ABOUT THE BOOK COVER

"Mitre Peak"
(Photographed by Chris Piper)
Mitre Peak is one of New Zealand’s earliest tourist destinations in the Milford Sound, described by Rudyard Kipling as the "eighth wonder of the world". Mitre Peak rises 1700m out of the water and has another 270m underwater.

"Jacaranda mimosifolia in Late October"
(Photographed by Patrick Tsang)
The photo was taken at The University of Queensland. The Jacaranda is locally known as the "exam tree" because of its full bloom coinciding with final exams at the end of each year. The species is a native of South America but is also regarded as a "signature tree" in Australia where it is most widespread in South East Queensland and Northern New South Wales.

"Oral Health in a Tea Cup" (back cover)
(Photographed by Gigi Au Yeung)

Other photographs taken by Annetta Tsang at The University of Queensland. Photographs of oral health learning activities, taken during clinical and preclinical sessions.
CONTENTS

List of Key Contributors vii
Acknowledgements ix
List of Abbreviations x
Foreword xv
Preface xvii

PRELUDE

CHAPTER 1 1
A History of Oral Health Practice (Dental Therapy & Dental Hygiene) in Australia and New Zealand

CHAPTER 2 17
A New Oral Health Professional: The Oral Health Therapist

INTRODUCTION

CHAPTER 3 29
The Genesis of an Idea

BACHELOR DEGREE PROGRAMS

CHAPTER 4 37
The University of Queensland

CHAPTER 5 75
The University of Otago

CHAPTER 6 99
The University of Adelaide

CHAPTER 7 131
Griffith University

© The Authors
CHAPTER 8 149
The University of Melbourne

CHAPTER 9 181
The University of Newcastle

CHAPTER 10 195
The University of Sydney

CHAPTER 11 213
Auckland University of Technology

CHAPTER 12 239
La Trobe University

CHAPTER 13 257
Charles Sturt University

OTHER MODELS AND OTHER PROGRAMS

CHAPTER 14 265
TAFE South Australia

CHAPTER 15 289
Curtin University

CHAPTER 16 291
The University of Queensland’s Academic Upgrade and Australian Defence Force Programs

EPILOGUE

CHAPTER 17 309
Looking to the Future: Directions and Innovations

CHAPTER 18 319
The Collaborative Initiative... The First of Many?
KEY CONTRIBUTORS

Susan Cartwright
BDS, DipClinDent(Perio)
Auckland University of Technology
Auckland, New Zealand

Deborah Cockrell
BDS, FDSRCPs, PhD
Associate Professor
Head, Oral Health
Deputy Head, Faculty of Health Sciences
University of Newcastle
Central Coast, New South Wales, Australia

Wendy Currie
DipDT, MHthScEd
Deputy Director, Bachelor of Oral Health
Faculty of Dentistry
University of Sydney
New South Wales, Australia

Mark Gussy
Cert DT, Dip DH, MEd, PhD
Associate Professor of Oral Health
School of Dentistry and Oral Health
La Trobe University
Bendigo, Victoria, Australia

Rosemary Kardos
BSc, PGDipTer, MN.ZIP
Faculty of Dentistry
University of Otago
Dunedin, New Zealand

Lynette McAllan
BDSc, MSc (Pediatric Dentistry)
Foundation Program Coordinator, Oral Health
School of Dentistry
The University of Queensland
Queensland, Australia

Colleen McCarthy
Grad Dip Child Dev, Dip App Sci (Dent Therapist)
Foundation Program Coordinator, Oral Health
School of Dentistry and Oral Health
La Trobe University
Bendigo, Victoria, Australia

Alison Meldrum
MDS
Program Convenor, Oral Health
Faculty of Dentistry
University of Otago
Dunedin, New Zealand

Jennifer Miller
Cert DT, Ass Dip Health Admin, BEd
Program Coordinator, Oral Health
School of Dentistry
The University of Adelaide
South Australia, Australia

Susan Moffat
Cert Dent Therp, BA, DPH
Faculty of Dentistry
University of Otago
Dunedin, New Zealand
Carol Nevin
AssocDipDT(WAIT)
Department of Dental Hygiene and Therapy
Curtin University of Technology
Western Australia, Australia

Joseph Raheb
BDSc, GradDipEducation,
PostGradDipPublicHealth, MPH
Department of Dental Hygiene and Therapy
Curtin University of Technology
Western Australia, Australia

Jane Rossi
DDH, BAdVocEd, DipMan
Program Coordinator, Oral Health (Dental Hygiene)
TAFE SA Centre for Dental Studies
Gilles Plains
South Australia, Australia

Julie Satur
DipApplSci(Dental Therapy),
GradDipHealthEducation, MHSc(Health Promotion), PhD
Associate Professor
Head of Oral Health Therapy
Melbourne Dental School
The University of Melbourne
Victoria, Australia

Gregory Seymour AM
BDS, MDSc, PhD, FRCPath, FROP(RCPA),
FRACDS(Perio), FICD, FPSNZ
Dean
Faculty of Dentistry
University of Otago
Dunedin, New Zealand

Leonie Short
RDT, DipClinHyp, BA, MHP, AFCHSE, MAICD
Program Convenor, Oral Health Therapy
School of Dentistry and Oral Health
Griffith University
Gold Coast, Queensland, Australia

Jenny Smyth
BDS, FDSRCS, FRACDS, FICD,
GradCertEd
School of Dentistry
The University of Queensland
Queensland, Australia

Helen Tane
Cert Dent Therp, PG Cert TT, MPH
Clinical Director
School of Dentistry and Health Sciences
Charles Sturt University
Wagga Wagga, New South Wales, Australia

Annetta Tsang
BDSc(Hons), GGClinDent, GCEd(HE),
MScMed (Pain Mgt), PhD
Program Coordinator, Oral Health
School of Dentistry
The University of Queensland
Queensland, Australia

Laurence Walsh
BDSc, PhD, DDSc, GCEd, FFOP(RPA),
FICD, FADI, FPFA
Head of School
School of Dentistry
The University of Queensland
Queensland, Australia
ACKNOWLEDGEMENTS

We would like to express our gratitude to our colleagues, staff and students for their personal reflections, suggestions, comments and supportive help. Their contributions substantially added to this monograph, rendering this piece of work distinctly more representative, more engaging, more interesting and more comprehensive.

Auckland University of Technology
Linda Buttle
Donna Kennedy

Charles Sturt University
Barbara Taylor
Curtin University of Technology
Russ Kendall

Griffith University
Hedley Coleman
Marc Tennant

La Trobe University
Virginia Dickson-Swift
Tim Goabler
Janice Rothacker
Jon Willis

TAFE South Australia
Sue Aldenhoven
John McInerney

University of Adelaide
Melissa Degenhardt
Josh Galpi
Kostas Kapellas
Natalie Olsson
Luke Rees
Lindsay Richardson
Accreditation Documentation Team

University of Melbourne
Hanny Calache
Mark Gussy
Pam Leong
Mike Morgan
Clive Wright

University of Newcastle
Jane Taylor
Janet Wallace
Linda Wallace

University of Otago
Renee Natras
Pimnadee Katharasri

University of Queensland
Jenny Bishop
Phil Campbell
Libby Davis
Felicity Dougherty
Claire Edwards
Jian James
Tricia O’Shanessy
Kathryn Plonka
John Rutar
Deborah Taggart

University of Sydney
Janice Barr
Joanne Coombes
Peter Dennison
Bronwyn Johnson
Iven Klineberg
Eric Navea
Alan Patterson
Clare Phelan
Katherine Price
Bernadette Plusch
Tanya Schinkewitsch
Eli Schwarz
Miriam Thomas
Bettine Webb
Hans Zoellner
## LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAUT</td>
<td>Australian Awards for University Teaching</td>
</tr>
<tr>
<td>ACT</td>
<td>Australia Capital Territory</td>
</tr>
<tr>
<td>Ac Up</td>
<td>Academic Upgrade</td>
</tr>
<tr>
<td>ADA</td>
<td>Australian Dental Association</td>
</tr>
<tr>
<td>ADC</td>
<td>Australia Dental Council</td>
</tr>
<tr>
<td>ADF</td>
<td>Australian Defence Force</td>
</tr>
<tr>
<td>ADH</td>
<td>Adelaide Dental Hospital</td>
</tr>
<tr>
<td>ADHA</td>
<td>American Dental Hygienists Association</td>
</tr>
<tr>
<td>ADOH</td>
<td>Advanced Diploma in Oral Health</td>
</tr>
<tr>
<td>ADTA</td>
<td>Australian Dental Therapist Association</td>
</tr>
<tr>
<td>AIHW</td>
<td>Australian Institute of Health and Welfare</td>
</tr>
<tr>
<td>ALTC</td>
<td>Australian Learning and Teaching Council</td>
</tr>
<tr>
<td>ANZ</td>
<td>Australia and New Zealand</td>
</tr>
<tr>
<td>AQF</td>
<td>Australian Qualifications Framework</td>
</tr>
<tr>
<td>ARLOPOH</td>
<td>Australian Research Centre for Population Oral Health</td>
</tr>
<tr>
<td>ARDS</td>
<td>Auckland Regional Dental Service</td>
</tr>
<tr>
<td>ASP</td>
<td>Academic Studies Program</td>
</tr>
<tr>
<td>AUT</td>
<td>Auckland University of Technology</td>
</tr>
<tr>
<td>BAppHSc</td>
<td>Bachelor of Applied Health Science</td>
</tr>
<tr>
<td>BDH</td>
<td>Brisbane Dental Hospital</td>
</tr>
<tr>
<td>BDS</td>
<td>Bachelor of Dental Surgery</td>
</tr>
<tr>
<td>BDSc</td>
<td>Bachelor of Dental Sciences</td>
</tr>
<tr>
<td>BHealSc</td>
<td>Bachelor of Health Sciences</td>
</tr>
<tr>
<td>BOH</td>
<td>Bachelor of Oral Health</td>
</tr>
<tr>
<td>BOHSc</td>
<td>Bachelor of Oral Health Science</td>
</tr>
<tr>
<td>BOralH</td>
<td>Bachelor of Oral Health</td>
</tr>
<tr>
<td>CAST</td>
<td>Committee for the Advancement of Learning and Teaching</td>
</tr>
<tr>
<td>CFC</td>
<td>Common First Year</td>
</tr>
<tr>
<td>CIC</td>
<td>Curriculum Integration Committee</td>
</tr>
<tr>
<td>CLPD</td>
<td>Centre for Learning and Professional Development</td>
</tr>
<tr>
<td>CMOH</td>
<td>Centre for Medicine and Oral Health</td>
</tr>
<tr>
<td>COAG</td>
<td>Council of Australian Governments</td>
</tr>
<tr>
<td>COHS</td>
<td>Centre for Oral Health Strategy</td>
</tr>
<tr>
<td>CORAL</td>
<td>Centre of Orofacial Research and Learning</td>
</tr>
<tr>
<td>CPP</td>
<td>Career Progression Program</td>
</tr>
<tr>
<td>CRA</td>
<td>Criterion Referenced Assessment</td>
</tr>
<tr>
<td>CRC</td>
<td>Cooperative Research Centre</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>CSP</td>
<td>Commonwealth Supported Places</td>
</tr>
<tr>
<td>CSU</td>
<td>Charles Sturt University</td>
</tr>
<tr>
<td>DAPP</td>
<td>Dental Assessment and Prioritisation Program</td>
</tr>
<tr>
<td>DBQ</td>
<td>Dental Board of Queensland</td>
</tr>
<tr>
<td>DCNZ</td>
<td>Dental Council of New Zealand</td>
</tr>
<tr>
<td>DDSc</td>
<td>Doctorate in Dental Science</td>
</tr>
<tr>
<td>DDS</td>
<td>Doctorate in Dental Surgery</td>
</tr>
<tr>
<td>DH</td>
<td>Dental Hygiene</td>
</tr>
<tr>
<td>DHAA</td>
<td>Dental Hygienists Association of Australia</td>
</tr>
<tr>
<td>DHB</td>
<td>District Health Board</td>
</tr>
<tr>
<td>DH&amp;CS</td>
<td>Department of Health and Community Services Victoria</td>
</tr>
<tr>
<td>DHP</td>
<td>Dental Hygiene Practice</td>
</tr>
<tr>
<td>DHAA</td>
<td>Dental Hygienists Association of Australia</td>
</tr>
<tr>
<td>DHSV</td>
<td>Dental Health Services Victoria</td>
</tr>
<tr>
<td>DipDentTher</td>
<td>Diploma in Dental Therapy</td>
</tr>
<tr>
<td>DLP</td>
<td>Dental Learning Packages</td>
</tr>
<tr>
<td>DOH</td>
<td>School of Dentistry and Oral Health</td>
</tr>
<tr>
<td>DOHT</td>
<td>Dental and Oral Health Therapists</td>
</tr>
<tr>
<td>DOHTAQ</td>
<td>Dental and Oral Health Therapists Association of Queensland</td>
</tr>
<tr>
<td>DPERU</td>
<td>Dental Practice and Education Research Unit</td>
</tr>
<tr>
<td>DSc</td>
<td>Dental Science</td>
</tr>
<tr>
<td>DSRU</td>
<td>Dental Statistics and Research Unit</td>
</tr>
<tr>
<td>DTHWA</td>
<td>Dental Therapy and Hygiene Association of Western Australia</td>
</tr>
<tr>
<td>DTP</td>
<td>Dental Therapy Practice</td>
</tr>
<tr>
<td>EP</td>
<td>Evolving Professionalism/Professional</td>
</tr>
<tr>
<td>FDI</td>
<td>Federation Dentaire Internationale</td>
</tr>
<tr>
<td>FLAS</td>
<td>Flexible Learning and Access Service</td>
</tr>
<tr>
<td>FTE</td>
<td>Full Time Equivalent</td>
</tr>
<tr>
<td>FVA</td>
<td>First Year Advisor</td>
</tr>
<tr>
<td>GDP</td>
<td>General Dental Practice</td>
</tr>
<tr>
<td>GIHE</td>
<td>Griffith Institute for Higher Education</td>
</tr>
<tr>
<td>GPA</td>
<td>Grade Point Average</td>
</tr>
<tr>
<td>GU</td>
<td>Griffith University</td>
</tr>
<tr>
<td>GUDSA</td>
<td>Griffith University Dental Students Association</td>
</tr>
<tr>
<td>GVH</td>
<td>Goulburn Valley Health</td>
</tr>
<tr>
<td>HECS</td>
<td>Higher Education Contributions Scheme</td>
</tr>
<tr>
<td>HEDC</td>
<td>Higher Education Development Centre</td>
</tr>
<tr>
<td>HPCA Act</td>
<td>Health Practitioners Competence Assurance Act</td>
</tr>
<tr>
<td>IBL</td>
<td>Inquiry-Based Learning</td>
</tr>
<tr>
<td>ICTE</td>
<td>Institute of Continuing and TESOL Education</td>
</tr>
<tr>
<td>IFDH</td>
<td>International Federation of Dental Hygienists</td>
</tr>
<tr>
<td>IPE</td>
<td>Interprofessional Education</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>ITMOSS</td>
<td>Integrated Team Model for Optimising Student Success</td>
</tr>
<tr>
<td>MCQ</td>
<td>Multiple Choice Questions</td>
</tr>
<tr>
<td>MEQ</td>
<td>Modified Essay Questions</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
</tr>
<tr>
<td>MRI</td>
<td>Medical Research Institute</td>
</tr>
<tr>
<td>NHMRC</td>
<td>National Health and Medical Research Council</td>
</tr>
<tr>
<td>NSW</td>
<td>New South Wales</td>
</tr>
<tr>
<td>NT</td>
<td>Northern Territory</td>
</tr>
<tr>
<td>NZ</td>
<td>New Zealand</td>
</tr>
<tr>
<td>NZDA</td>
<td>New Zealand Dental Association</td>
</tr>
<tr>
<td>NZDHA</td>
<td>New Zealand Dental Hygienists Association</td>
</tr>
<tr>
<td>NZDTA</td>
<td>New Zealand Dental Therapists Association</td>
</tr>
<tr>
<td>NZDJ</td>
<td>New Zealand Dental Journal</td>
</tr>
<tr>
<td>OH</td>
<td>Oral Health</td>
</tr>
<tr>
<td>OHC</td>
<td>Oral Health Centre</td>
</tr>
<tr>
<td>OHEU</td>
<td>Oral Health Education Unit</td>
</tr>
<tr>
<td>OHMT</td>
<td>Oral Health Therapy</td>
</tr>
<tr>
<td>OP</td>
<td>Overall Position</td>
</tr>
<tr>
<td>OSCA</td>
<td>Objective Structured Clinical Assessment</td>
</tr>
<tr>
<td>OSCE</td>
<td>Objectively Structured Clinical Examination</td>
</tr>
<tr>
<td>PBL</td>
<td>Problem Based Learning</td>
</tr>
<tr>
<td>PCYC</td>
<td>Police Citizen Youth Club</td>
</tr>
<tr>
<td>PDR</td>
<td>Planning, Development and Review</td>
</tr>
<tr>
<td>PGDipDentTher</td>
<td>Postgraduate Diploma in Dental Therapy</td>
</tr>
<tr>
<td>PIFS</td>
<td>Pacific Island Family Study</td>
</tr>
<tr>
<td>PG</td>
<td>Postgraduate</td>
</tr>
<tr>
<td>QH</td>
<td>Queensland Health</td>
</tr>
<tr>
<td>QLD</td>
<td>Queensland</td>
</tr>
<tr>
<td>QIAAC</td>
<td>Queensland Tertiary Admissions Centre</td>
</tr>
<tr>
<td>QUT</td>
<td>Queensland University of Technology</td>
</tr>
<tr>
<td>RELT</td>
<td>Resources for Education, Learning and Teaching</td>
</tr>
<tr>
<td>SA</td>
<td>South Australia</td>
</tr>
<tr>
<td>SADS</td>
<td>South Australian Dental Service</td>
</tr>
<tr>
<td>SADTA</td>
<td>South Australian Dental Therapists Association</td>
</tr>
<tr>
<td>SADTJ</td>
<td>South Australian Dental Therapists Association</td>
</tr>
<tr>
<td>SAP</td>
<td>School Assessment Program</td>
</tr>
<tr>
<td>SAQT</td>
<td>Short Answer Question Tests</td>
</tr>
<tr>
<td>SDS</td>
<td>School Dental Service/s</td>
</tr>
<tr>
<td>SOKS</td>
<td>Save Our Kids Smiles program</td>
</tr>
<tr>
<td>SoTL</td>
<td>Scholarship of Teaching and Learning</td>
</tr>
<tr>
<td>SPICES</td>
<td>Student Problem Integrated community Elective Systematic model</td>
</tr>
<tr>
<td>SSP</td>
<td>Special Studies Program</td>
</tr>
<tr>
<td>TAFE</td>
<td>Technical and Adult Further Education</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>TAS</td>
<td>Tasmania</td>
</tr>
<tr>
<td>TEDI</td>
<td>Teaching and Education Development Institution</td>
</tr>
<tr>
<td>TF</td>
<td>Teaching Focused</td>
</tr>
<tr>
<td>UAI</td>
<td>University Admissions Index</td>
</tr>
<tr>
<td>UMAT</td>
<td>Undergraduate Medical and Health Sciences Admission Test</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>UG</td>
<td>Undergraduate</td>
</tr>
<tr>
<td>UQ</td>
<td>The University of Queensland</td>
</tr>
<tr>
<td>US</td>
<td>United States of America</td>
</tr>
<tr>
<td>VIC</td>
<td>Victoria</td>
</tr>
<tr>
<td>WA</td>
<td>Western Australia</td>
</tr>
<tr>
<td>WDHB</td>
<td>Watemata District Health Board</td>
</tr>
</tbody>
</table>
FOREWORD

Colgate has great pleasure in supporting this publication which details the evolution of Oral Health professionals across Australia and New Zealand. Colgate has a long and proud history of supporting oral health professionals throughout their careers, with a particular emphasis on education. The contributors should be congratulated for putting together a timely, readable and entertaining record of the development of Oral Health Therapy in Australia and New Zealand.

Dr Barbara Shearer MDS PhD
Scientific Affairs Manager, Colgate Oral Care

© The Authors xv
PREFACE

It is my great pleasure to introduce this important publication which tells the story of the development of oral health professionals in the ANZ region, with all its vision, victories, politics, personalities, strategies, struggles, and successes.

Other dental educators, public health workforce planners and colleagues from across the globe can now share in this journey, reflect on the lessons learned, and apply these to their situation. The advent of the oral health professional has changed forever the shape of the dental team in the ANZ region, and similar approaches are now being adopted in other countries, as they grapple with the demands of appropriate health care and a world where greater emphasis is being placed on the maintenance of health across the ages.

It is clear that the emergence of oral health professionals in recent decades has been one of the greatest advances in dentistry. It would be difficult to overstate its positive impact on clinical patient care, particularly because of the strong joint emphases on disease prevention and health promotion which have been the hallmark of all the programs across the ANZ region.

Each of the individuals who have contributed to this book have devoted significant parts of their life to educating oral health professionals, and passing on the very best knowledge, skills and clinical techniques to their students. I salute their passion and dedication to this important task. The dental profession at whole owes them an enormous debt of gratitude for their selfless efforts. This book is but a part of their legacy to the wider health profession. Their students and graduates will continue to shape the profession, and pass on the vision to the next generation.

Finally, it is a particular pleasure for me to also acknowledge and thank Colgate Oral Care for their support of this publication. Colgate have been a major supporter of the education of oral health professionals across the ANZ region, becoming involved in the various programs through workshops of various types as well as supporting key academic positions and a powerful agenda for research into oral health issues of importance. Their partnership with dental education has added significantly to the quality of the graduates.

Professor Laurence J Walsh
Head, School of Dentistry, The University of Queensland
Since the earliest notions of state responsibility for welfare, governments have searched for ways to deliver health services in affordable and equitable ways. The mouth however, has been considered a separate entity from the rest of the body in considerations of health status and largely excluded from mainstream funding mechanisms (Willis, 1989; Gardner, 1995; Hancock, 1999; NACOH, 2004). Dental care in Australia and New Zealand is delivered via market based systems with very limited safety net provisions for disadvantaged people and a stronger, but inconsistent commitment to child services.

At the beginning of the twentieth century in New Zealand and elsewhere in the western world, concerns about national efficiency and racial fitness meant that social policy became increasingly centred on the health and welfare of children. As McDonald (1978) stated, "The adult contribution of citizens, the society’s social capital, related directly to the degree of care given in childhood."

Rearing and nurturing healthy children would produce healthy adults and ensure continued success for the nations. In addition to the enacting of legislation to protect infants and children, a range of new health initiatives developed that were directed specifically at children. This included the New Zealand School Dental Service in 1921 (Tennant, 1994; Dalley, 1998). It is worth noting that after the state dental hospitals, the School Dental Services have been the longest running public dental services in Australia and New Zealand.

The dental profession shared these concerns about children’s health. Dentists firmly believed that poor oral health contributed to poor general health. As early as 1905, F.W. Thompson,
a New Zealand dentist, presented a paper entitled, “The teeth of our children” at the first conference of the then newly-formed New Zealand Dental Association (NZDA). Thompson had dentally examined children in Christchurch, none of whom had a sound set of teeth. He estimated that ninety-eight percent of New Zealand children did not receive the care they needed for their teeth. Thompson argued for state action on the grounds that sound teeth were the basis of good health (Thompson, 1906). Thompson’s paper was well-received by dentists and was printed and distributed as a parliamentary paper (NZ Department of Health Annual Report, 1905).

NZDA members continued to examine children’s teeth largely at their own expense, in order to advise parents of treatment requirements. They also hoped to gain enough evidence to convince the Government that some form of state intervention was needed to establish dental care for children (Didsbury, 1907). In 1912, the newly-established School Medical Service confirmed that the oral health status of New Zealand children was poor, with the NZDA estimating that 90% of children examined required dental treatment and that only 25% would be able to afford that treatment (NZDJ, 1912).

The appalling state of the nation’s teeth became increasingly obvious during the First World War. A high percentage of recruits were rejected for service and many others required extensive treatment to be made dentally fit (NZDJ, 1915; Brooking, 1980). The state of the troops’ teeth led to the formation of New Zealand’s Dental Corps. The success of the Corps meant that politicians became more sympathetic to the eventual establishment of a state dental service for children (Brooking, 1980).

However, the War also meant that there was little money available for dental treatment in children. Despite this, the need for state funding for children’s dental treatment was still mentioned frequently at NZDA meetings and conferences, with various schemes being suggested to combat the problem. For, as the President of the NZDA, A. M. Carter, rather melodramatically stated in his presidential address of 1916,

“…the war of the nations will end, and in our hearts we know Victory will be ours, but in the dental disease so rampant in our schools we have a more insidious foe, and one that has been far too long underestimated, and that is steadily sapping the vitality and lowering the stamina of our national life” (Carter, 1916).

In Australia, many states established rudimentary schemes in
the years after the First World War arising out of concerns about the poor state of child oral health. This fed discussions at a federal level during the 1940s about a nationalised scheme to be incorporated into the proposed national health scheme of the Chifley government (Robertson, 1989; Gardner, 1995). This proposal was overturned through a change of government. However concern persisted about the state of oral health in the community. Poor resourcing, lucrative private practice and the small pool of dentists available, particularly during the Second World War, meant that these School Dental Services were never really universally effective (Robertson, 1989; Sendziuck, 2007).

As a result, a committee of the National Health and Medical Research Council (NHMRC) was established to make recommendations to the Commonwealth Government in relation to dealing with the problem of poor child oral health (NHMRC, 1965). These recommendations resulted in the expansion of existing state funded School Dental Services into a federally funded program. The Whitlam government in 1972, established the scheme based on the model operating in New Zealand, providing special purpose grants to establish training schools for dental therapists and school dental service infrastructure. Federal funding continued until 1981-1982, when the Fraser government absorbed this funding back into general revenue, contracting federal government involvement. The responsibility for developing public dental services again reverted to the states although with continued commitment to school dental services and with adult services being provided through the dental hospitals and some community health services (Lewis, 2000; NACOH, 2004).

THE DEVELOPMENT OF DENTAL THERAPY

The origin of dental therapy has been variously attributed to both New Zealand and Great Britain in the early years of the 20th century. The following section describes the early years of dental therapy’s development in New Zealand and its progression to Australia.

New Zealand

In 1913, the then President of the New Zealand Dental Association, Norman K Cox proposed a system of school dental clinics operated by the state and staffed by dentists and “oral hygienists” to address the dental needs of children between the ages of 6 and 14 years. Cox (1913) suggested that these state dentists or “oral hygienists”, be trained in a short course at the
Dental School. There was opposition to this proposal from dentists within the NZDA and from H. P. Pickerill, Dean of the Dental School, who believed training school dentists at a lower standard to treat children was not desirable (NZDA, 1913a). However, a committee was formed by the NZDA to look into the proposed scheme and a NZDA deputation eventually met with the Ministers of Public Health and Education to discuss the proposal. While the ministers agreed that it was not enough merely to inspect children’s teeth (as the School Medical Service was doing), they believed such a scheme would need careful consideration due to the costs involved (NZDA, 1913b). Unfortunately, there was little progress made on implementing the proposal before war broke out.

In 1917, Richmond Dunn, a dentist from Wanganui, published a paper which emphasised the need for dental care for children and the effects of poor oral health on their general health. He was particularly concerned that the proposed school dental clinics would only provide treatment for dental caries. Dunn stressed the need for preventive care for children, including pre-schoolers. He believed that New Zealand’s “Plunket Nurses” were the only people doing “real service for the race”, as they were able to give advice and service that improved the health of children and produced “strong and useful men and women for the future” (Dunn, 1917). Dunn proposed the preparation of a Bill that would create a new profession of “dental nurse”. The dental nurse would advise parents of their child’s treatment needs, give oral health advice, examine teeth and carry out simple operative procedures. Having dental nurses would solve the problem of there being insufficient dentists in New Zealand to staff a school service and dentists would be relieved of the “child work” that many of them found so “trying to the nerves” (Dunn, 1917).

Norman Cox, in turn, proposed that New Zealand be divided into areas staffed by dental officers and dental nurses, under a Director of Dental Services. The NZDA once again established a committee to investigate further possibilities and meet with Government ministers (Cox, 1917). The NZDA also gained the support of many influential groups, including the Plunket society, British Medical Association, New Zealand Educational Institute, the University of Otago Council and the media. In

---

1 In 1907, the “Society for the Promotion of the Health of Women and Children” was found. The Society set up clinics and employed nurses to monitor infant health and provide advice to mothers. These nurses became known as ‘Plunket’ nurses, named after the first patroness of the Society, Lady Victoria Plunket. Eventually the Society became known as the Royal New Zealand Plunket Society (Bryder, 2003).
1918, a powerful deputation was favourably received and in 1919, the first four school dentists were appointed to the four main centres of New Zealand to form the basis of the School Dental Service (NZDA, 1918; Brooking, 1980).

There was much controversy surrounding the scheme, including opposition from within the NZDA. However, in September 1920, at a special meeting of the NZDA, delegates from the branches voted 16 to 7 to support the adoption of the School Dental Nurse Scheme (NZDA, 1920; Brooking, 1980). School dental nurses were to provide diagnostic and restorative services to children “...in a rigidly structured set of methods and procedures which spared her the anxiety of making choices...” (Leslie 1971).

The controversy surrounding the establishment of the scheme continued for some time. Leslie (1971) reports that organised opposition was considerable on the grounds that the employment of dental nurses posed:

“...a menace to the public, (a) menace to the (dental) profession and an injustice to those seeking to enter the ranks of the (dental) profession by recognised avenues...”

Colonel (later Sir) Thomas Hunter was appointed Director of the newly-established Division of Dental Hygiene under the Department of Health and was largely credited with the successful establishment of New Zealand’s School Dental Service (Brooking, 1980). Under Hunter’s direction and despite opposition, the New Zealand School Dental Nurse was born, trained initially in a school in Wellington run by the Health Department with the first cohort graduating in 1923. After the Second World War, training schools were also established in Auckland (1952) and Christchurch (1956), providing by 1990, a workforce of around 900, and a 95% participation rate by New Zealand’s school children (Hannah, 1998; Tane, 2002). School dental nurses, (known as dental therapists from 1991) in New Zealand worked in mobile units and clinics attached to schools, providing diagnostic, preventive and treatment services and referring treatment beyond their skills to local dentists. Supervision was provided at a ratio of around 1 dentist to 50 school dental nurses with the purpose of ensuring therapists did not work beyond their skills and updated their practices (Leslie, 1971).

In 1980, as a result of New Zealand’s declining child population and reduced treatment needs, a decision was made to close the Auckland and Christchurch training schools. A review of dental nurse training established that an average of 25 gradu-
Oral Health Therapy Programs in Australia and New Zealand

ates per annum would be sufficient to staff the School Dental Service. The Wellington School was retained, as it was centrally located, had the largest patient group and because there were no dental clinics in central Wellington (NZ SDS Gazette, 1980). In 1991, training of dental nurses passed from the Department of Health to the Department of Education, with the training being conducted by Wellington Polytechnic from 1991 to 1999 (Molloy, 1991) until a further review of dental therapy education occurred which recommended auspice by a University. The first students graduated from the University of Otago in 2000 with a Diploma in Dental Therapy. Eventually, both the University of Otago and the Auckland University of Technology established degree programs for dental therapy, with both universities finally moving to dual-degree bachelor programs i.e. oral health therapy (dental therapy and dental hygiene) – AUT in 2006 and Otago in 2007.

The Spread of Dental Therapy

New Zealand’s model of service delivery demonstrated considerable success and was the target of inquiry by many other countries around the world. In Great Britain, during the First World War, a small number of “dental dressers” were used to carry out examinations and treatment for children in parts of England. Their role however, was eliminated by the Dentists Act of 1921 because of hostility to the role on the part of the dentists. They were later re-introduced, on the strength of the New Zealand scheme, as dental nurses when the high dental needs of children were ‘rediscovered’ in the 1960s, carrying out similar services but under the prescription of a dentist who carried out the examination and care plan (Larkin, 1980: Nuffield Foundation, 1993). School Dental Services staffed primarily with dental therapists were also established in other countries including Canada, South Africa, the Netherlands (temporarily), Fiji, Hong Kong, Malaysia and the Pacific Islands. In 2000, 28 countries around the world utilised dental therapists (FDI 2001) and in 2009, in 53 countries world-wide (McKinnon et al., 2007; Nash et al., 2008). In some of these countries, including New Zealand and after 1988, dental therapists also provided their services to adults.

Between 2003 and 2005, Alaska made a radical move for the United States by sending students to New Zealand’s University of Otago to undertake the Diploma in Dental Therapy program. Eleven students graduated from the course and returned to provide services to rural and remote populations in Alaska. This...
move was vigorously but successfully, contested by the American Dental Association through the courts. Alaska now has its own Dental Health Aide Therapist training program (DENTEX) which is a collaboration between the Alaska Native Tribal Health Consortium and the University of Washington School of Medicine Physician Assistant Training Program, MEDEX Northwest (DENTEX, 2010). Subsequent to this, several other US states are now examining the potential for dental therapists to alleviate the unmet needs for child oral health services, with Minnesota becoming the second state to legalise practice in 2009 (MDH & MBD, 2009).

**Australia**

As early as 1919, a Melbourne dentist advocated a state dental service which would primarily have educational and other preventive functions. He drew on the concept of the British system of “dental dressers” for a new Victorian oral hygienist who would provide much of the care under the supervision of a dentist (Robertson, 1989). In 1923, in order to make recommendations to the Victorian Cabinet for the extension of dental treatment for children, the Acting Director of Education for the State of Victoria wrote to the Principal Dental Officer for New Zealand’s School Dental Service expressing interest in the scheme to train young women as dental assistants for work in schools. Clearly, concern for child oral health was significant, but the threat of the development of another layer of practitioner, when the dentists were “… fending off the demands of record-ed men, twilights and mechanics…” was too great for the dentists (Robertson, 1989). Likewise, in NSW during the 1930s and 1940s, similar proposals were made for the initiation of oral hygienist services for children and similar political activity prevented their initiation (Franki, 1997).

The need to improve the dental health of children remained of great concern and a ‘fact-finding mission’ was established to look into the New Zealand Scheme in 1946 (Robertson, 1989; Gardner, 1992). But it was not until the 1950s and 60s that the NHMRC’s Dental Health Committee made recommendation that any instrumentality responsible for the dental care of Australian children “… should now give consideration to the utilisation of dental auxiliary personnel in the form of the school dental nurse…” (NHMRC, 1965). The NHMRC noted the success of such schemes in other countries and in particular, over 90% participation rate and social acceptance attached to the New Zealand Scheme and also, the reluctance of the dental profes-
tion to support the concept of operative dental auxiliaries in Australia. It made recommendations that demanded systematic and regulated non-university training\(^2\), the complementary (rather than substitute) nature of dental auxiliary practice, the need to define the range of skills they could practice and the need for direction and control of their services by registered dentists. It stressed the need for administration by a dentist of such services and for each state to train sufficient auxiliaries for their own needs to engender allegiance in its staff and to reduce the demands for reciprocity and the risks of competitive salaries and other ‘undesirable developments’. Courses of training should be as short as possible in order to maintain the cost-effectiveness of the auxiliary, while ensuring competence. It also suggested that such school dental nurses should be female and have their employment restricted to the government service (NHMRC, 1965).

As a consequence, in 1964 NSW passed legislation amending their Dentists Act but could not generate sufficient support for funding to establish a training program (Franki, 1997). Tasmania and South Australia thus established the first dental therapy schools to train dental therapists for their state’s dental programs in 1966 and 1967 respectively (Dunning, 1972; Gussy, 2001). These courses were established in purpose-specific Schools of Dental Therapy operated in most cases by state health departments. When the Whitlam government offered conditional block grants to expand the School Dental Scheme in 1973 to encourage the development of auxiliary-based school dental programs, all of the other states took up the extra funding, with New South Wales establishing schools at Westmead and Shoalhaven in 1974, Queensland (at Yeronga) also in 1974 and Victoria (Melbourne) in 1976 (Gussy, 2001; H. Field, personal communication, 2009). Western Australia, which began training dental therapists in 1971, was unique in using the tertiary sector for training. Dental therapists trained in a world first program at the Western Australian Institute of Technology (later Curtin University) could work in both the private sector under prescription and, like the other states, autonomously in the School Dental Services. Their School Dental Service however continued to operate like the other states, with dental therapists providing examinations (radiography, diagnosis and treatment planning) and dental treatment including fillings, extraction of deciduous teeth, local anaesthesia, preventive services and

---

\(^2\) The NHMRC (1965) noted several times in its report that auxiliary personnel should be trained in an appropriate government instrumentality- ‘...that this is not a matter for the University Dental schools’. 

© The Authors
health promotion to school aged children under the off-site general supervision of a dentist.

Prior to the establishment of the Australian Dental Therapy Schools, many young women were also sent to New Zealand to both the Christchurch and Wellington schools to undertake their training as school dental nurses, returning to complete a period of bonded service as dental therapists in their home state School Dental Services.

The first dental therapy association was formed in 1935, and was known as the New Zealand Dental Nurses Institute. In 1995, at its Annual General Meeting, members voted for a new structure and a name change to that of the New Zealand Dental Therapists' Association (NZDTA, 2010).

Australia’s first dental therapy associations were formed in Western Australia and New South Wales in 1973 (DTHA WA, 2007; Currie, 2010) and in 1987, the Australian Dental Therapists Association was formed (ADTA, 2001). In 2003, the association changed its name and focus to reflect the changes in education occurring around the country to form the Australian Dental and Oral Health Therapists Association; this was also reflected in the state associations although the Dental Therapy and Hygiene Association of Western Australian had set this new direction some ten years earlier in 1996.

Qualification for practice as a dental hygienist or therapist at that time required a 1500-2100 hour, tertiary course of education over two years requiring university level entrance requirements generally with pre-requisite studies in English and Biology. By 1979 the Australian schools were graduating a combined total of around 280, all female students, per year (Commonwealth Department of Health, 1979). The closure of the Westmead College of Dental Therapy in NSW in 2004 saw the end of an era of dental therapy training by state governments in Australia and New Zealand, with the move to a university educated dental therapist, with, in most cases a bachelor-level degree. This is in keeping with international developments in dental hygiene education where many countries now offer three and four year programs awarding bachelor degrees (Hovius & Blitz, 2001).

THE DEVELOPMENT OF DENTAL HYGIENE

In many cases, the dental hygienist role developed as extensions of dental nurses’ roles. Dental nurses had developed in the late 19th century as an adjunct to a dentist in the more professional surgical settings. Their role had been to assist at the
Oral Health Therapy Programs in Australia and New Zealand

chairside, clean instruments and perform some post-operative and cleaning services, under the direction of a dentist in a similar fashion to the medical nursing role. Although dental hygiene developed in a number of places worldwide, most notably Scandinavia, their history in the US is documented best.

In 1910 in Ohio, the College of Dental Surgery began offering a course for dental nurses, which was discontinued because of opposition from the dentists of Ohio. The first dental hygienists were formally trained in 1914 when Dr Alfred Fones developed the concept of a preventive service using women trained in his carriage house in Connecticut to deliver classroom talks, education for parents and prophylactic treatment for children in public schools. Over the next ten years, courses of training were established in several states in the US and by 1931, sixteen education programs for hygienists, of one to two years duration were in existence. In 1923, the first meeting of the American Dental Hygienists Association was held which led to the drafting of professional ethics in 1926 and a journal in 1927. By 1954, dental hygiene licensure was available in all 50 states and by 2002 in at least 23 countries worldwide, including Australia (Darby & Walsh, 1995; IFDH, 2002).

In the US until 2007, legislation allows for three types of dental auxiliaries: dental assistants or nurses, dental hygienists and expanded function dental auxiliaries or hygienists. Each state defines the roles and regulation of dental auxiliaries in different ways but in most states they operate under the on-site supervision of a dentist. In 1968 in the US, only nine states allowed for expanded functions (beyond preventive, educative and prophylactic treatments) by dental auxiliaries, but by 1973, 44 states did so (Liang & Ogur, 1987). These functions include subgingival scaling and root debridement, the administration of local anaesthesia and in some states nitrous oxide analgesia, fissure sealants and tooth bleaching.

In Washington state, Colorado and California in the US, some provinces of Canada, the Netherlands, Denmark, Norway, Sweden and Switzerland dental hygienists are licensed to practice independently of a dentist in their own practices and in non-dental practice settings such as hospitals and residential care facilities (ADHA, 1999; Johnson, 2001). Washington state and some Canadian dental hygienists also restore cavities which have been prepared by a dentist but this procedure may not be carried out in their off-site practices (WSL, 1998; Clovis, 2000). Direct access to hygienists’ services is advocated by the American Dental Hygienists Association as a means for increas-
ing access to care and increasing dental hygienist career options and the Association has supported research into the development of such an option (Kushman et al., 1996; ADHA, 2009).

**Australia and New Zealand**

Debate about the development of the dental hygienist role in Australia occurred several times between the 1920s and 1960s including a proposal by the federal Labour Government in 1943 to introduce “oral hygienists” to deal with the problem of unmet dental need particularly among children. These hygienists were described in terms that would later more closely fit the title of dental therapist rather than the US model (Robertson, 1989; Gardner, 1992; Franki, 1997). South Australia was the first state to introduce dental hygienists in 1971, when enabling legislation was passed by the South Australian state government following lobbying by a group of dentists who had worked with dental hygienists while undertaking postgraduate studies in the United States of America and the United Kingdom (DHAA(SA), 2005). The first dental hygienists to work in South Australia were trained overseas, mainly from the UK, US and Canada, some of whom were previously dental assistants from Adelaide who had undertaken dental hygiene training in the UK before returning to work in Adelaide. In 1974, the first dental hygiene training program was established in an initiative between the Department of Further Education, the University of Adelaide, Department of Dentistry and the Adelaide Dental Hospital, taking its first group of students into a 12 month course in May 1975. The first dental hygienists association was formed and incorporated in South Australia in 1977 and in 1985, the National Dental Hygienists Association of Australia was formed, becoming a member of the International Dental Hygienists’ Federation in June 1986 (DHAA(SA), 2005).

Like South Australia, the first dental hygienists to work in most states were trained internationally and lobbied local Dental Boards and state governments for the right to practice. Dental hygiene is a relatively new profession in Australia, first legislated for in South Australia in 1971 and Western Australia in 1973. Practice was more recently legalised in ACT and Queensland in 1987, Victoria in 1989, NSW in 1990 and the Northern Territory in 1996 (DHAA, 2002). Dental hygienists were not permitted to work in Tasmania until 2001 (DHAA, 2002).
The employment of dental hygienists in New Zealand is also relatively new having only been formally recognised in legislation in 1988. Dental hygienists in New Zealand were first trained for the Armed Services in 1974 and have since emerged from a range of training models and backgrounds including preceptorship, dental therapy to hygiene transition programs, immigration by graduates of international dental hygiene programs and today, established tertiary educational programs. The first training program for general practice began at Otago Polytechnics in 1994, and in 2001 dental hygiene education transferred to the University of Otago (Satur, 2003; Coates et al., 2009). At first a Diploma program was offered; this was then followed by the implementation of a degree program in 2004. Since 2006 (AUT) and 2007 (Otago) dental hygiene education is offered as part of a dual qualification in dental therapy and dental hygiene. The New Zealand Dental Hygienists’ Association was formed in 1993 and has branches throughout New Zealand (NZDHA, 2010).

In both Australia and New Zealand, dental hygienists were initially licensed by or practised under exemption from Dentists Acts and worked under the on-site direction or supervision of a dentist. South Australia was the first to allow dental hygienists to provide prescribed care in nursing homes where a nurse or medical practitioner is available without the on-site presence of a dentist (SADR, 1988). This practice is now more common. In particular, there is now wider acceptance of hygienists in diagnosing and preparing dental hygiene care plans in Victoria, New South Wales and South Australia.
REFERENCES


Currie, W. (2010). The struggle to Begin; Dental Therapy and Dental Hygiene in NSW. NSW: DOHTA.


Oral Health Therapy Programs in Australia and New Zealand


© The Authors


National Health and Medical Research Council (NHMRC). (1965). Dental Auxiliary Personnel. Reprinted from the Report of the 60th Session of the National Health and Medical Research Council. CGP, Canberra: CGP.


New Zealand Dental Hygienists Association (NZDHA). (2001). *Interview with the President of the New Zealand DHA; Legislation and the roles and education of New Zealand dental hygienists*.


Oral Health Therapy Programs in Australia and New Zealand


Like many other types of health care, dentistry has several occupational streams that have developed in response to changing technologies and demands for care. In Australia and New Zealand, dental therapists, dental hygienists and dental prosthetists deliver care in combination with dentists and dental specialists in a team environment. Dental technicians are responsible for the manufacture of dental prostheses, e.g., dentures, mouthguards, crowns, bridges and orthodontic appliances, under prescription of a dentist. Dental prosthetists are dental technicians with advanced training who may prescribe, manufacture and insert dentures and mouthguards independently. Dental therapists and hygienists provide primary preventive and clinical care of dental caries and periodontal diseases respectively, as well as oral health promotion.

Advanced dental nurses and expanded function dental auxiliaries were developed to complement the work of dentists by providing, under delegation, various clinical tasks. Most common were oral hygiene instructions and other preventive advice, radiography, cleaning and polishing of teeth (dental prophylaxis). These functions were soon extended into areas such as periodontology, orthodontics or surgical assistance and restorations depending on the practices in which they worked. Today their most common characterisations are as dental hygienists and dental therapists, with both occupations having existed for around 90 years.

**DENTAL THERAPISTS**

Dental therapists operate in a primary care role, carrying out routine dental care and health promotion, referring patients to a dentist for services which are beyond their scope of practice. Up until July 2000, dental therapists in most states of Australia and in New Zealand were limited to public sector employment with School Dental Services providing care to children and...
adolescents\textsuperscript{3} in collaborative and referral relationships with
dentists and with the chairside assistance of a dental nurse. Their skills include examination, diagnosis and treatment planning, radiography/radiology, preparation of cavities and their restoration with amalgam and plastic filling materials, pulp therapies and extractions of deciduous teeth, clinical preventive services such as prophylaxis and scaling, fissure sealants and fluoride therapies, diet counselling and oral health education and promotion. Scope of practice differs slightly between countries and jurisdictions but may also include fabrication of mouthguards, orthodontic procedures on the advice of a dentist or orthodontist, extraoral radiography, placement of stainless steel crowns, incisal edge restorations, pulp therapies in permanent teeth and permanent tooth extractions. Since 2000, employment limits on dental therapists practice have been progressively relaxed in Australia and New Zealand (Satur, 2003; Nash et al., 2008).

In practice, a dentist will be available by telephone for consultation and, in Australia, generally attend a dental therapist’s clinic weekly or fortnightly for half a day to attend to referred patients mostly comprising orthodontic referrals, complex restorations, endodontics and permanent extractions. In New Zealand, patients with additional needs have been referred to private dentists, hospital departments or the Dental School. In both countries there is now a trend toward providing School Dental Services from larger community clinics in a more family-focused approach. The overwhelming majority of dental care for children in New Zealand and Australia since the 1920s and 1970s respectively has been provided by dental therapists (Coates et al., 2009; Doolland, 1992).

In 2005, an Australian national data collection found that there were 1760 registered dental therapists in Australia of which 1521 or 86.4\% were practising. Their average age was 40.7 years, only 23\% were male and they worked on average, 25 hours per week, with 56\% working part-time. This study also showed that in 2005, around 79\% of therapists worked in the School Dental Service and 21\% in private practice employment.

The ages of people treated by dental therapists have traditionally been limited to 0-18 years although in Victoria the upper limit is now accepted as 25 years (and without limits in orthodontic practices) and in Western Australia dental therapists in private settings have provided care for all ages under prescription from a dentist for many years. Today in New Zealand, Victoria and Northern Territory, dental therapists with appropriate training may also provide care for adults.
Dental hygienists have also worked as part of the dental team providing preventive and periodontal treatment interventions, in a team setting with a dentist. Their scope of practice varies across Australia and New Zealand. For example, dental hygienists in most regions are registered to take radiographs, perform risk assessments, polish and remove deposits from teeth, take impressions and carry out periodontal debridement and dressings for periodontal surgeries. However, not all areas allow their dental hygienists to administer local anaesthesia and apply fissure sealants, examine, diagnose and plan care for their patients. Dental hygienists also work in orthodontic practices providing clinical services, checking, maintaining and removing orthodontic appliances and maintaining oral hygiene. Their role is also preventive and includes dietary counselling, oral
health education and promotion and the provision of fluoride therapies. There are no limits on the age range or employment settings of dental hygienists but they predominantly work in private practices and may require the on-site presence of a dentist.

In Australia in 2005, there were on average 4.3 hygienists per 100,000 population and practice ratios ranged from 1.9/100,000 in Tasmania to 8.8/100,000 in South Australia. The 2005 national data collection found that the average age of hygienists was 36.8 years and they worked an average of 31.6 hours per week. Around 95% worked in private practices and only 2.5% were male (Tuesner & Spencer, 2008b). Of interest is the rise in numbers of hygienists across Australia over the past few years. The survey carried out in 1996 (Szuster & Spencer, 1997) found a total of 227 practising hygienists, whereas data collected in 2005 showed that the number had more than tripled to 1046, with an increase of 66% since 2003 alone (Tuesner & Spencer, 2008b). Western Australia and South Australia have the highest ratios of dental hygienists, reflecting a longer history of practice and training.

Analysis of the dental workforce data for New Zealand is more complicated. Three types of worker exist; these are dental hygienists, dental auxiliary and orthodontic auxiliary. In total, 371 were registered and practising within the above categories in 2008; with dental hygienists comprising the largest group at 250 in number. The average age of the dental hygienist group was 39.8 years and only 6 were male. The majority of dental hygienists worked in private practice, with approximately 53% working full-time. Approximately a quarter of the group worked in more than one practice. On average, New Zealand dental hygienists worked 38.3 hours per week (23.8) than their Australian counterparts (Broadbent, 2009). In 2007, the average dental hygienist / 100,000 population ratio for New Zealand was 5.2 / 100,000 with higher ratios reported in the main metropolitan areas of New Zealand (Broadbent, 2009).

EMERGENCE OF A NEW ORAL HEALTH PROFESSIONAL

It is clear that there is significant overlap in the range of skills and approaches to care by dental therapists and dental hygienists. There have been proposals for the development of a ‘hybrid’ dental auxiliary combining the skills of a dental therapist and dental hygienist for some time (Barmes, 1983; Wright, 1988). For a more detailed description of these categories and their scopes of practice, see http://www.dcnz.org.nz/Documents/Scopes/ScopesofPractice_Hygienists.pdf
Chapter 2

A formal recommendation that the skills of dental therapists and hygienists be combined to develop the generalist “oral health therapist” arose from the 1993 Nuffield Inquiry conducted in the United Kingdom. This inquiry defined and described the oral health therapist as one who could adapt their generalist oral health training and education (a combination of hygiene and therapy) to provide services in areas of greatest need where access to care is limited and levels of disease highest. This inquiry also proposed that these practitioners be able to add skills in a modular way to meet particular specialised needs and to work in all types of practice settings – including both public and private sectors (Nuffield, 1993). Several Australian educators and policy makers attended the presentation of the findings and they were subsequently influential in dental policy development decisions in Australia around that time (DH&CS, 1995; Wright, 1995).

However, in Western Australia, there have been dental therapists working in the private sector providing both dental therapist and dental hygienist services under the prescription of a dentist since 1971: the year that the training of dental therapist began (Gussy, 2001; DTHWA, 2007). Western Australia was unique in graduating dental therapists who could provide services for children and who had also completed a component dealing with the management of gingival health in adults. As mentioned earlier, WA dental therapists could work in both the private sector under prescription and autonomously in the School Dental Services. These distinctions in title have remained in place in Western Australia, with School Dental Therapists able to examine, diagnose and treatment plan and provide services to school children under employment in the School Dental Service and Dental Therapists providing treatment services under the prescription of a dentist to all age groups in private practices. Some dental therapists have also undertaken additional training in periodontal procedures to enable them to provide dental hygienist services in private practices (DTHWA, 2003 & 2007; Parkhurst, 1994).

Moreover, the Gillies Plains College of TAFE in South Australia has been offering a program since around 1980, enabling dental therapists to acquire dental hygiene skills. The Universities of Melbourne and Queensland both commenced add-on programs in 1999 for 8 and 26 students respectively, both of which ceased in 2004 (H. Calache, personal communication, 2002; L. Short, personal communication, 1999). The University of Melbourne at the time also offered the only bridging program
to enable dental hygienists to acquire dental therapy skills.

**CONTEMPORARY ORAL HEALTH THERAPISTS**

In 1996, the University of Melbourne became the first University Dental School in Australia to offer dental therapy and dental hygiene education at the Diploma level, and appointing the first dental therapists and dental hygienists as academic staff. The Diploma in Oral Health Therapy was unique at the time in that it had a core first year in which dental therapists and hygienists studied the same units in shared classes, with separate streams in the second year to develop their profession specific skills. This program was designed to establish the first steps towards developing the Oral Health Therapist in Australia.

In 1998, breaking new ground, the University of Queensland in combination with Queensland University of Technology, offered the first Bachelor of Oral Health degree program in Australia which qualified graduates for registration as both dental therapist and hygienist i.e. oral health therapists. In 2002, the University of Adelaide followed and in 2005, the University of Melbourne’s Bachelor of Oral Health program began. This was followed by the University of Sydney in 2006. In parallel was the establishment of three new dental schools in Australia; the first at Griffith University on the Gold Coast in Queensland in 2004, at La Trobe University in Bendigo, rural Victoria in 2006 and Charles Sturt University at their Wagga Wagga campus in rural NSW in 2008, all of which offer undergraduate programs in both Oral Health (program for oral health therapists) and Dentistry (program for dentists). In 2005 the University of Newcastle began a Bachelor of Oral Health in Dental Hygiene, which is the only single outcome Bachelor program in Australia. In 2010, the University of Newcastle commenced the first postgraduate program in dental therapy for dental hygienists.

In New Zealand, formal training in dental hygiene commenced in 1994 when Otago Polytechnic offered a 15-month Certificate in Dental Hygiene which developed into a two-year Diploma program in 1998 (Hannah, 1998; NZDHA, 2001). Dental hygiene education moved to the University of Otago in 2001, with the School of Dentistry offering a two-year Diploma pro-
gram. The oldest and last remaining (Department of Health administered) dental therapy school in Wellington closed in 1991 and training was transferred to the Wellington Polytechnic. In 1999, the University of Otago introduced dental therapy education, offering a Diploma in Dental Therapy from its School of Dentistry (TAGDT, 2001). 2002 saw the introduction of a three-year Bachelor of Health Sciences in Oral Health (Dental Therapy) program (University of Otago, 2002). The Diploma and Degree programs in therapy and hygiene ran concurrently, with the final students graduating from these courses in 2007. In 2002, the Auckland University of Technology (AUT) also established a Bachelor of Health Science in Oral Health (Dental Therapy) program. Both the Otago and AUT programs have since evolved into Oral Health degree programs with graduates qualified for registration as both dental therapists and dental hygienists.

These developments are in keeping with international developments in dental hygiene education where many countries offer three and four year programs awarding bachelor degrees (Hovius & Blitz, 2001). The United Kingdom, as a result of the Nuffield Inquiry recommendations, has shifted the emphasis in training to a Bachelors degree in Oral Health Therapy, although many institutions continue to offer single outcome programs. In the Netherlands a similar development has also occurred and in the US states of Alaska and Minnesota, dental therapy practice has been legalised as both an addition to dental hygiene and as a stand-alone qualification (McKinnon et al., 2007; Nash et al., 2008; IOM, 2009; MDH & MBD, 2009).

In 2009, ten out of thirteen Australian and New Zealand programs are educating oral health therapists with only the University of Newcastle, Torrens Valley TAFE and Curtin University in WA offering single skill outcome programs. Curtin University has indicated its intention to offer a combined Bachelor of Oral Health program in 2012.

In line with developments in dentistry, contemporary oral health therapists (including dental therapists and dental hygienists) are more broadly educated professionals than their tightly regulated predecessors. Courses today require students to study across a wider range of areas, often integrated with dental students for various course components. They are educated to synthesise and apply knowledge to complex problems, understand and apply technology in more complex ways and to have well-developed research, communication and cultural sensitivity skills in keeping with the contemporary health professional role. Courses encompass clinical practice, biological,
health and social sciences, ethics and evidence-based practice essential to contemporary health practice and are accredited by the Australian and New Zealand Dental Councils. Today, qualification for practice in oral health therapy requires a bachelor-level tertiary course of education and training over three years, with applicants to most courses requiring university level entrance and pre-requisite studies in English and Biology.

The oral health therapist’s key role is as a primary oral health care provider who has a capacity to promote oral health for individuals and the community, diagnose and recognise oral conditions, plan and deliver clinical and preventive treatment, evaluate care and collaborate with other dental and general health practitioners to improve the oral health status of the community.

The following chapters will describe in more detail, the education of oral health therapists for the Australian and New Zealand environment.
REFERENCES


New Zealand Dental Hygienists Association (NZDHA). (2001). Interview with the President of the New Zealand DHA; Legislation and the roles and education of New Zealand dental hygienists.


INTRODUCTION
CHAPTER 3

The Genesis of an Idea

Gregory J Seymour

It is indeed an honour to write an introduction for this monograph on the Oral Health programs as they have developed in Australia and New Zealand over the past 15 years. The genesis of these programs and the thinking that led to their development goes back to the early 1990’s in Queensland. At that time, Queensland Health was responsible for the training of school dental therapists in Queensland. This was done at the School Dental Therapists Training Centre (later known as the Oral Health Education Unit) at Yeeronga, a Brisbane suburb, somewhat removed from the School of Dentistry at the University of Queensland, which was situated at Turbot Street in the city. School Dental Therapists had been introduced into Queensland some 20 years earlier and Queensland Health had come to realise that they were not a tertiary education provider and at the same time, there was increasing pressure to formalise School Dental Therapy training into a degree program.

Following preliminary discussions with the three Brisbane based Universities, The University of Queensland (UQ), Queensland University of Technology (QUT) and Griffith University, it was decided that Queensland Health would review the future of School Dental Therapy education in Queensland. Joanne Wright of the “Wright Consultancy Group” was then engaged to undertake this review. I was fortunate to have been appointed Dean of the Faculty of Dentistry at the University of Queensland, firstly on an interim basis in 1993 and then for first of two five year terms in 1994. As such, I was identified as one of the key “stake holders” and was subsequently interviewed by Joanne.

In developing any new degree program it is important to examine the need for that program, what its knowledge and research base is going to be, how this differs from what is already being offered and how it will complement what is already being offered. In this context, many of these issues overlapped with respect to a possible degree for school dental therapists. There is abundant evidence to show that restorative
dentistry does little in preventing oral disease. It is the ambulance at the bottom of the cliff scenario, and while it is of great benefit to the individual suffering from oral disease, it does nothing to stop or reduce disease. Indeed, there is evidence that early simple restorative dentistry leads to further more complex restorative dentistry and ultimately even to tooth loss. Therefore producing a profession whose sole role is the provision of more restorative dentistry had little to commend it. Equally, the ageing population and the implications of oral health care for the elderly had also to be recognised.

I am sure that most dental educators, as well as the majority of the profession, would agree that the knowledge and research base that underpins dentistry lies in the biological and physical sciences. In this context the major advances in these sciences over the past two decades have been in the areas of molecular biology and nanotechnology such that if dentistry is to take advantage of these, in many cases, quite incredible advances, dental education needs to develop curricula so that the practitioners of tomorrow will be well equipped to apply them to the benefit of the community as well as individual patients. As these sciences take up an increasing time, other dental curricula other components must decrease. As well, it is essential that graduating dentists must be technically and clinically competent such that sadly it is the social sciences which suffer from this curriculum pressure. Hence, a new degree which has the social sciences as its knowledge and research base would not only be different from dentistry but, importantly, would also complement it. Such a degree would train students to identify the social determinants of health, in particular oral health, whether this was in a population or a specific community (e.g., school or nursing home) and give them the skills to be able to start to address these determinants in a socially and culturally relevant fashion. In so doing, disease prevention could be initiated at a fundamental level. If these skills were also combined with the ability to provide primary care in children and oral hygiene for the elderly, a multi-skilled professional which would complement dentistry in meeting the health needs of the community, would be formed. Such a profession would parallel dentistry and not compete with it.

These were the concepts that I put to Joanne Wright and subsequently this became the model accepted by Queensland Health as well as all other stakeholders. The model involved combining school dental therapy and dental hygiene clinical training together with health promotion and public health so that the social sciences became the knowledge and research
base underpinning the new degree. The graduates would nevertheless be able to register as a “School Dental Therapist” or “Dental Hygienist” or indeed both.

Having accepted the model, it was then necessary to develop the program, while at the same time Queensland Health recognised the career aspirations of the existing school dental therapists, which basically meant that two separate programs had to be developed. The Universities were then asked for expressions of interest and both the University of Queensland with its well established and highly regarded dental school and QUT with its School of Public Health expressed their interest. At the time Griffith University indicated that they were not interested in bidding for the program. As a result, Queensland Health asked UQ and QUT to form a consortium to maximise the strengths of both institutions and to develop the new program jointly.

A curriculum development committee with representatives from UQ, QUT and Queensland Health was formed and I asked Dr Tina Paxinos and Dr Jenny Smyth to represent UQ on this committee. The committee was tasked with developing not only the new degree but also the academic upgrade program for existing school dental therapists. This was indeed a daunting task as these programs not only had to be developed but also go through the very rigorous academic approval process of both universities. At UQ, this involved being approved by the Faculty’s Undergraduate Curriculum Development Committee, the Faculty Executive Committee and ultimately by the Academic Board of the University. Finally, after having been through this process both programs had to be approved by the Dental Board of Queensland so that graduates would be able to be registered. Subsequently the Australian Dental Council (ADC) undertook the accreditation of these programs and with the formation of the joint accreditation process with the Dental Council of New Zealand, the New Zealand based programs also underwent accreditation.

The joint program consisted of the clinical components for school dental therapy and dental hygiene being carried out by UQ, at both the Dental School in Turbot Street and at the Oral Health Education Unit at Yeronga and also Holland Park, while the health promotion and public health components being carried out by QUT at its Kelvin Grove campus. These latter components comprised fully one-third of the program and formed the knowledge and research base for the degree. The Foundation Director of the joint program was Dr Lyn McAllan while the Director of the Academic Upgrade Program was Dr Jenny Smyth. The first graduates of this joint University of
Queensland/QUT program were in 2000.

In New Zealand, Auckland University of Technology adopted the program in 2006 with the first cohort of graduates being in 2008. The University of Otago introduced the combined program in 2007 incorporating defined subjects in Sociology and Māori Culture. The first graduates of this program will be in 2009.

It is personally gratifying for me, to see the germ of my idea for new type of oral health professional, which was planted in the early 1990’s, now not only to have germinated and blossomed but for it to become firmly rooted into the provision of oral health care across Australia and New Zealand. The graduates of these programs are multi-skilled and it will be important for all these skills to be used so as to promote good oral health for all Australians and New Zealanders.

Figure 3.1 Greg Seymour
Reflections from the Pioneer and Foundation Director of UQ Oral Health

Dr Lynette McAllan

My involvement with the development and implementation of the Oral Health and Academic Upgrade Programs was one of the most satisfying experiences in my professional life. I was pleased to be available to apply the years of experience and satisfaction I had in some of my major areas of interest - paediatric dentistry, the education of oral health care professionals in undergraduate programs, dental therapy, dental science, postgraduate specialty programs, and in research.

It was inevitable that some of the Curricula Committee’s ‘best’ ideas did not transpire as the Committee was faced with compromises imposed by practical logistics of the time and the constraints of available resources. The Committee acknowledged the disappointments experienced by some of the interest groups, and how generous they were in their tolerance with the inevitable ‘niccoughs’ and discomforts that sometimes arose during the implementation phase. I am pleased that over time some of these shelved ideas and concepts have been able to be implemented.

My task as Chair of the Curricula Committee was made rewarding by the unfailing support, enthusiasm and energy that all members of the Committee gave to the project and that their good humour never failed them. The Committee acknowledged the significant challenges to the project from the start - the sensitivity of the project and what it signified and demanded for therapists in the workforce located throughout Queensland; the walk into the unknown where there was no pre-existing model to generate initial ideas; the unique set of determinants we were dealing with that would determine the effectiveness of any designs that we came up with, particularly as the programs had to align to ensure the standards of outcomes. Challenges for the Academic Upgrade program included widespread geographic and often remote locations of the existing workforce; the range of education bases and professional experiences within that workforce; and the constraints of existing commitments in the candidates’ personal lives.

Figure 3.2
Foundation Director of UQ Oral Health - Lynette McAllan & Current BOralH Program Coordinator - Annetta Tsang
What impressed me throughout the project was the widespread enthusiasm and willingness to contribute and support the implementation of both programs - both within the Dental School, allied professions and members of interest groups. Their positive responses with ideas and support facilitated our task.

My advocacy for necessity for continuing education for dental therapists in the workforce who did not undertake the Academic Upgrade was satisfied in 1996, when I was granted recurrent annual funding by Queensland Health to establish my concept for annual state-wide Continuing Education programs. My role was to establish and manage an annual program offering a range of continuing education courses that could be delivered state-wide, onsite in the districts for all staff in clinical oral health services. While not limited to this scope, the courses were designed to ensure that existing dental therapists in the workforce who did not undertake the Academic Upgrade Program could acquire a strong contemporary knowledge base to support their clinical practice. These annual programs offered a selection of courses that involved people experienced in contemporary issues, knowledge and research.

I am impressed and delighted by the ongoing developments in the Oral Health program with each academic year. The enthusiasm and commitment of all staff and support groups remains. The graduates have established themselves as integral to programs providing and promoting high quality oral health care that is responsive to contemporary community needs at both the patient and community levels. The acknowledgement of their work, the respect and satisfaction expressed by patients, the community and employers is a tribute to the graduate's skills and enthusiasm.