioner; Number of referrals per facility / month	Date patients logged onto ISOH / month - from which facility	2.1c Total referrals to project – 147 (Appendix 18, Figure 18) CCHC highest number of referrals – 61 ICD team – 34 Oral health – 29 Pine Rivers CHC – 12 GPs – 11 (Appendix 18, Figures 19, 20, 21, 22, 23, 24) 2.1f# FTAs – 16% (Appendix 18, Figure 5)

Domain	Key Performance Indicator	Data/Tools	What will be measured	Method	Analysis	Results
Service productivity	Adherence to Best Practice treatment guidelines	Occasion of service / output measure	Treatment as outlined in *RBWH, OHS, Health Management Protocol – Diabetes Protocol, 2009*			Compliance to this protocol throughout the project duration
Human resource (workforce)	Workforce integration - Up to 90% accuracy of Oral health assessments as made by Oral Health Therapist	Chart audit – counter signature by dentist to indicate agreement with Oral Health Assess-ment by OHT	3.1a # of project patient charts which indicate agreement with OHT oral health assessment	Review of patient charts – from initial assessment appointment – data recorded onto excel spreadsheet	Signature from dentist at initial appointment as a measure of examining dentist's agreement with accuracy of OHT assessment	89.74 % accuracy recorded with 9 % still waiting on examination from dentist

Appendix: 2 **Project Objectives, Sub-objectives, Strategies and Key Performance indicators**

Project aim: To improve the oral health status of newly diagnosed and review patients with Diabetes Mellitus who reside in MNOHS District by improving their access to appropriate and timely oral health care

Objectives	Strategies / sub-objectives	Activities	KPIs & Measures
Establish ongoing partnerships with 100% of all key stakeholders and project champions within community health services and the general medical practitioner community in Metro North	• To improve system integration • To form strong project partnerships, with increased stakeholder satisfaction • Improve uptake of Enhanced Primary Care Plan – dental services by GPs	• To identify partners • Liaise, consult and have ongoing open lines of communication with referring health practitioners as per Communication Plan	Increased stakeholder satisfaction (1.1e Referrer Satisfaction Questionnaire – RSQ)
Develop, implement and promote an alternative, preventive focused, best practice Model of Care to be trialled for at least 90 % of referred diabetic patients	• Ensure all clinical / admin staff and resources being provided in kind are in order for implementation • Establish clear guidelines for OHT full scope of practice to be used in trial, with project sponsor, Executive Director RBWH OHS	• Secure, train and support clinical and admin staff for project • Develop, procure all necessary project documents, forms • Develop procure health promotion materials and clinical preventive resources • Focus test / ongoing review of project resources / processes • Liaise with STDC Management to ensure all clinical / admin staff and resources being provided in kind are in order for implementation • Roll out service delivery - • Monitor, review clinical time required, according to number of patient referrals • Provide high quality service delivery at each appointment according to best practice	> % of new and review patients seen, (1.2b # occasion of service for new service, + 1.2c # occasion of service for review service)

Objectives	Strategies / sub-objectives	Activities	KPIs & Measures
	• Improve consumer satisfaction with alternative Model of Care • Provide best practice clinical care, following best practice guidelines	guidelines • Ensure first appointment with OHT provides Preventive Care Plan • Promote the project to all stakeholders by: o Regular newsletter articles o Ongoing email correspondence, face to face and phone contact with all stakeholders	Increased consumer satisfaction (1.1d Client Satisfaction Questionnaire – (CSQ – 8)
Establish sustainable referral pathways *from* OH services to referring health practitioners, with reports/ feedback given for at least 80% of patients who have a dental assessment		• Develop and implement collaborative service agreements between Metro North Community Health Services • Investigate the use of the central referral unit currently being used by Metro North Community Health Service District	90% > in oral health status feedback to referring health practitioners, # post treatment reports from OHS to referring health practitioners
Promote the benefits of utilisation of the oral health therapist using full scope of skills within the dental team to 100 % of stakeholders	During project implementation 70% of identified stakeholders will be aware of the role the OHT in the dental team	• Promote the project to all stakeholders by: • Regular newsletter articles ongoing email correspondence, face to face and phone contact • Raise awareness of role of OHT	Question to be asked at completion of Phase two – to referring health practitioners – Who is oral health practitioner who provides the first point of contact for this Model of Care Briefly describe their role.

Objectives	Strategies / sub-objectives	Activities	KPIs & Measures
	Measure consistency and safety of OHT Oral Health Assessments with those of dentist conducting examination, with 90 % agreement		90 % of *accuracy* of Oral health assessments as made by Oral Health Therapist *(3.1a # of project patient charts which indicate dentist agreement with OHT oral health assessment and care plan)*
Investigate the benefits / implement the use of electronic health record sharing in oral health services for patients with chronic disease, within the project trial period, Sept '09 to Aug '10		• Liaise, consult with GPpartners and project sponsors to develop a plan for implementing the use of electronic health record exchange for project patients • Demonstration to key oral health stakeholders	Implementation of electronic health record sharing by OHS
Develop and implement professional development / education opportunities for all stakeholders – 75% of Oral health staff and Community referring health practitioners to attend		• Conduct, provide access to professional development and training sessions that are attended by at least 75 % of relevant health care professionals; oral staff and referring health practitioners • Liaise to incorporate oral health education component into Diabetes Management Program run by CCHC for general health practitioners who work with diabetic clients	Increased development of staff # staff undertaking targeted training 1.3d # participation in Lean training 1.3e # participation in Change Management 1.3j # participation in special needs dentistry training 1.3j # participation in diabetes management training

Objectives	Strategies / sub-objectives	Activities	KPIs & Measures
		• Offer and support access to Cert IV in Oral Health Education for Dental Assistants	1.3f # Cert IV training positions offered 1.3g # Cert IV training positions completed
Improve morale / job satisfaction of staff, with work life , support, professional growth and work demand	**Improve opportunity to practise to full range of skills and abilities** **Improve opportunity to undertake hygiene function**	• Enable both OHTs and DAs with OHEd to share OHEd tasks • Enable dentists to concentrate on more complex tasks •	Morale / job satisfaction of staff, (1.3h Pulse survey based on Better Workplaces Staff Opinion Survey)
Improve patient oral health status in for those who access care and attend review appointments.	To prioritise access to preventive care	• Develop, conduct and review individual / group oral health education sessions for all diabetic patients / their carers who access OH care • Conduct group OH training sessions with Diabetes support groups in Metro North • Provide high quality service delivery at each appointment according to best practice guidelines • Provide care with preventive focus and encourages patient self management	Up to 10 % improvement, decrease in gingival health indicator (PSR) between first appointment and review appointment (2.1a > 2.1b) Up to 10 % improvement in patient oral health status, as measured by a decrease in overall plaque score from first appointment to review appointment (2.1c > 2.1d) Awareness of links between Diabetes and OH (2.1e) Up to 10 % of patients with self-reported improvement in oral health behaviours (2.1f)

Appendix 3 – Steering Committee

Oral Health Support for Adults with Diabetes Mellitus Model of Care Demonstration Project

The Steering Committee has guided the development and will oversee implementation of the project activities. Representatives are as follows:

- Senior Oral Health Therapist (District) RBWH OHS
- Senior Project Officer (Model of Care Demonstration Project) RBWH OHS
- Principal Dentist Stafford and Nundah Dental Clinics
- Principal Dentist/Senior Specialist Periodontist, Brisbane Dental Hospital
- Chermside Community Health Centre (CCHC) Diabetes Team Representative
- Indigenous Chronic Disease Team (TPCH) Representative
- GPpartners Representative – Practice Liaison Officer
- Representative from Oral Health Therapist discipline
- Representative from other workforces that may be affected by work redesign – Senior Dental Assistant – RBWH Oral Health Services
- Human Resources Department representative – Senior Administrative Officer – Stafford Dental Clinic
- Representative from Queensland Public Sector Union - OHT
- Representative from Dental & Oral Health Therapist Association (Queensland)
- Diabetes Patient community member

Project role	Name/s	Responsibilities
Project sponsor	Executive Director, RBWH Oral Health Services Senior Oral Health Therapist (District)	• Accountable for the business success of the project and ensuring the project aligns with the strategic directions of the organisation. • Provide strategic advice and direction to the project manager and Steering Committee. • Advocate for the project to ensure the appropriate level of internal and external support and access to resources required to successfully complete it.
Project Manager	Senior Project Officer, Oral Health/Diabetes Mellitus Model of Care Demonstration Project RBWH Oral Health Services	• Undertaking/coordination project planning and its documentation in the project plan. • Accountable for the successful delivery of project objectives within agreed parameters. • Provide overall coordination of project activities. • Managing changes to the project. • Working with relevant persons to resolve project issues and or determining when they need to be escalated to the project sponsor and or higher authority.
Steering Committee		• Provide advice and guidance to the project manager • Advocating for the project to ensure the appropriate level of internal support and access to physical and human resources required for successful completion of project.

Appendix 4 – Terms of reference

Health Practitioner Models of Care Demonstration Project

Local Steering Committee

TERMS OF REFERENCE

Preamble:
The *Health Practitioners (Queensland Health) Certified Agreement (No.1) 2007*, as per Clause 45 agreed to fund project teams to implement new models of care.

The Health Practitioner Models of Care Demonstration Project Steering Committees are being established to oversight these projects locally and report to the Health Practitioners Interest Based Bargaining Group, through the Allied Health Workforce Advice and Coordination Unit.

Aim

The Health Practitioner (HP) Models of Care Demonstration Project Steering Committee will:
1. Manage and progress the project according to the local project plan
2. Identify and resolve human resource and industrial issues locally where possible
3. Ensure adequate consultation with stakeholders
4. Identify issues that have state-wide implications and/or need to be escalated for corporate management and resolution.
5. Oversee evaluation of the project according to the performance indicators in the Health Practitioners Models of Care Project Plan
6. Market the new model of care to create awareness and positive attitudes towards workforce redesign.

Reporting Relationship

The Health Practitioner Models of Care Demonstration Project Steering Committee will report to the Health Practitioner Interest Based Bargaining group through the Allied Health Workforce Advice and Coordination Unit. The overall Sponsor of the Health Practitioner Models of Care Demonstration Projects is Julie Hulcombe, Director, Allied Health Workforce Advice and Coordination Unit.

Membership

- A member of the executive or senior management (who would provide local sponsorship and Chair the meetings)
- Project manager/s
- Representatives from HP disciplines
- Representation from other workforces that may be affected by work redesign (nursing, medical, operational, administration)
- Human Resources Department representative
- Representation from relevant unions
- Local professional association representation if possible

Quorum

A quorum will require the Chair and 50% of the membership.

Other Participants

The Committee may invite other persons who may be affected by work redesign (eg from the non government or education sectors) to attend meetings as required.

Secretariat

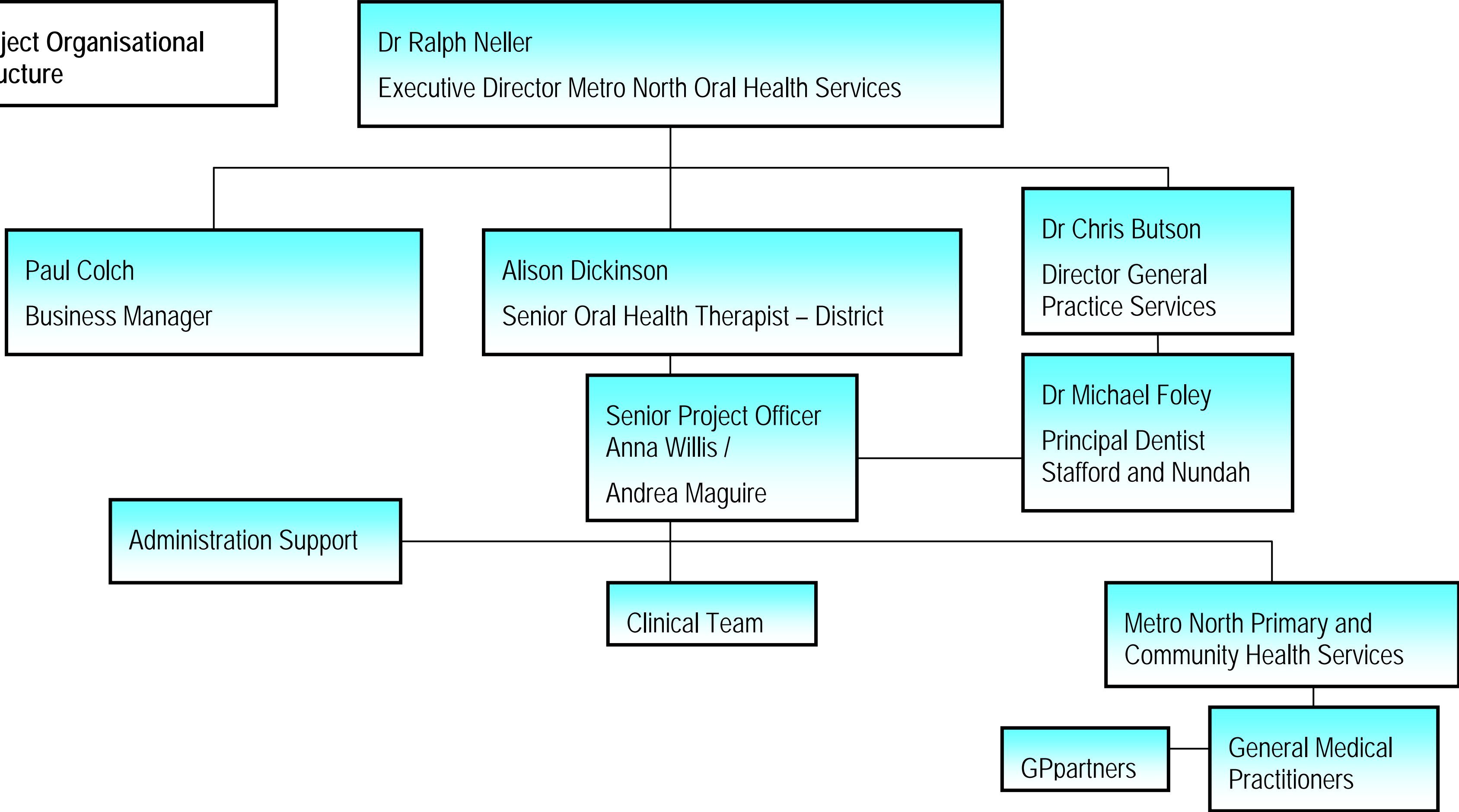
Secretariat support should be organised locally to coordinate meetings, prepare agendas and minutes. Andrea Hurwood, Team Leader, Allied Health Workforce Advice and Coordination Unit should be included in the distribution list for the minutes.

Frequency of meeting

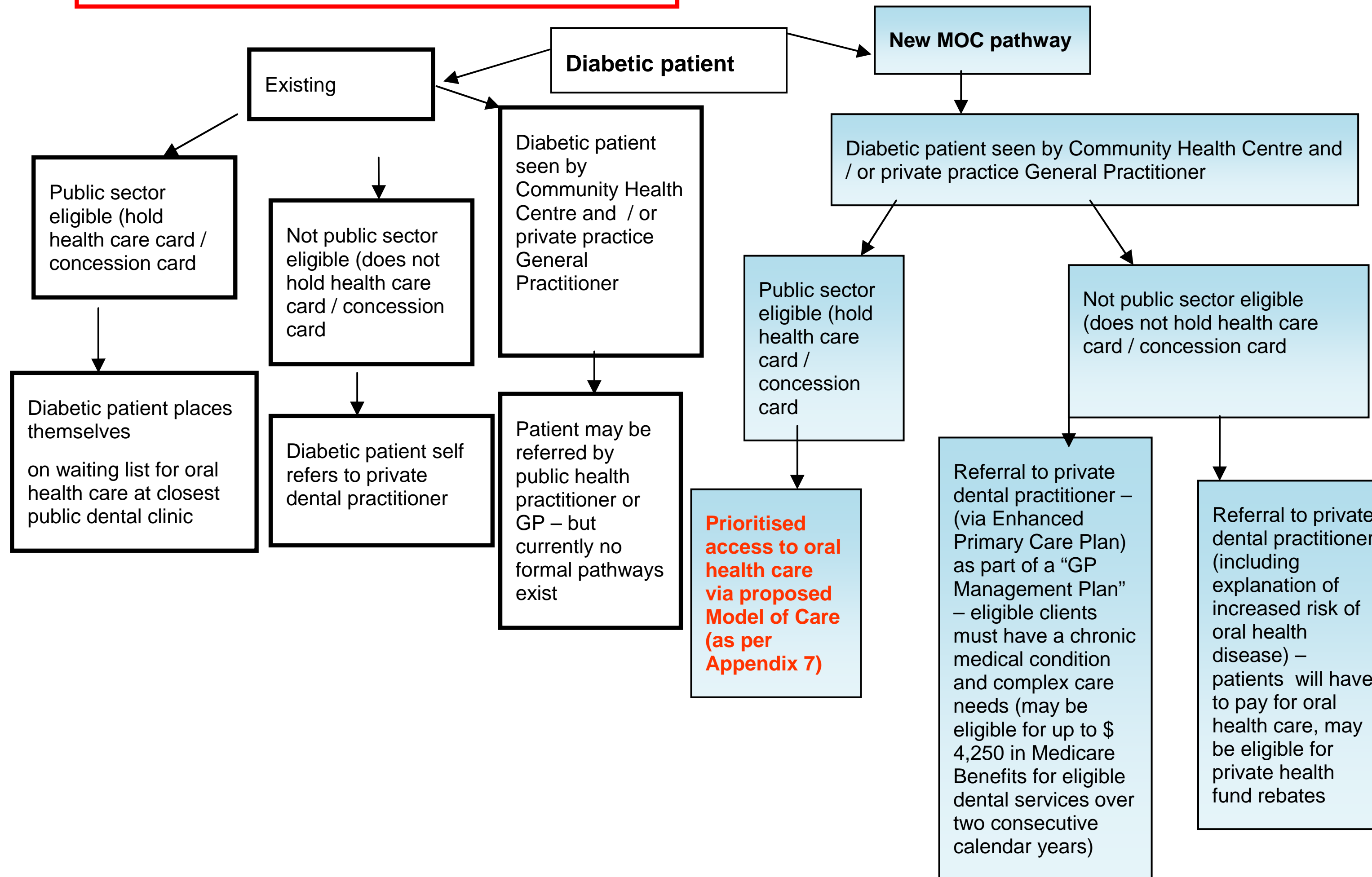
Meeting frequency is at the discretion of the local sponsor and may vary throughout the life of the project. This should be reflected in the local project plan.

Teleconference and videoconference facilities should be made available to members unable to attend meetings in person.

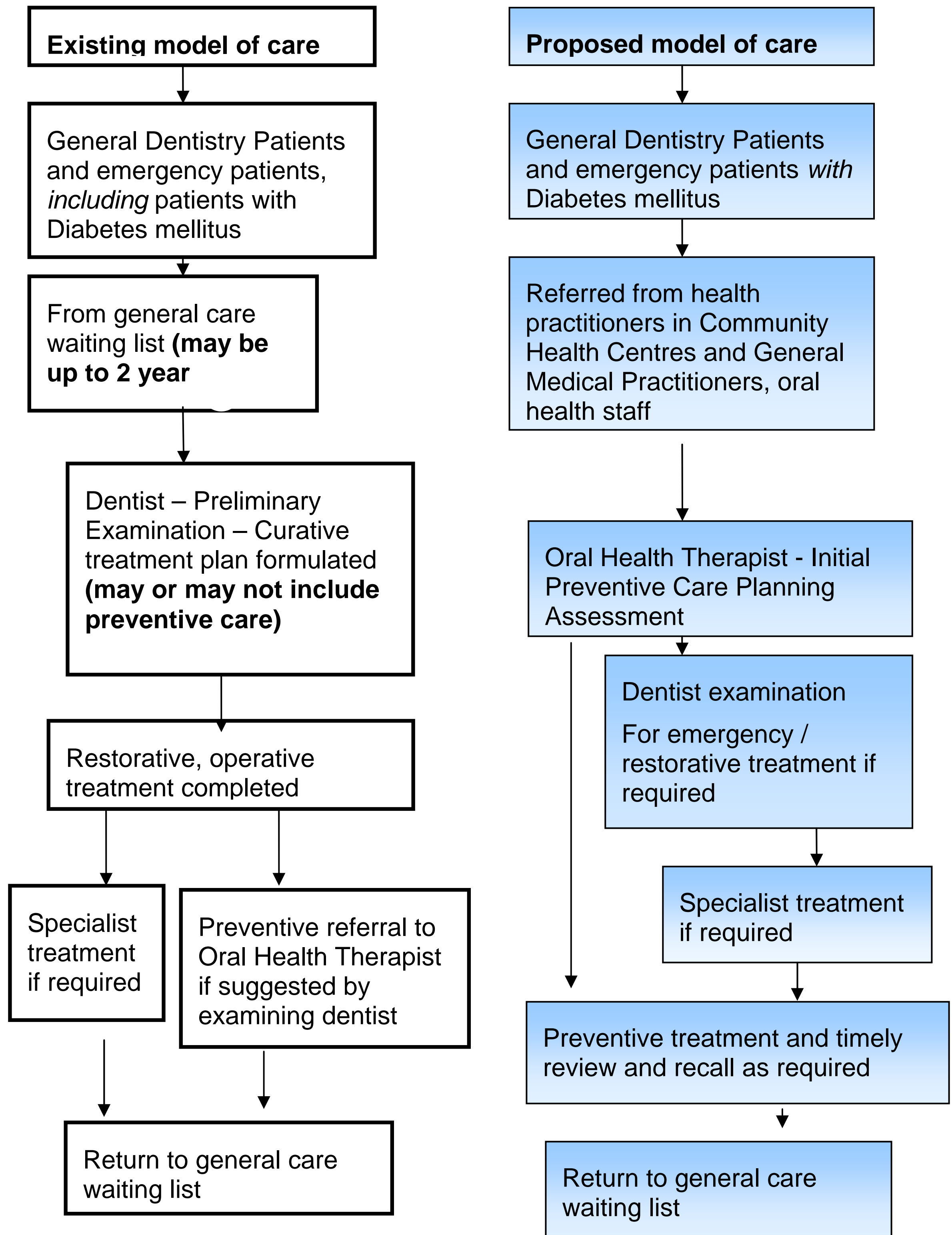
Appendix 5 – Project Organisational Structure



Appendix 6



Appendix 7 - **Models of care – Existing and proposed**



Appendix 8 – Key Issues – Objectives – Outcomes

Key issues identified	Phase One Recommendations / Objectives	Results achieved /outcomes
MNHS Oral Health Services strategic direction is towards prioritising care for patients with special needs, including those with chronic disease	• Proposed model of care to prioritise access to care for patients with chronic disease (diabetes mellitus)	• **Achieved** – average wait time for targeted project patients 40.4 days compared to general care wait list 2 – 6 yrs
Funding and infrastructure for provision of public sector oral health services is limited	• Reorientate existing staff and resources • Promote better uptake of '*Enhanced Primary Care' Plan* by General Medical Practitioners allowing diabetic patients to access Private Dental Practitioner care for eligible services	• **Achieved** – OHT for first patient contact • EPC plan promoted via GPpartners, allied health and oral health practitioners within the project
Current oral health service delivery follows traditional medical model of care, focuses on restorative and curative care, not prevention	• Proposed Model of Care to be preventive based, with all patients receiving preventive care plan, risk assessment and education from an Oral Health Therapist at first appointment	• **Achieved** - All project patients risk assessed by OHT, received preventive care plan and treatment
Current workforce capacity is limited	• Reorientate existing staff and resources • Optimise full scope of practice for Oral Health Therapists and Dental Assistants (with Cert IV in Oral Health Education). This will free up dentist's time to provide more complex care	• **Achieved** - OHT utilised full scope of practice • Time taken for dentist to undertake examination greatly reduced as charting, risk assessment had been completed by OHT
Oral Health Therapists are ideally placed to provide initial patient assessment, education and referral for appropriate oral health care.	• Modify current patient pathway through oral health services, making OHT first point of contact – *consider safety, productivity, patient health and satisfaction outcomes, staff satisfaction outcomes*	• **Achieved** – OHT first point of contact • Achieved – patient safety, > productivity possibility for dentist with more complex dentistry • Positive patient OH status outcomes • Project staff – high satisfaction
Lack of communication and feedback about patient's with chronic disease between health services	• Maintain and extend stakeholder engagement and communication • Investigate patient health record sharing program being promoted by GPpartners – HReXchange • Establish and maintain referral pathways and two way referral systems between partners – Community Health Centres (MNHSD) General Medical Practitioners (via GPpartners)	• Ongoing - Senior OHT (District) – to facilitate maintenance of stakeholder engagement; to progress OH service integration with community health and private sector • Not achieved – use of GPpartners HReXchange program • Senior OHT to facilitate maintenance of established referral pathways and systems and aim to engage new partnerships

Key issues identified	Phase One Recommendations / Objectives	Results achieved /outcomes
Lack of baseline data – Diabetic patients using oral health services not currently identifiable	• To tag / identify diabetic patients for data collection and analysis – aim for sustainable process	• **Achieved for project patients only** – sustainability to be addressed through the ISOH system with the introduction of electronic health records for oral health patients – 2012
Sustainability of referral pathways and service delivery - **need to embed oral health into general health pathways, education and services**	• Incorporate oral health referral into 'Central Referral System' currently used by Community Health Services, Metro North • Incorporate use of technology to improve referral rate - o Project documents to be made available online – QHEPS and GPpartners website o Patient referral document to have online submission option • To continue investigations into project use of electronic record sharing through GPpartners Health Record Exchange Program (HReXchange) • Continue to identify and support project champions in Oral health, community health, GPpartners and the General Medical Practitioner community	• Not achieved – referrals not from MNHS Central Referral System, but locally initiated locally from Community Health Centres – Chermside, North Lakes, Pine Rivers • **Achieved** – • Project information and referral documents available online- • Patient referral available electronically • **Not achieved** - HRX electronic information sharing not achieved within project timeframe – investigation of benefits to continue – ongoing Senior OHT (District) • Ongoing – Senior OHT (District) to facilitate ongoing support for project champions in Oral health, community health, GPpartners, and the GP community
Community health practitioners do not currently acknowledge the need to prioritise oral health care for diabetic patients	• Develop and conduct appropriate Professional Development sessions for referring health practitioners • Embed oral health education sessions into existing Diabetes Health care practitioners professional development programs	• **Achieved** – Oral health PD sessions conducted with Diabetes Educators • Oral health education now a component of 'Diabetes Management Workshops' – Professional Development sessions for health practitioners working with patients with diabetes
Diabetic clients, their families and support groups are generally unaware of the links between diabetes and oral health, and their general oral health knowledge is limited	• Develop and provide appropriate oral health education – individual and group sessions	• **Achieved** and ongoing – • Individual education sessions were conducted with all project patients • Project patients showed improved knowledge of links between OH and diabetes (refer to Appendix 18 – figure 12) • Education sessions with Diabetes support group conducted (CCHC)

Appendix 9 - Project Schedule

Strategy/Activity	Accountable Officer/s	Months											
		Up to Sept 2009	Oct 2009	Nov 2009	Dec 2009	Jan 2010	Feb 2010	Mar 2010	April 2010	May 2010	June 2010	July 2010	Aug 2010
Implementation Phase													
Establish project governance arrangements	Project Sponsor Senior Project Officer	X											
Establish administrative arrangements and secure physical resources													
Secure, train and support clinical / admin staff	Senior Project Officer	X											
Develop, procure project documents / forms	Senior Project Officer	X											
Develop, procure health promotion materials and clinical preventive resources required	Senior Project Officer	X											
Focus test / review project documents / materials / processes - ongoing	Senior Project Officer	X	X	X	X	X	X	X	X	X	X	X	

Strategy/Activity	**Accountable Officer/s**	**Months**											
		Up to Sept 2009	**Oct 2009**	**Nov 2009**	**Dec 2009**	**Jan 2010**	**Feb 2010**	**Mar 2010**	**April 2010**	**May 2010**	**June 2010**	**July 2010**	**Aug 2010**
Liaise with STDC Management to ensure all clinical admin staff and resources being provided in kind are in order for implementation	Senior Project Officer	**X**											
Administration, processing of referrals, appointment making	Senior Administrative Officer - STDC	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Coordinate activities as detailed in project plan													
Roll out service delivery Provide high quality service delivery at each appointment according to best practice guidelines Monitor, review clinical time / resources required at STDC, according to number of referrals – adjust as required	Senior Project Officer Clinical team STDC	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Data recording, management and exchange													
Establish sound data recording processes for evaluation using OHS current software programme ISOH	Senior Project Officer	**X**											

Strategy/Activity	**Accountable Officer/s**	**Months**											
		Up to Sept 2009	**Oct 2009**	**Nov 2009**	**Dec 2009**	**Jan 2010**	**Feb 2010**	**Mar 2010**	**April 2010**	**May 2010**	**June 2010**	**July 2010**	**Aug 2010**
Liaise, consult with GPpartners and project sponsors to develop a plan for implementing the use of electronic health record exchange (HReXchange) for project patients	Senior Project Officer	**X**	**X**	**X**	**X**	**X**	**X**						
Demonstration of (HReXchange) to key oral health stakeholders	Project Sponsor	**X**	**X**										
Develop admin processes for identification and recording of patients who have diabetes who attend STDC Collect baseline data to identify diabetic patients	Senior Project Officer	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Investigate incorporation of oral health referral into 'Central Referral System' currently used by Northside Health Service District	Senior Project Officer	**X**	**X**	**X**	**X**								
Professional Development / Education Develop, procure, organise training and education Professional Development Sessions for- Oral health staff; Referring health practitioners	Senior Project Officer	**X**	**X**	**X**	**X**	**X**	**X**						

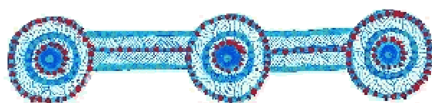
Strategy/Activity	**Accountable Officer/s**	**Months**											
		Up to Sept 2009	**Oct 2009**	**Nov 2009**	**Dec 2009**	**Jan 2010**	**Feb 2010**	**Mar 2010**	**April 2010**	**May 2010**	**June 2010**	**July 2010**	**Aug 2010**
Implement training and education sessions	Senior Project Officer		**X**	**X**	**X**	**X**	**X**						
Support access to Cert IV in Oral Health Education for Dental Assistants	Senior Project Officer Senior Dental Assistant (District)	**X**	**X**	**X**	**X**	**X**	**X**						
Develop and provide appropriate oral health education for diabetic clients and their families – individual and group sessions	Senior Project Officer	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Conduct group OH training sessions with Diabetes support groups in Metro North	Senior Project Officer	**X**	**X**										
Incorporate oral health education component into Diabetes Management Program run by CCHC for general health practitioners who work with diabetic clients	Senior Project Officer	**X**	**X**	**X**									
Promote project with all stakeholders Write / publish regular newsletter articles Ongoing email correspondence, face to face and phone contact with all stakeholders	Senior Project Officer Project Champions	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**

Strategy/Activity	**Accountable Officer/s**	**Months**											
		Up to Sept 2009	**Oct 2009**	**Nov 2009**	**Dec 2009**	**Jan 2010**	**Feb 2010**	**Mar 2010**	**April 2010**	**May 2010**	**June 2010**	**July 2010**	**Aug 2010**
Secure partnerships and pathways													
Identify partners	Senior Project Officer	**X**											
Liaise, consult, provide ongoing open lines of communication with referring health practitioners as per Communication Plan	Senior Project Officer	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Develop and implement collaborative service agreements between Metro North Community Health Services	Senior Project Officer	**X**	**X**	**X**									
Investigate the use of the central referral unit currently being used by Metro North Community Health Service District	Senior Project Officer	**X**	**X**	**X**	**X**								
Project Management Activities													
Develop / review risk Management Plan (ongoing)	Senior Project Officer	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Develop / review Communication Plan (ongoing) Prepare and present status reports as per governance arrangements	Senior Project Officer	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Develop / review Quality Assurance	Senior Project Officer	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**

Strategy/Activity	**Accountable Officer/s**	**Months**											
		Up to Sept 2009	**Oct 2009**	**Nov 2009**	**Dec 2009**	**Jan 2010**	**Feb 2010**	**Mar 2010**	**April 2010**	**May 2010**	**June 2010**	**July 2010**	**Aug 2010**
Management Protocol and Plan													
Develop / review Change Management Protocol and Plan (ongoing) Monitor and review project progress Amend project plan as required	Senior Project Officer	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Develop Cost Management Protocol and Plan (ongoing)	Senior Project Officer Project Sponsor	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Develop Evaluation Plan	Senior Project Officer	**X**	**X**	**X**	**X**	**X**							
Process Evaluation (ongoing)	Senior Project Officer	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Impact Evaluation (ongoing)	Senior Project Officer	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Outcome Evaluation	Project Sponsor Senior Oral Health Therapist – District											**X**	**X**

Appendix 10 -

Project Documents



Information for Referring Health Practitioners

Models of Care Project – Oral Health Support for Adults with Diabetes Mellitus

Thank you for your interest in the project and willingness to refer clients to Metro North Oral Health Services, as part of the Models of Care Project. The project involves trialling a referral pathway for adults with diabetes to prioritise their access to public dental care. At this stage we anticipate that the project trial will run from July to June 2010, or until we have seen 200 patients.

All clients with diabetes are eligible to be referred if they hold one of the following -

- Pensioner Concession Card – issued by Centrelink
- Health Care Card – issued by Centrelink
- Sickness Benefits Card
- Pensioner Benefit Card – issued by the Department of Veteran's Affairs
- Queensland Seniors Card
- Commonwealth Seniors Health Card

and reside in a suburb in the Metro North Oral Health Services, RBWH area **(refer to Locality Guide).**

The forms that you will use to refer clients comprise three pages. The first two can be printed as a duplex, and contain information about the project that needs to be given to the referred client. The third page (Participant Referral Form) can be downloaded and faxed, or submitted electronically – available from Oral Health Services Homepage – Royal Brisbane and Women's Hospital (now Metro North Oral Health Services) - http://hi.bns.health.qld.gov.au/oral_health/community_adult/default.htm#care

and GPpartners internet website – Health Services Directory – Oral health

http://www.gppartners.com.au/content/Document/hsd/Oral_Health_for_Diabetes.pdf

Please talk through the details on page one with your clients and explain that they need to phone Stafford Dental Clinic to make a dental appointment. Could you please date and note the facility from which you are referring and then fax/submit the referral form through to the Stafford Dental Clinic (Fax. No. 3857 1214). Keep your copy as a record of client referral for the project, as required by your local documentation requirements.

- When clients phone Stafford Dental Clinic, they will be given an appointment for an initial assessment with the oral health therapist. They will be offered a **full course of dental care** as required.
- Please provide feedback as this will give valuable input into further development of our project plan and procedures.

Thank you all for your support. Providing an oral health check and care for your diabetic clients will help their general health and quality of life.

If clients do not hold a concession card they may still be eligible for referral for dental treatment via the Enhanced Primary Care Plan – 'Dental services under Medicare for people with chronic and complex conditions', please refer to: http://www.health.gov.au/internet/main/publishing.nsf/Content/Dental+Care+Services

Anna Willis

Senior Project Officer, Models of Care Project

Anna_Willis@health.qld.gov.au

Metro North Oral Health Service - Ph: 3257 3533

Queensland Government

Participant Information

HREC No:

Name of researcher: Anna Willis, Senior Project Officer, Metro North Oral Health Services

Metro North Health Service District's Primary and Community Health Services, and private general practitioners, are partnering RBWH Oral Health Services in a project to provide people with Diabetes Mellitus oral health education, dental assessment and treatment. This free treatment will be provided to eligible clients at the Stafford Dental Clinic, Balerang Street, Stafford (see over page for location & public transport details).

You are eligible and invited to participate in this study, if you reside in Metro North Health Service District and are:

- a diabetic client (18 yrs +), who holds one of the following -
    - Pensioner Concession Card – issued by Centrelink
    - Health Care Card – issued by Centrelink
    - Sickness Benefits Card
    - Pensioner Benefit Card – issued by the Department of Veteran's Affairs
    - Queensland Seniors Card
    - Commonwealth Seniors Health Card

If you are eligible and interested:

- You will be referred to Stafford Dental Clinic by your doctor or health practitioner
- Phone **1300 650 002 between 10am and 4pm,** state that you have diabetes mellitus and make an appointment for an oral health assessment
- Attend this appointment with the oral health therapist – a preventive treatment plan will be recommended for you, it may include -
    - Oral health education
    - Preventive care such as teeth cleaning and scaling
    - A follow up appointment with a dentist for a check up, restorative work, such as fillings &
    - Referral to specialists if required

You will receive a free toothbrush and dental products

Your contribution is entirely voluntary and includes:

- A desire to improve your oral health and general health
- Completing some questions about your dental knowledge, habits and satisfaction
- Signing the consent form at your first dental appointment
- Bringing your current medication list and your Glucose / Sugar Log Book with you to your dental appointment
- You may decline to participate in this project or withdraw at any time without disadvantage
- Identified risk and inconvenience is limited to questionnaire completion and those of your routine oral health care

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During this study, data will be collected about you including your medical history, oral health status and results from the questionnaires you complete. This material will be treated confidentially and stored securely. If the results of this study are published, you will not be identified in any way. If you wish to find out about the research results you can contact the researcher for a summary of the results of the project.

This study adheres to the Guidelines of the ethical review process The Prince Charles Hospital Research Governance and Ethics Unit and is in accordance with the National Health and Medical Research Council's guidelines. You are free to discuss your participation in this study with project staff (contactable on 32573533). If you would like to speak to an officer not involved in the study, you may contact the Executive Officer, Research and ethics, The Prince Charles Hospital on 3139 4500.

This information sheet is for you to keep. Thank you for considering participation in this research.

For further information contact:

Anna Willis

Senior Project Officer, Models of Care Project / Investigator

Anna_Willis@health.qld.gov.au

Metro North Oral Health Services - Ph: 3257 3533

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Queensland Government

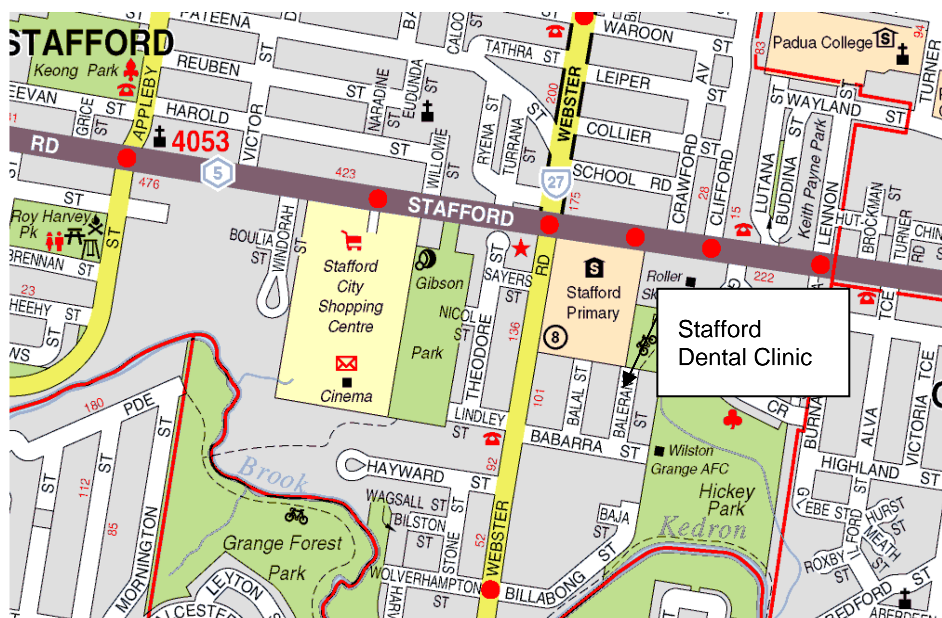
Metro North Oral Health Services' Community Oral Health Program

Stafford Dental Clinic – Location Map UBD reference: Map 139 L 6

For public transport details to access Stafford Dental Clinic please contact:

TransLink - on 131230 or http://www.translink.com.au/

If using own transport, turn left at Babarra Street (opposite Stafford Police Station), then second left into Balerang Street, continue to end of street and follow road to ample parking outside the clinic. Clinic is located at rear of Stafford State School.



Record your appointment details here:

Day	Date	Time

You will need to present at the clinic with your current concession card 10 minutes prior to the appointment time to confirm eligibility and complete any required documentation. If circumstances change and you cannot attend this appointment please contact the clinic on **1300 650 002.** p.3

Project Overview

The development, trial and evaluation of new models of care for the Health Practitioner workforce is one strategy being implemented to assist in identifying sustainable workforce and service models. Targeted sites have been identified to showcase workforce and service delivery reforms, and generate learnings that can be transferred to other sites and services across Queensland. This project is one of several demonstration projects being run across Queensland and is being overseen by Allied Health Workforce Advice & Coordination Unit (AHWACU).

This project aims to develop, implement and evaluate a multi-disciplinary model of care that will address oral health needs for adults with diabetes mellitus residing in the Metro North Health Service District. To achieve this Metro North Health Service District's Primary and Community Health Services, and private general practitioners are partnering Metro North Oral Health Services to provide adults with Diabetes Mellitus with oral health education and dental care. The project involves trialling a new referral pathway for adults with diabetes to prioritise their access to public dental care.

As part of the project free oral health care can be provided to eligible clients who:

- Have Diabetes Mellitus
- Are Health Care Card or Concession Card holders
- Reside in the RBWH Oral Health Services catchment suburbs within Metro North Health Service District

For details please see –

- Information For Referring Health Practitioners
- Participant Information Form
- Participant Referral Form
- Participant Consent Form
- Revocation of Consent Form
- RBWH Oral Health Services Locality Guide (Metro North)
- Colgate Oral Care for People with Diabetes Brochure
- or contact -

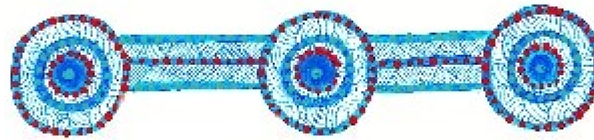
Anna Willis Anna_Willis@health.qld.gov.au

Senior Project Officer Models of Care Project

GPpartners Advancing Primary Care

Queensland Government

Participant Consent Form



HREC No:

Name of researcher: Anna Willis, Senior Project Officer, Metro North Oral Health Services

I freely agree to participate in the above named project and in doing so acknowledge that: I have read and I understand the Participant Information Form version 2, dated September 1, 2009. I have been given a copy of this sheet to keep. I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I understand that my identity and personal details will not be revealed if information about this project is published or presented in any public form. I understand that I am free to withdraw from the study without penalty. I understand that I may not benefit directly from my participation in the study.

I understand that risk and inconvenience if I participate, is limited to questionnaire completion and those of your routine oral health care.

Participant details: (affix chart label)

Participant's Name (printed)
Signature
Date
Investigator's Name (as Witness) (printed)
Signature
Date

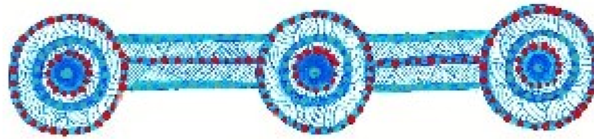
Anna Willis

Senior Project Officer, Models of Care Project / Investigator

Anna_Willis@health.qld.gov.au

Metro North Oral Health Services - Ph: 3257 3533

Participant Referral Form



This participant has been provided with information and is willing to participate in the Oral Health Support for Adults with Diabetes Mellitus project:

Participant details:

Name ____

Address ____

Contact (h) ____________________ (mob) ____________________

Email ____

Date of Birth ____

Referring Health Practitioner details:

Date :	Name of referring health practitioner :	Signature : # not required if submitting electronically
Health facility/ Practice Name :	Health facility/ Practice Address:	Health facility/ Practice Contact No:

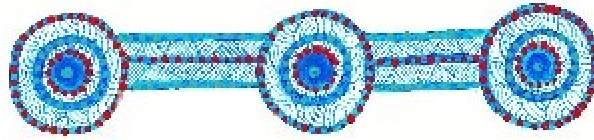
or place practice stamp here:

Please press SUBMIT button; or

fax completed form to Stafford Dental Clinic – Fax: 3857 1214

Queensland Government

Revocation of Consent Form - Participant



HREC NO:

Name of researcher: Anna Willis, Senior Project Officer, Metro North Oral Health Services

I hereby wish to WITHDRAW my consent to participate in the research project described above and understand that such withdrawal WILL NOT jeopardise any treatment or my relationship with Metro North Oral Health Service.

Participant's Name (printed)
Signature
Date

This revocation of consent should be forwarded to:

Anna Willis

Senior Project Officer, Models of Care Project / Investigator

Anna_Willis@health.qld.gov.au

Metro North Oral Health Services - Ph: 3257 3533

112 Alfred Street

Fortitude Valley Q 4006

Queensland Government
Queensland Health

Appendix 11

Royal Brisbane and Womens' Hospital
Health Service District

RBWH Oral Health Services
Facility : Stafford Dental Clinic

Registration Number__________________
First Name ___________________________
Surname ____________________________
Sex __ Date of Birth ___________

Date:

Age ----------

Occupation/ Lifestyle ---------------------------------------

Sporting Activities/Hobbies ---

SYMPTOMS	MEDICAL HISTORY
▪ **Toothache** ▪ Bleeding on Brushing ▪ Bleeding on Flossing ▪ Recession ▪ Loose Teeth ▪ Bad Breath ▪ Bad Taste ▪ Sensitivity ▪ Staining ▪ Food Impaction	▪ **Medical Alerts** ▪ **Medications** ▪ Family History of ▪ Diabetes ▪ Blood Disorders ▪ CardioVascular Disease ▪ Smoker ▪ How long ▪ How many ▪ Like to QUIT
FAMILY HISTORY ▪ **Mother lost teeth** ▪ Father lost teeth ▪ Siblings with symptoms	PAST TREATMENT ▪ **Knowledge of Gum Disease/Decay** ▪ Regular Attender ▪ Past Treatment
ORAL HYGIENE ▪ **Plaque Control** ▪ **Current OH Aides** ▪ **Brushing daily** ▪ Interproximal Care ▪ Mouthwash ▪ Sugar/Acid in Diet ▪ Fluoride Exposure ▪ Salivary Flow	**Part A:** ▪ PLEASE HIGHLIGHT/CIRCLE RELEVANT ISSUES

Extra – Oral Significance

Intra-Oral Significance

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Condition	Localised	Generalised	Heavy	Moderate	Light
Supra Plaque					
Supra Calculus					
Sub-Plaque					
Sub-Calculus					
Inflammation					
Suppuration					
Pocketing					

PSR SCORE

Code	Periodontal Status
0	Healthy
1	Bleeding
2	Calculus PD< 3.5 mm.
3	PD 4-5 mm.
4	PD > 5 mm.

furcation, recession, mobility, mucogingival problems

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Appendix 12

Periodontal Screening and Recording

(PSR)

Using PSR Periodontal Examination Probe – 0.5mm diameter ball tip, colour-coded band extending 3.5 -5.5mm.

Code 0

Coloured area of probe remains completely visible in the deepest crevice of the sextant (i.e. < 3.5mm depth). No calculus or defective margins are detected. Gingival tissues are healthy with no bleeding after gentle probing.

Code 1

Coloured area of probe remains completely visible in the deepest probing depth in the sextant. No calculus or margins are detected. There is bleeding after gentle probing.

Code 2

Coloured area of probe remains completely visible in the deepest probing depth in the sextant. Supra- or subgingival calculus and/or defective margins are detected.

Code 3

Coloured area of probe remains partly visible in the deepest probing depth in the sextant (i.e. >3.5mm but < 5.5mm).

Code 4

Coloured area of probe completely disappears, indicating probing depth of greater than 5.5mm.

Code *

Denotes clinical abnormalities, including but not limited to furcation invasion, mobility, mucogingival problems or recession extending to the coloured area of the probe (+3.5mm).

Code X

Denotes edentulous sextant

Appropriate code for each sextant entered into graph

<u>**Appendix 13**</u>

- Silness-Löe Index -
(Silness and Löe, 1964)

The Plaque Index System

Scores	Criteria
0	No plaque
1	A film of plaque adhering to the free gingival margin and adjacent area of the tooth. The plaque may be seen in situ only after application of disclosing solution or by using the probe on the tooth surface.
2	Moderate accumulation of soft deposit s within the gingival pocket, or the tooth and gingival margin which can be seen with the naked eye.
3	Abundance of soft matter within the gingival pocket and/or on the tooth and gingival margin.

The buccal surfaces of the following teeth are checked for plaque deposits and given a score from 0 – 3.

Tooth	Index
Maxillary right first molar (16)	2
Maxillary right lateral incisor (12)	1
Maxillary left first bicuspid (24)	1
Mandibular left first molar (36)	3
Mandibular left lateral incisor (32)	2
Mandibular right first bicuspid (44)	1

Appendix – 14: CSQ 8

Please help us improve our program by answering some questions about the services you have received. We are interested in your honest opinions, whether they are positive or negative. *Please answer all of the questions.* We also welcome your comments and suggestions. Thank you very much; we really appreciate your help.

Date – Visit number –

MOC Project – Y/N

Circle your answer:

1. How would you rate the quality of service you have received?

4	3	2	1
Excellent	Good	Fair	Poor

2. Did you get the kind of service you wanted?

1	2	3	4
No, definitely	No, not really	Yes, generally	Yes, definitely

3. To what extent has our program met your needs?

4	3	2	1
Almost all of my needs have been met	Most of my needs have been met	Only a few of my needs have been met	None of my needs have been met

4. If a friend were in need of similar help, would you recommend our program to him or her?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

5. How satisfied are you with the amount of help you have received?

1	2	3	4
Quite dissatisfied	Indifferent or mildly dissatisfied	Mostly satisfied	Very satisfied

6. Have the services you received helped you to deal more effectively with your problems?

4	3	2	1
Yes, they helped a great deal	Yes, they helped	No, they really didn't help	No, they seemed to make things worse

7. In an overall, general sense, how satisfied are you with the service you have received?

4	3	2	1
Very satisfied	Mostly satisfied	Indifferent or mildly dissatisfied	Quite dissatisfied

8. If you were to seek help again, would you come back to our program?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

9. As a result of the information you gained today / during your course of care do you intend to improve your personal oral health practices in future?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

10. Have your oral health behaviours improved since your last visit?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

11. Has your general health or quality of life improved following access to this service?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

Any comments or suggestions:

Appendix 15 RSQ

Part B: Referrer Satisfaction Questionnaire

Please help us improve our service by answering some questions about your experience when referring patients to our program. We are interested in your honest opinions, whether they are positive or negative. *Please answer all the questions.* We also welcome your comments and suggestions. Thank you, we appreciate your help.

Please read each item and tick the box to the right that best represents you answer for that question	Very Dissatisfied	Dissatisfied	Neither	Satisfied	Very Satisfied
1. How satisfied are you with the time taken for your patient to receive a service through our program?					
2. How satisfied are you with the information provided to you explaining the service our program provides?					
3. How satisfied are you with the information you received regarding the service your patient received from our program?					
4. How satisfied are you with the overall management of your patient's needs by our program					
5. How satisfied are you with the range of services provided by our program?					
6. How satisfied are you with the overall outcome of your patient's condition?					
7. How satisfied are you with our program as a component of the broader health service?					
	Very Unlikely	**Unlikely**	**Neither**	**Likely**	**Very Likely**
8. In the future, would you consider referring patients with similar needs to our program					

Please write any further comments:

Please return to………..

Appendix - 16
Session Evaluation

Living with diabetes
Management and care of the oral cavity

The purpose of this survey is to help us to improve future oral health information sessions offered to people living with diabetes. All information will be kept strictly confidential and no individuals will be identified in any results that we collate.

Please tick ☑ the relevant boxes or fill in your answers in the space provided.

1. How many times per day do you usually brush your teeth?

None ❑
Once ❑
Twice ❑
More than two ❑

2. Do you brush your gums when you brush your teeth?

Yes ❑
No ❑
Never ❑

3. Do you clean between your teeth?

Yes ❑ What do you use? Please specify
No ❑
Never ❑

4. Please indicate how strongly you agree or disagree with the statements by ticking the box that most closely reflects your own feelings.

Please tick one box ☑ in each row

	Strongly agree	Tend to agree	Tend to disagree	Strongly disagree	No opinion
a. It is my own responsibility to look after my own teeth.	❑	❑	❑	❑	❑
b. Tooth decay can cause other health problems.	❑	❑	❑	❑	❑
c. It is important to me to keep all of my own teeth.	❑	❑	❑	❑	❑
d. Improving my oral health may improve my general health.	❑	❑	❑	❑	❑

5. Please indicate whether you think the following statements are true or false.

Please tick one box ☑ in each row

Statement	True	False	Don't know
a. A softer toothbrush is better than a hard one for cleaning teeth.	True ❑	False ❑	Don't know ❑
b. People with dry mouths will tend to get less decay.	True ❑	False ❑	Don't know ❑
c. Once gum disease has started, it is almost impossible to halt.	True ❑	False ❑	Don't know ❑
d. Medication can affect our oral health.	True ❑	False ❑	Don't know ❑
e. My diabetes and my oral health are linked.	True ❑	False ❑	Don't know ❑
f. Saliva plays an important role in the maintenance of oral health.	True ❑	False ❑	Don't know ❑
g. Periodontitis is curable.	True ❑	False ❑	Don't know ❑

Today's date: ____

Thank you for your participation and assistance in completing this survey.

Please return this survey to the Oral Health Therapist.

Appendix 17 - List of tasks performed by OHT in Model of Care – Oral Health Support for Adults with Diabetes Project

Welcome patient to clinic

- Patient completes Medical History
- Review Medical History – take copy of current medication list and file in chart
- Check with MIMS if required re medications
- (if any uncertainties about fitness of patient for exam – MH checked by dental officer and signed)
- Patient asked to confirm current diabetes status – (check patient BSL record book)
    - Controlled / uncontrolled
    - Most recent BSL reading
    - Most recent HbA1C (well controlled <7%)

Patient to complete – Project Consent form + given Revocation of Consent form

Assist patient to complete Questionnaire – 'Living with Diabetes – Management and

Consult with patient – dental hygiene assessment – risk assessment questions

Patient in chair for Oral Health Assessment with OHT – includes

- Facial & TMJ check
- Soft tissue check
- Gingival health assessed – gingivitis / perio
- OH status – plaque score / bleeding / PSR
- Salivary test – need for saliva test as part of OH care plan
- Dentition check
- Charting of teeth – caries charted
- X-rays taken (BWs PAs is required – need for OPG noted)
- OHED, OHI, Debridement for low risk patient

Write up

- Risk assessment (as per DH assessment from DH clinical pathway)
- Completion of 'Patient plan for oral health care from the OHT (from DH clinical pathway)(copy to pt)
- Charting done by DA reviewed

Preventive care plan written –

- Explanation of current OH status and risk for perio, caries, toothwear
- Links between OH and diabetes discussed
- OHED, OHI, TBI, Interdental cleaning
- Debridement as required
- Dietary advice
- Smoking cessation / alcohol
- Review and recall recommended
    - OHT brief consult with dental officer – highlight any main issues for patient

Dental Officer Tasks

- Examination by dental officer
- Medical history reviewed and signed
- Exam done – (charting / x-rays have been done by OHT)
- Treatment plan formulated

OHT consult with patient

- Diabetes /OH 'info & product bag given and explained
- Full TP explained
- Appointments made if req'd / Recall arranged

Appendix 18

Figures: Project results – summary graphs

Project patients wait time - Occasions of service and satisfaction

Figure 1. Average wait time for project patients
2. New appointments
3. Follow up appointments
4. Total occasions of service
5. Patients – Failed to attend (FTA)
6. Client satisfaction comparison

Service Productivity

Figure 7. Wage comparison – Project OHT / dentist
8. Cost per occasion of service – OHT / dentist
Human resource
Figure 9. Accuracy of assessment by OHT

Project Patient Health Outcomes

Figure 10. Improvement in PSR – gingival health
Figure 11. Improvement in Plaque score
Figure 12. Patient knowledge of Diabetes / oral health
Figure 13 Patients with co-morbidities
Figure 14 Co-morbidities by number of conditions
Figure 15 Family history of diabetes
Figure 16 Smokers
Figure 17 Dentures

Referrals to Model of Care Project

Figure 18 Referrals by month – total
Figure 19 Referrals by category
Figure 20 Referrals by facility - CCHC
Figure 21 Referrals by facility – Stafford Dental Clinic
Figure 22 Referrals by facility – Indigenous health
Figure 23 Referrals by facility – Pine Rivers CHC
Figure 24 Referrals by facility- GP / other
Figure 25 Job satisfaction survey

Project Patients Wait Time. Occasions of Service and Satisfaction

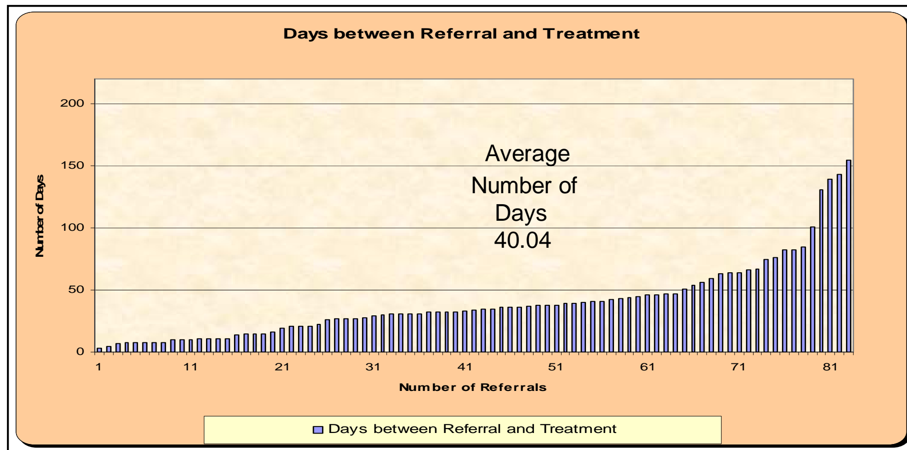
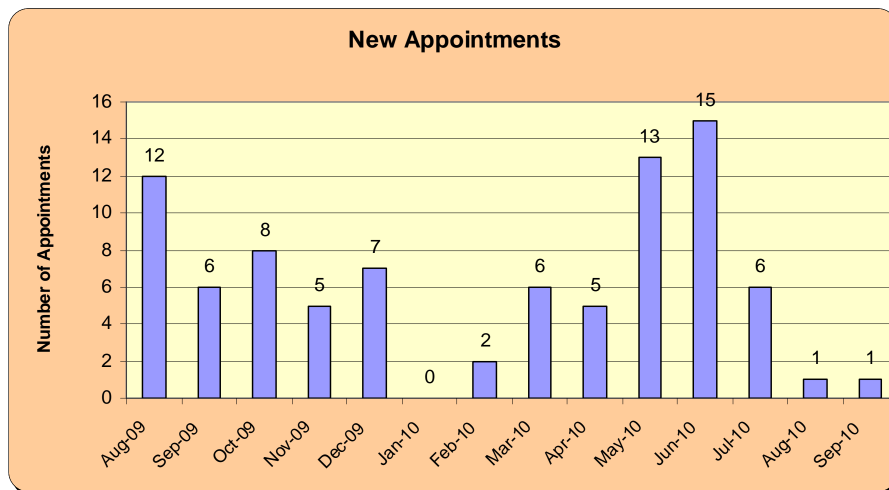


Figure 1



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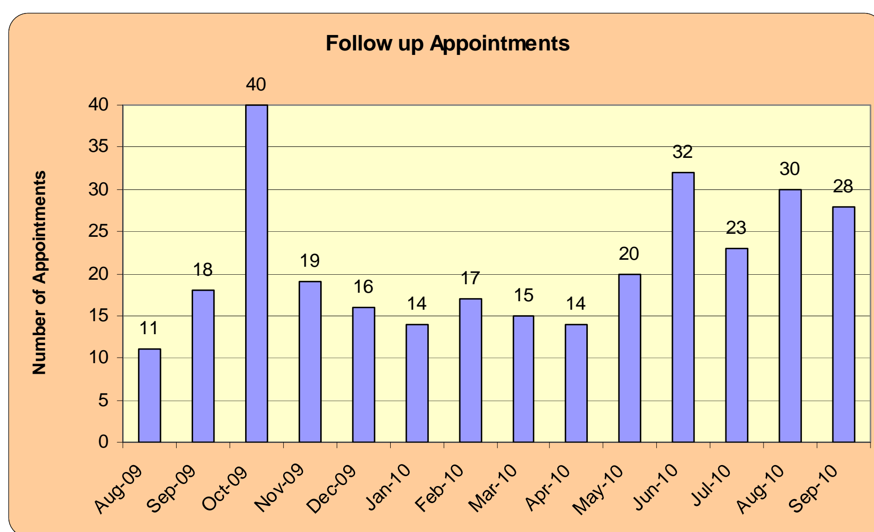

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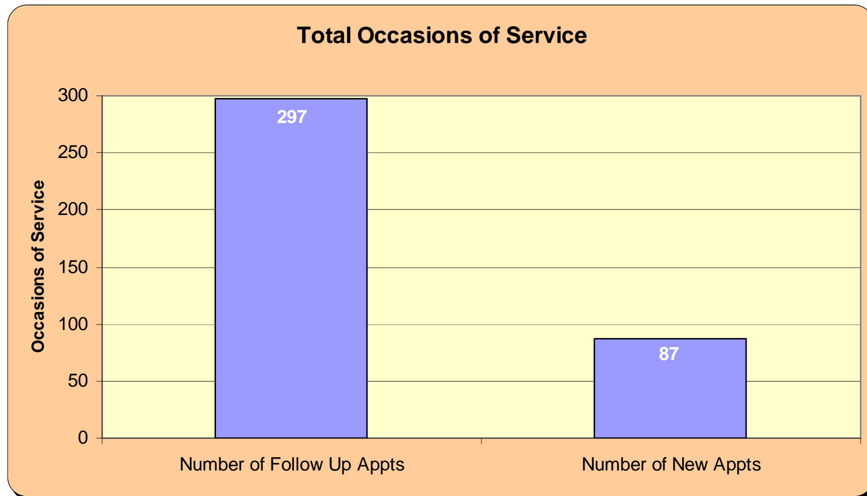

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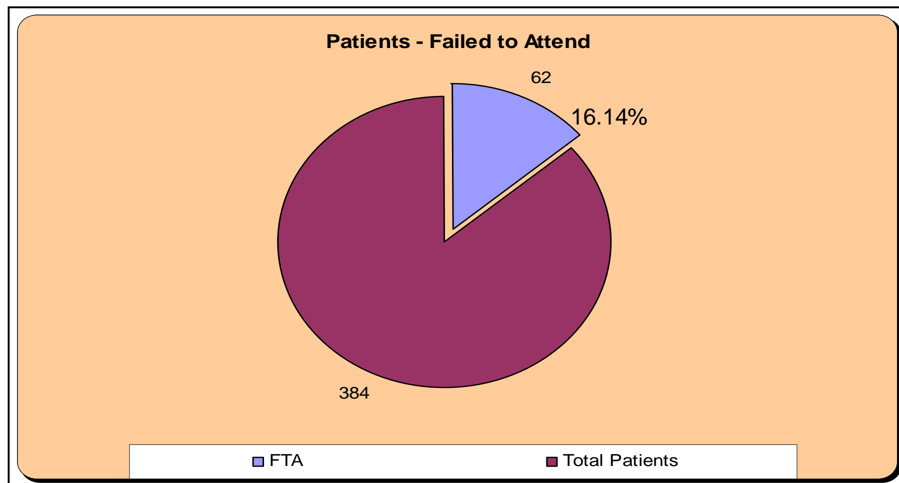

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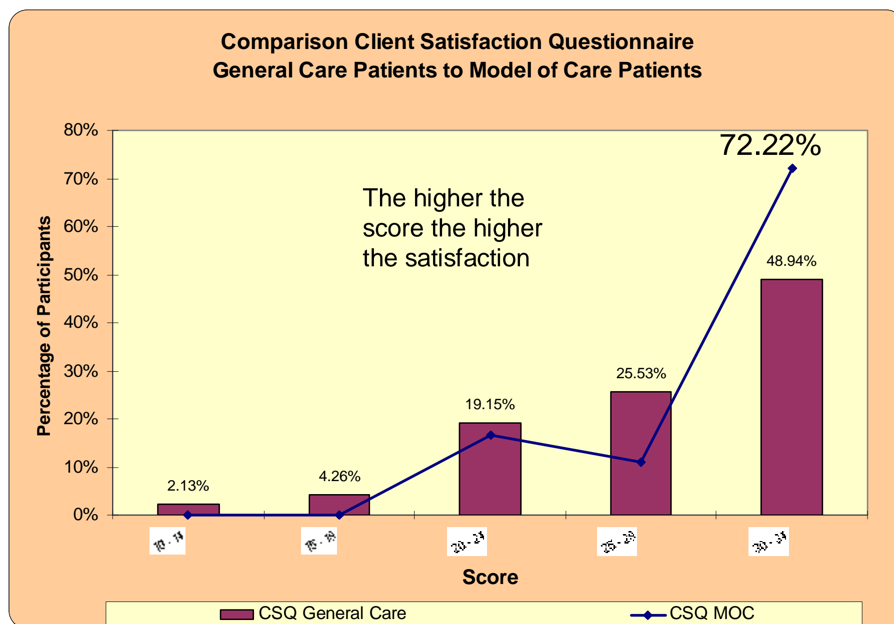
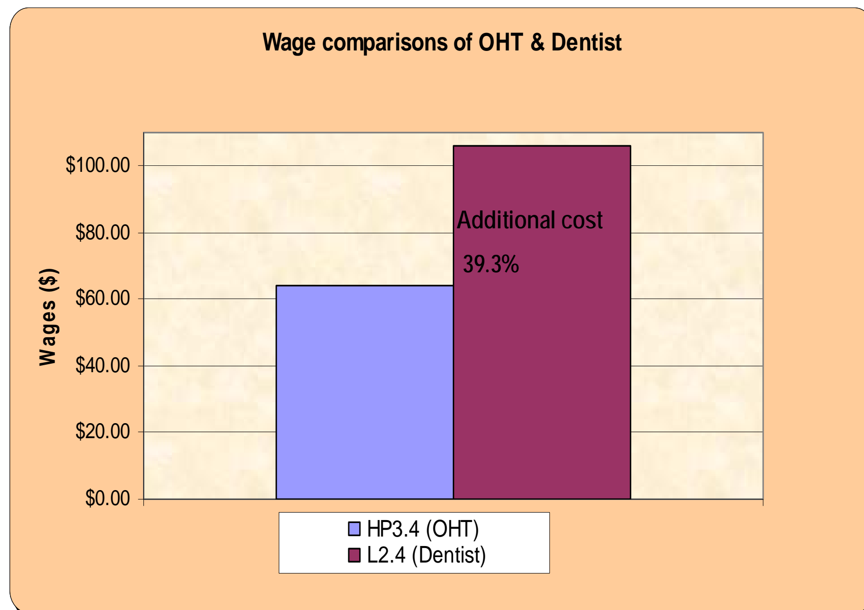


Figure 6

Service Productivity



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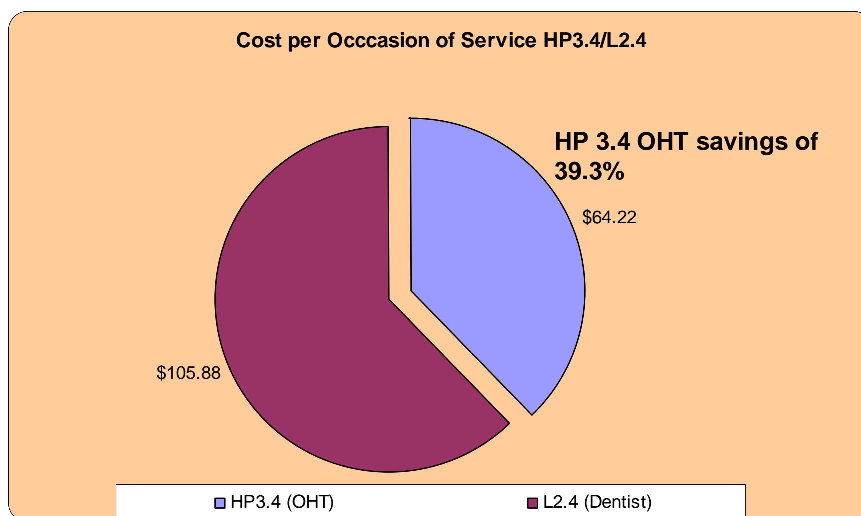


Figure 8

Human Resource (Workforce)

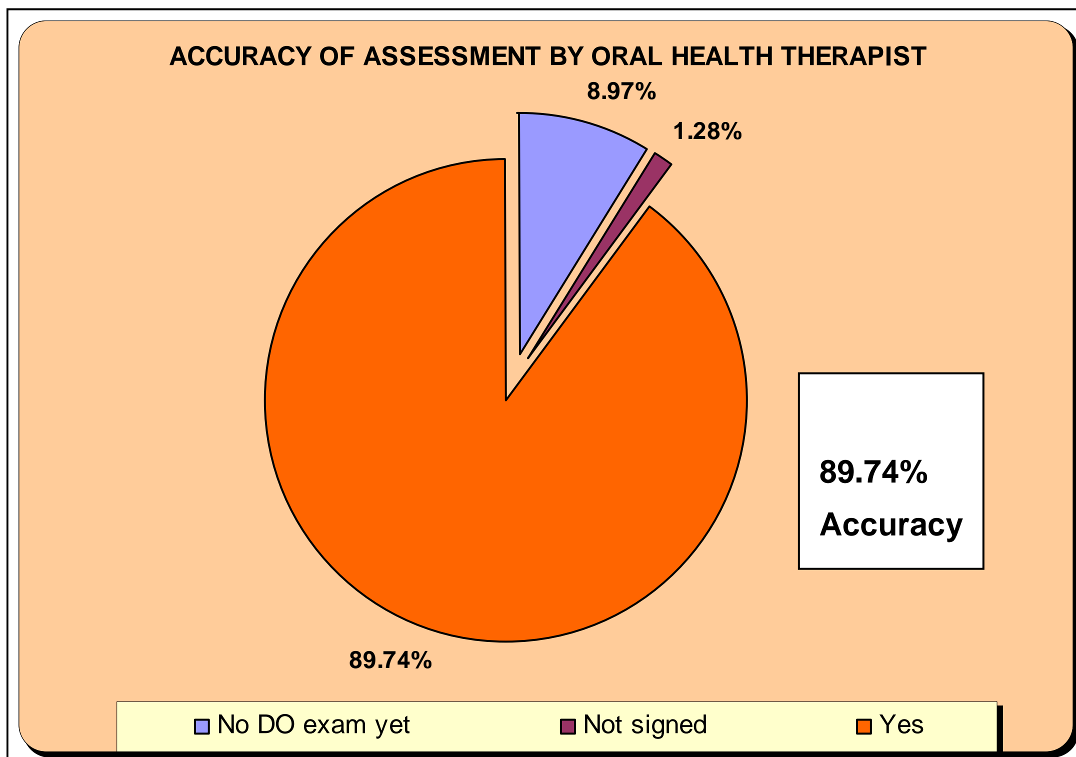
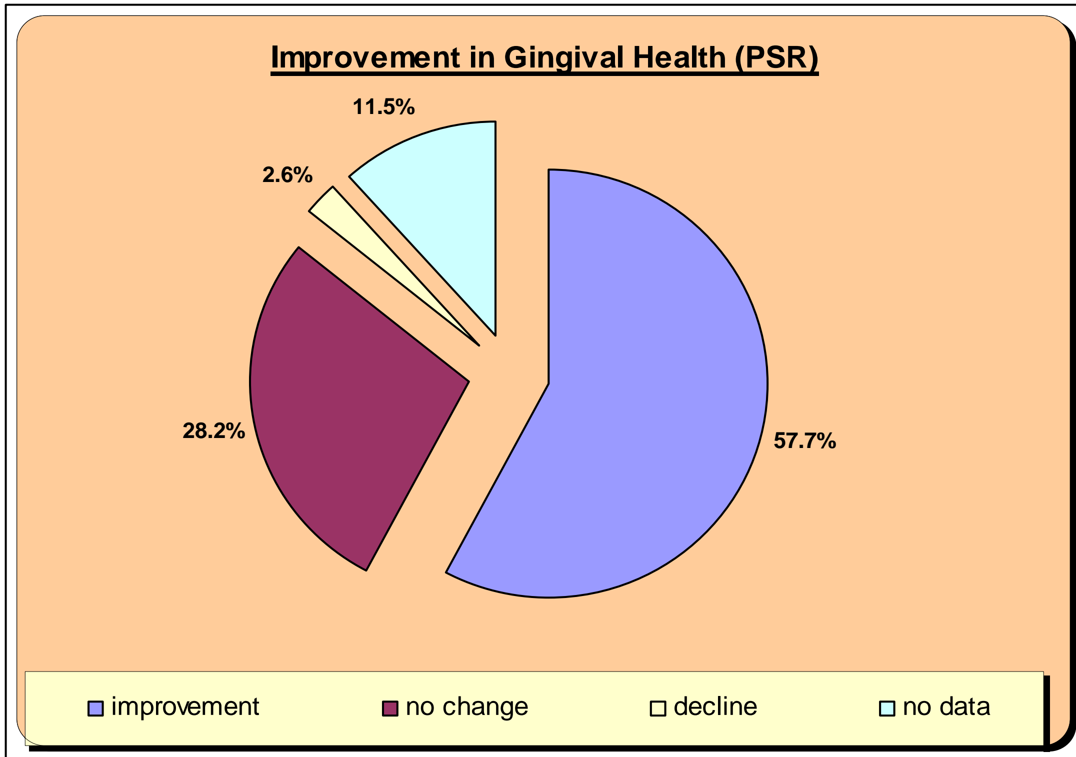


Figure 9

Project Patient Health Outcomes



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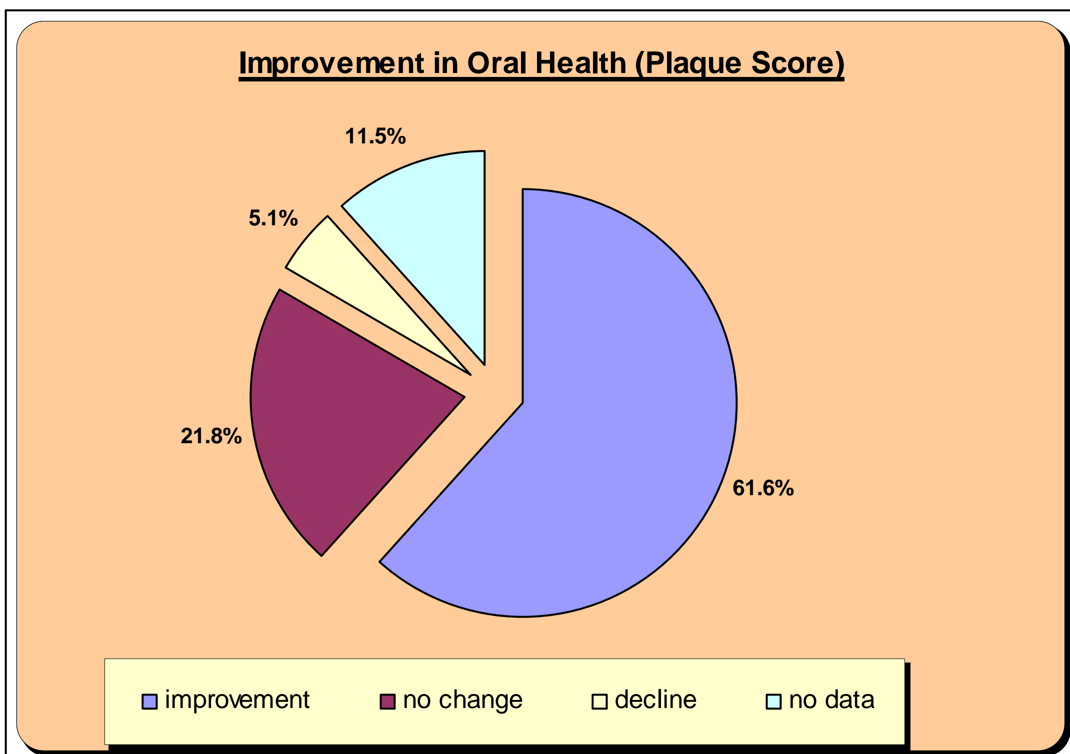

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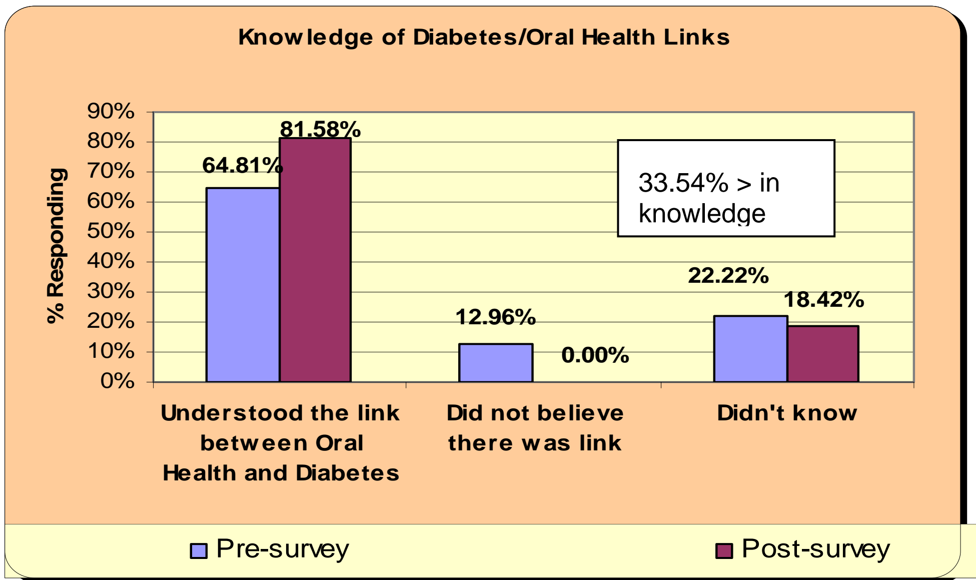

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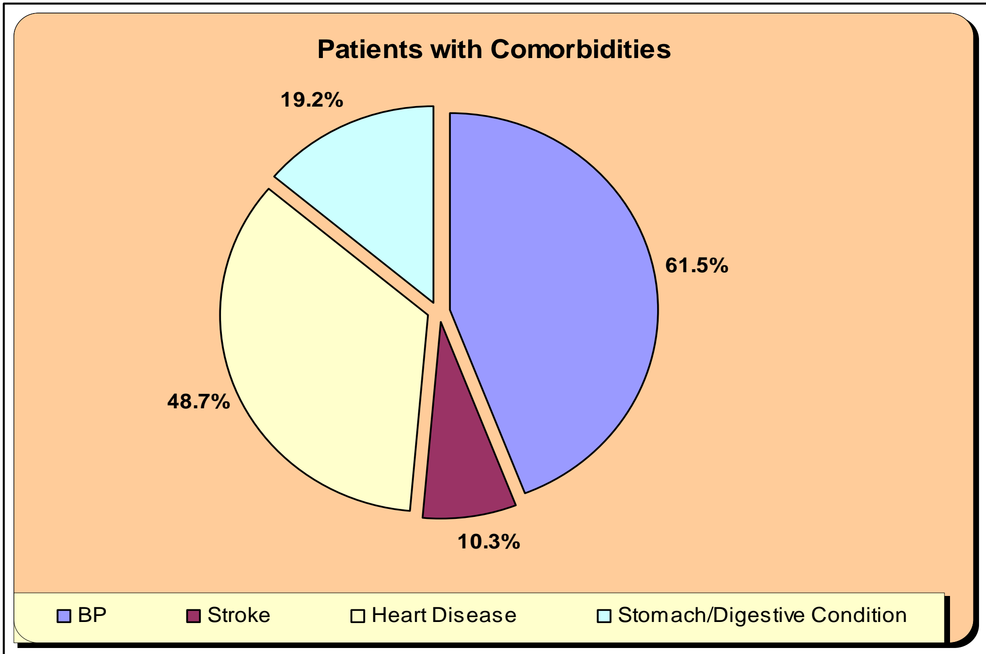

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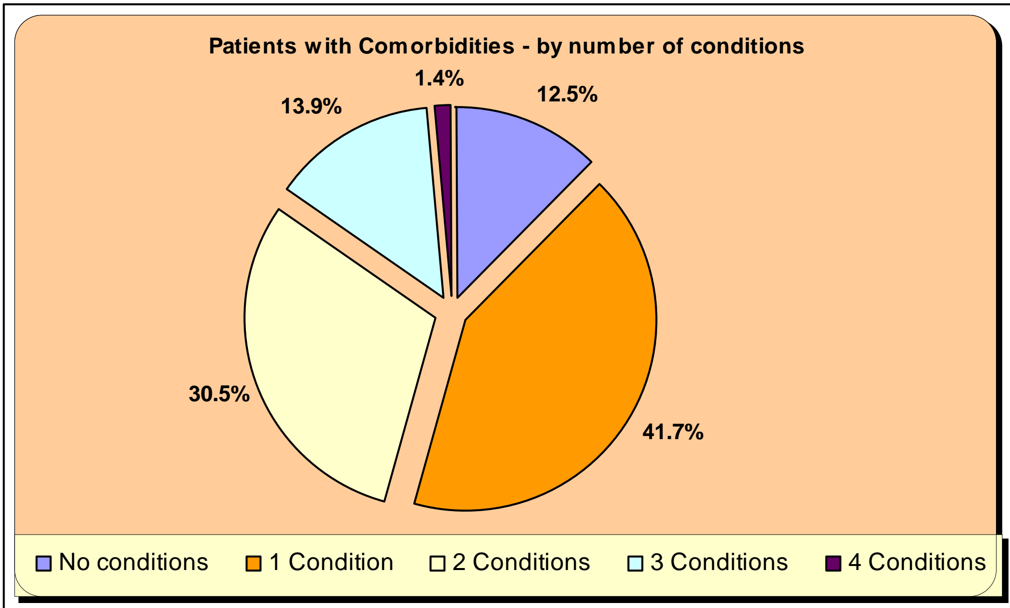

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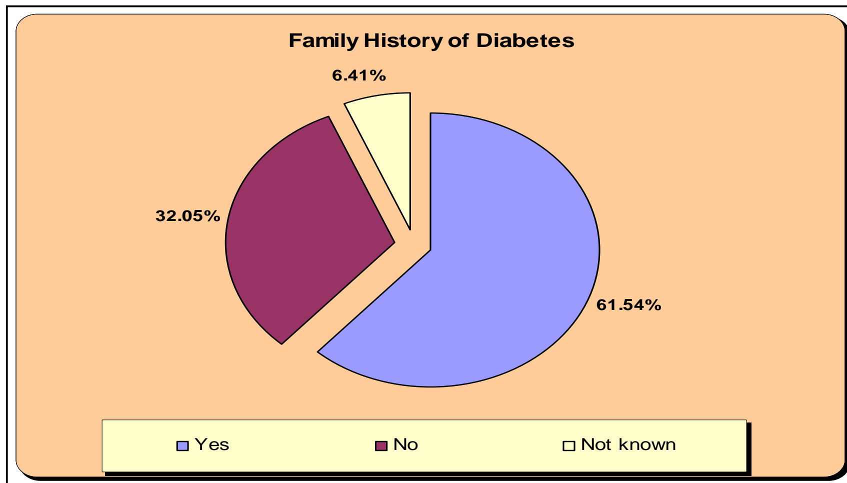

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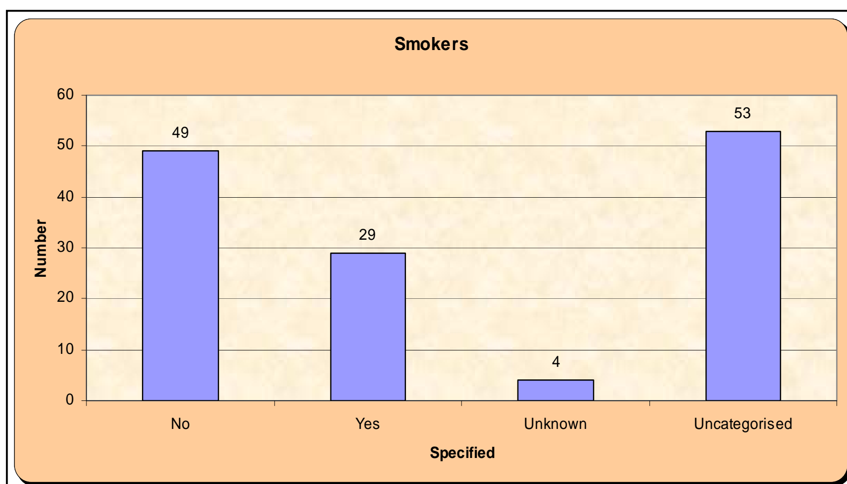

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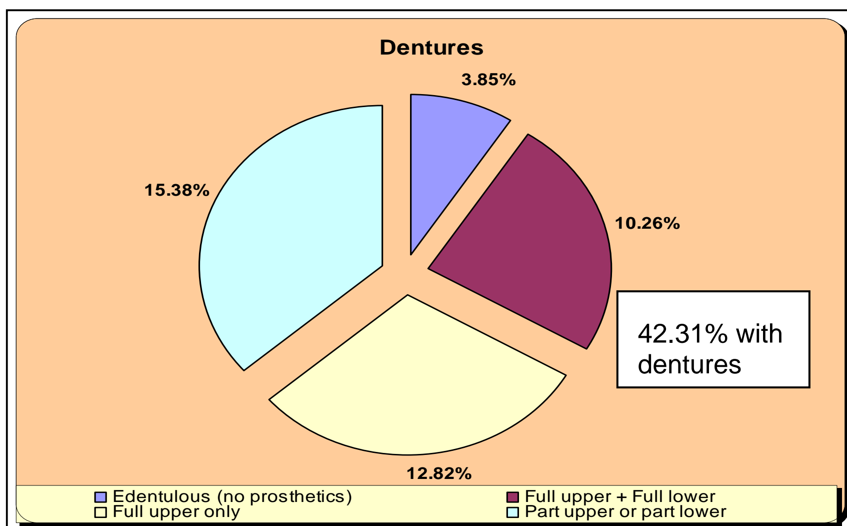
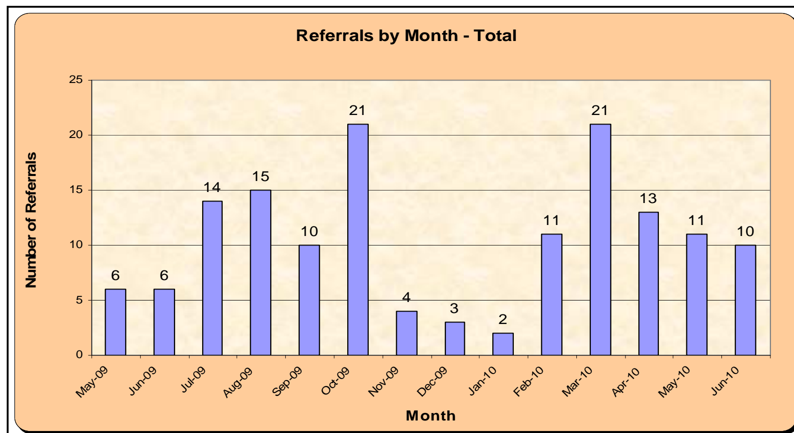


Figure 17

Referrals to Model of Care Project



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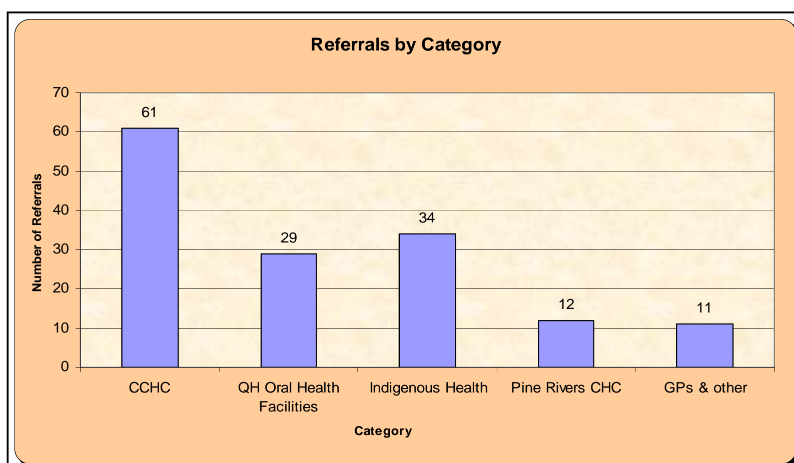

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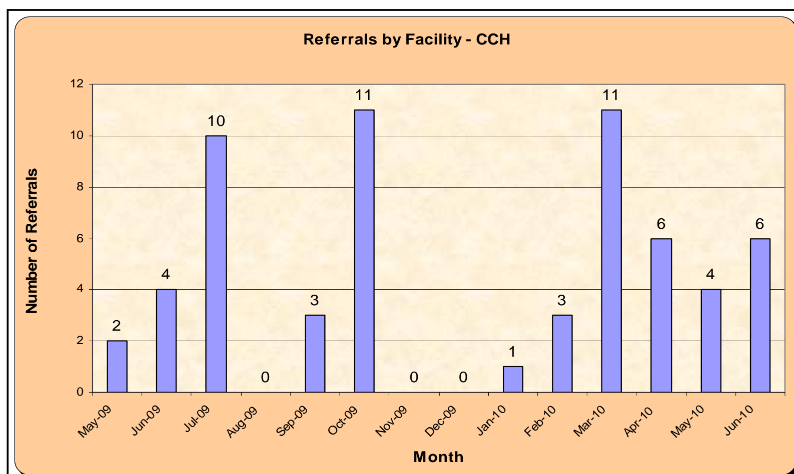

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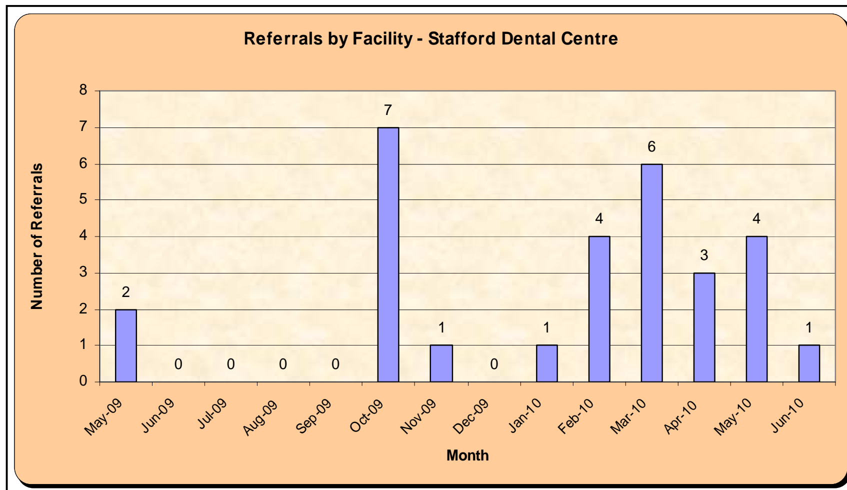

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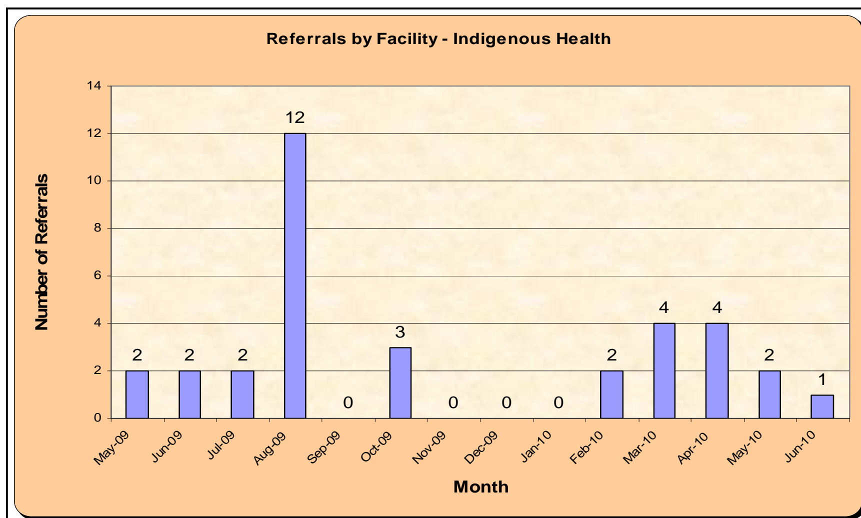

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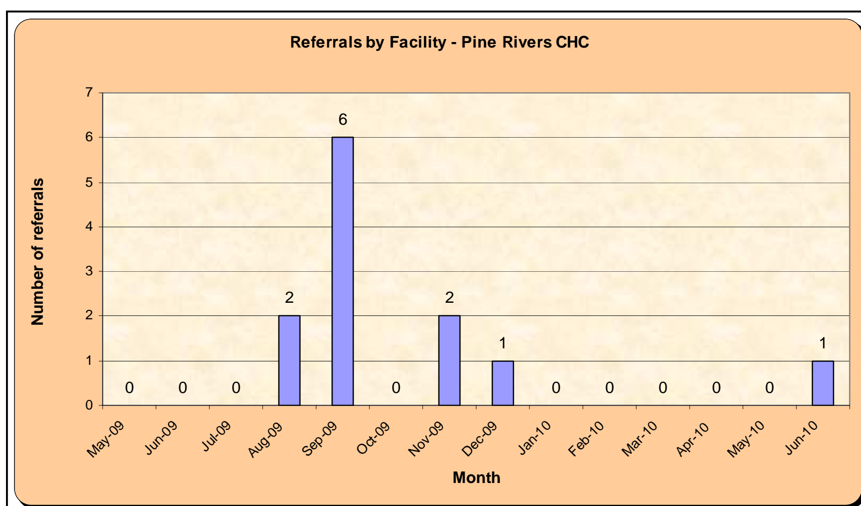

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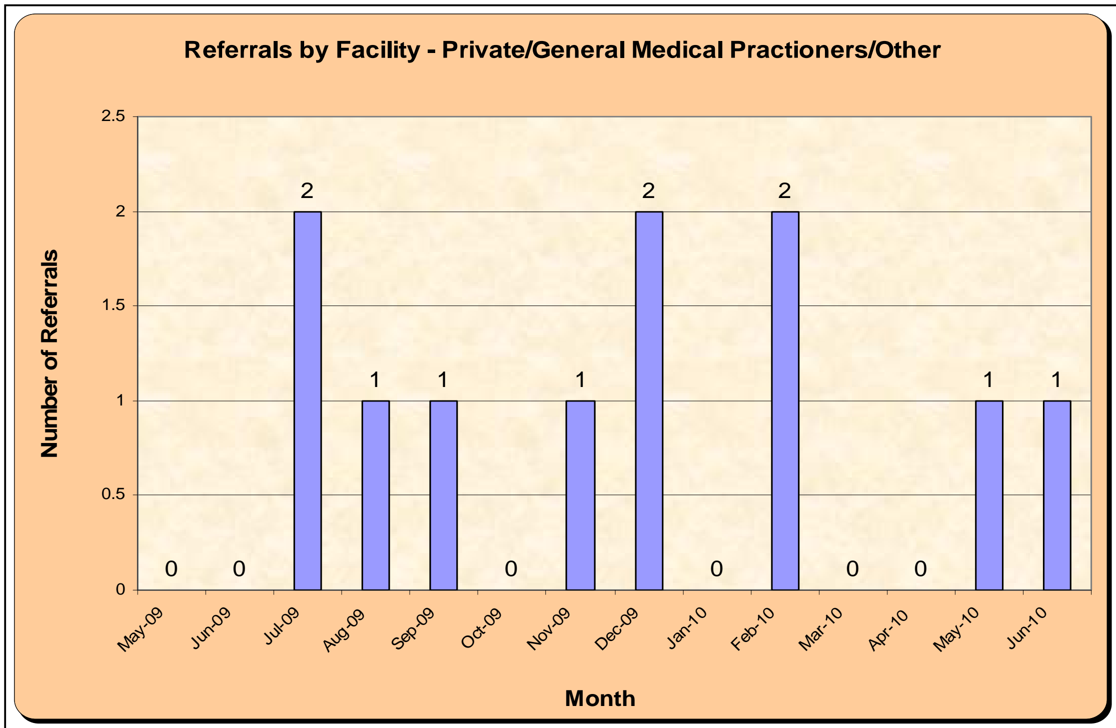
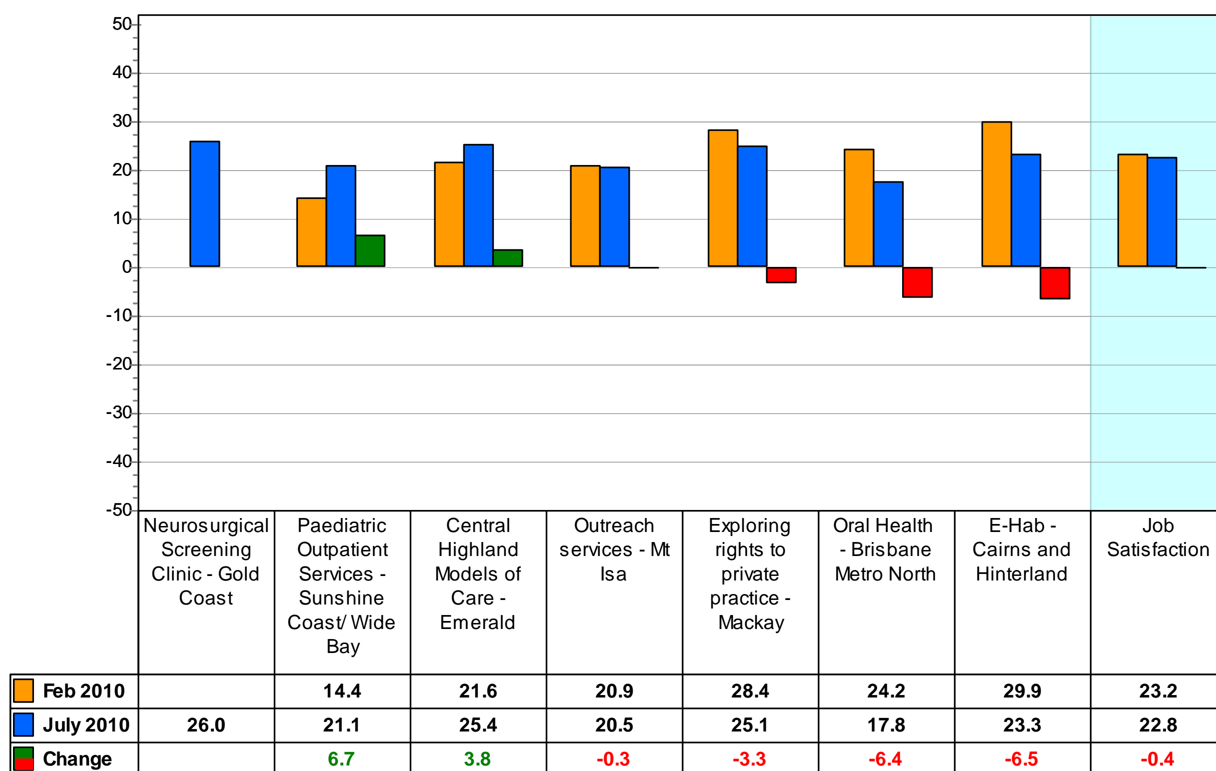


Figure 24

Better Workplaces Staff Opinion Survey



	Neurosurgical Screening Clinic - Gold Coast	Paediatric Outpatient Services - Sunshine Coast/ Wide Bay	Central Highland Models of Care - Emerald	Outreach services - Mt Isa	Exploring rights to private practice - Mackay	Oral Health - Brisbane Metro North	E-Hab - Cairns and Hinterland	Job Satisfaction
Feb 2010		14.4	21.6	20.9	28.4	24.2	29.9	23.2
July 2010	26.0	21.1	25.4	20.5	25.1	17.8	23.3	22.8
Change		6.7	3.8	-0.3	-3.3	-6.4	-6.5	-0.4

Figure 25 - Job Satisfaction across Project

Dental Board of Australia
Scope of practice registration standard

Authority

This standard has been approved by the Australian Health Workforce Ministerial Council on 22 April 2010 pursuant to the *Health Practitioner Regulation National Law* (2009) (the National Law) with approval taking effect from 1 July 2010.

Summary

All registrants are required to base their practice on the scope of practice definitions outlined in this standard.

Scope of application

This standard applies to all applicants and all registered practitioners. It does not apply to students and practitioners who have nonpractising registration.

Requirements

1. A dental practitioner must not direct another registered practitioner to undertake dental procedures or give advice outside that person's education or competence.
2. Dental practitioners must only perform those dental procedures:
   a) for which they have been formally educated and trained in programs of study approved by the Board; and
   b) in which they are competent.
3. Dentists work as independent practitioner who may practise all parts of dentistry and are the clinical team leaders. Dentists may supply and fit dental appliances for the treatment of sleep disorders. They must work in cooperation with the patient's medical practitioner who is responsible for the medical aspects of the management of sleep disordered breathing.
5. Dental prosthetists work as independent practitioners in making, fitting, supplying and repairing removable dentures and flexible, removable mouthguards.
6. Dental hygienists, dental therapists and oral health therapists exercise autonomous decision making in those areas in which they have been formally educated and trained. They may only practice within a structured professional relationship with a dentist. They must not practise as independent practitioners. They may practise in a range of environments that are not limited to direct supervision.

Definitions

Independent practitioner means a practitioner who may practise without supervision.

Supervision includes oversight, direction, guidance and/or support.

References

Dental Board of Australia, Guidelines for *Registration Standards — Scope of Practice Standard* (may be developed)

National Standards in Dentistry Project — undertaken by the Dental Boards of Australia and New Zealand in consultation with the Australian Dental Council

Review

This standard will commence on 1 July 2010. The Board will review this standard at least every 18 months.