

ADVANCING TREATMENT OPTIONS FOR TOBACCO CESSATION, PREVENTION AND RELATED ILLNESSES, WITH PARTICULAR REFERENCE TO INDIGENOUS POPULATIONS

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Doctor of Philosophy

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*“Nothing in life is to be feared,
it is only to be understood.*

*Now is the time to understanding more,
so that we may fear less.”*

~ Marie Curie

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Declaration

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint award of this degree.

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Signed.....

Date

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Family and friends

“You can kiss your family and friends good-bye and put miles between you, but at the same time you carry them in your heart, your mind, your stomach, because you do not just live in a world but a world lives in you.”

~ Fredrick Buechner

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“Friendship is born at the moment one person says to another: What? You too? I thought I was the only one.”

~ C. S. Lewis

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“We are all visitors to this time, this place. We are just passing through. Our purpose here is to observe, to learn, to grow, to love... and then we return home.”

~ Aboriginal proverb

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Supervisors

“Tell me and I forget, teach me and I may remember, involve me and I learn.”

~ Benjamin Franklin

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*“I would spread the cloths under your feet; But I, being poor, have only my dreams;
I have spread my dreams under your feet; Tread softly because you tread on my dreams.”*

~ William Butler Yates

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“What is a teacher? I'll tell you: it isn't someone who teaches something, but someone who inspires the student to give of her best in order to discover what she already knows.”

~ Paulo Coehlo

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“Education is only the most fully conscious of the channels whereby each generation influences the next”

~ C. S. Lewis

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Abbreviations

5A	Ask, Assess, Advise, Assist and Arrange
6MWD	Six Minute Walking Distance
$\alpha 4\beta 2$	Alpha 4 beta 2
ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
Adj	Adjusted
ADSCA	Alcohol and other Drug Services Central Australia
AE	Adrian Esterman
AIHW	Australian Institute of Health and Welfare
AMSWS	Aboriginal Medical Service Western Sydney
ANBL	All Nations Breath of Life
ANCOVA	Analysis of Covariance
ANOVA	Analysis of Variance
Approx.	Approximately
APY	Anangu Pitjantjatjara Yankunytjatjara (APY lands, central Australia)
ASM	Annual Scientific Meeting
ASMR	Australian Society for Medical Research
ATS	American Thoracic Society
AU	Australian
AV	Antony Veale
BHI	Basil Hetzel Institute for Translational Health Research
b.i.d.	Twice daily

BJS	Brian James Smith
BMI	Body Mass Index
BOABS	Be Our Ally Beat Smoking
BS	Brian Smith
CA	Continuous Abstinence
CATS	Chronically Addicted Tobacco Smokers
CBT	Cognitive Behavioural Therapy
CCT	Controlled Clinical Trial
CD	Compact Disk
CDC	Centres for Disease Control
CEITC	Centre for Excellence in Indigenous Tobacco Control
CEO	Chief Executive Officer
CI	Confidence Intervals
CNS	Central Nervous System
CO	Carbon Monoxide
COPD	Chronic Obstructive Pulmonary Disease
COAG	Council of Australian Governments
cpd	Cigarettes per day
CPO	Controlled Purchase Operations
CYP1A1	Cytochrome P450 1A1
CYP1A2	Cytochrome P450 1A2
CYP2A6	Cytochrome P450 2A6
DASSA	Drug and Alcohol Services South Australia
Deff	Design Effect

Dent	Dentists
DHS	Doctors Helping Smokers
DNA	Deoxyribonucleic acid
DOC/Doc	Doctor
DOI	Digital Object Identifier
DVD	Digital Versatile Disk
E-cigarettes	Electronic cigarettes
EEG	Electroencephalogram
EGF	Epithelial Growth Factor
ENT	Ears, Nose and Throat (specialist)
EORTC	European Organisation for Research and Treatment of Cancer
EOT	End of Treatment
EPOC	Effective Practice Organisation of Care (Cochrane group)
EQD	Estimated Quit Date
ESS	Effective Sample Size
ETS	Environmental Tobacco Smoke
F	Female
FAX	Facsimile
FDA	Food and Drug Administration
FEV ₁	Forced Expiratory Volume in 1 second
FRACP	Fellow of the Royal Australasian College of Physicians
Fri	Friday
FVC	Forced Vital Capacity
GAINS	Give American Indians No-smoking Strategies

GG	Gillian Gould
GIV	Generic Inverse Variance
GLIM	Generalised Linear Interactive Modelling
GLMM	Generalised Linear Mixed Modelling
GP	General Practitioner
GUTS	Give Up The Smokes
h	Hour
HB	Helen Bradley
HDA	Healthy Development Adelaide
HJ	Harshani Jayasinghe
HMO	Health Maintenance Organisation
HPV	Human Papillomavirus
HREC	Hospital Research Ethics Committee
I-ANBL	Internet All Nation Breath of Life
IARC	International Agency for Research on Cancer
ICMJE	International Committee of Medical Journal Editors
IQR	Inter Quartile Range
ISRCTN	International Standard Randomised Controlled Trial Number
IV	Inverse Variance
JN	Jeffrey Newchurch
KC	Kristin Carson
KCSH	Key Community Stakeholder
KS	Kuljit Singh
KVC	Kristin Veronica Carson

LMH	Lyell McEwin Hospital
LMICs	Low to Middle Income Countries
LST	Life Skills Training
M	Male or Mean (difference specified in each publication)
MASAC	Medical And Scientific Advisory Committee (Asthma Foundation of SA)
max	Maximum
MB	Malcolm Brinn
MeSH	Medical Subject Headings
mg	Milligram
M-H	Mantel Haenszel
min	Minute
ml	Millilitres
MMWR	Morbidity Mortality Weekly Report
Mon	Monday
MP	Matthew Peters
MSOAP	Medical Specialist Outreach Assistance Program
mth	Month
MV	Marjolein Verbiest
N/A	Not Applicable
NACCHO	National Aboriginal Community Controlled Health Organisation
NHANES	National Health And Nutrition Examination Survey
NHL	Non-Hodgkin's Lymphoma
NHMRC	National Health and Medical Research Council
NI	Non-Indigenous

NIH	National Institute of Health
NL	Nadina Labiszewski
NNT	Number Needed to Treat
N-O-T	Not On Tobacco
NRT	Nicotine Replacement Therapy
NS	Not Significant
NSW	New South Wales
NT	Northern Territory
NY	New York
OR	Odds Ratio
OTC	Over The Counter
PAFC	Port Adelaide Football Club
PBS	Pharmaceutical Benefits Scheme
PhD	Doctor of Philosophy
pH	Potential Hydrogen
P:I	Prevalence:Incidence
PIS+C	Participant information sheet plus consent form
PO Box	Post Office Box
ppm	parts per million
PRISMA	Preferred Reporting Item for Systematic reviews and Meta-Analyses
Priv	Private
PsyQol	Psychological Quality of Life
QLD	Queensland
Qol	Quality of Life

RAH	Royal Adelaide Hospital
RCT	Randomised Controlled Trial
R.E.A.L.	Refuse, Explain, Avoid and Leave
RELIQ	Reduced Levels of nicotine in cigarettes to Increase Quitting
rho	Interclass Correlation Coefficient
ROB	Risk of Bias
RR	Risk ratio
RT	Rachada To-A-Nan
SA	South Australia
SAHMRI	South Australian Health and Medical Research Institute
SAS	Statistical Analysis Software
Sat	Saturday
SD	Standard Deviation
SE	Standard Error
SES	Socio-Economic Status
SF36	Short Form 36
SMD	Standardised Mean Difference
SNAP	Smoking, nutrition, alcohol and physical activity
SODAS	Stop, Options, Decide, Act/communication skills, Self-praise
SR	Sustained Release
SSA	Site Specific Assessment
STOMP	STOp smoking by Mobile Phone
STOP	Smoking Termination Opportunity for inPatients
T	Time point

tab	Tablet
TAP	Tobacco Action Project
Tas	Tasmania
TEL	Telephone
THP	Training Health Professionals
TM	Trade Mark
TQEH	The Queen Elizabeth Hospital
TQEHLMH	The Queen Elizabeth Hospital and Lyell McEwin Hospital
TR	Thomas Robertson
TRIP	Translating Research In to Practice
TSANZ	Thoracic Society of Australia and New Zealand
TSI	Torres Strait Islander
Tue	Tuesday
TV	Television
Txt2Quit	Text to Quit
UK	United Kingdom
UoA	University of Adelaide
US	United States
USA	United States of America
Uni	University
UV	Ultraviolet
VAMC	Veteran Affairs Medical Centres
VT	Varenicline Tartrate
VT+C	Varenicline Tartrate plus Counselling

WA	Western Australia
WCH	Women's and Children's Hospital
WEA	Workers Education Association
Wed	Wednesday
WHO	World Health Organisation
Wk	Week
WMD	Weighted Mean Difference
YAA	Young Achiever Awards
Yr	Year

Awards (Total number of awards/finalist positions n=24)

- 2016 Finalist and oral presenter for the Ann Woolcock Young Investigator Award for the Thoracic Society of Australia and New Zealand (top five abstracts are selected as finalists and oral presenters for the April 2016 ASM to be held in Perth); presentation title:
Superiority of a course of varenicline tartrate plus counselling over counselling alone for smoking cessation: a 24 month randomised controlled trial for inpatients
- 2015 Best oral presentation by a Senior Clinical Researcher for The Queen Elizabeth Hospital Research Day for 2015; presentation title:
Superiority of a course of varenicline tartrate plus counselling over counselling alone for smoking cessation: a 12 month randomised controlled trial for inpatients
- 2015 Recipient of the **Australian Financial Review and Westpac 100 Women of Influence**; One of the winners in the Young Leader category
- 2015 Recipient of the 2015 South Australian Tall Poppy award presented on the 27th of July at Government House by the Governor the Honourable Hieu Van Le
- 2015 Recipient of the Australian Society for Medical Research Ross Wishart Memorial Award for best oral presentation at the South Australia conference, (top four abstracts are chosen as finalists and oral presenters), June 2015, Adelaide ASM; presentation title:
Superiority of a course of varenicline tartrate plus counselling over counselling alone for smoking cessation: a 12 month randomised controlled trial for inpatients

- 2015 Best oral presentation for the Evidence Based Medicine TSANZ (Thoracic Society of Australia and New Zealand) Special Interest Group: Gold Coast ASM; presentation title:
Culturally-tailored interventions for smoking cessation in Indigenous populations: A Cochrane systematic review and meta-analysis
- 2015 Best oral presentation Tobacco Control Prize for the TSANZ (Thoracic Society of Australia and New Zealand): Gold Coast ASM; presentation title:
Can nicotine replacement therapy delivered via continuous patch cause auto-induction (up-regulation) of receptors? A pilot study
- 2015 Honorary Member of the Golden Key International Honour Society for the University of South Australia Chapter; Golden Key recognises the top 15% of students graduating from Universities worldwide and membership is by invitation only; Made an Honorary Member and Keynote speaker during the May 2015 annual ceremony
- 2015 Thoracic Society of Australia and New Zealand Award for recognition of dedication to Respiratory Medicine and being named the Young Australian of the Year presented at the 2015 Gold Coast Annual Scientific Meeting Opening Ceremony
- 2015 **National finalist for the Young Australian of the Year for Australia** (South Australian representative) including attendance at ceremonies in Canberra on Australia Day eve including morning tea at The Lodge with the Prime Minister Tony Abbott and lunch with the Governor General at Parliament House
- 2015 Young Citizen of the Year for the City of Holdfast Bay announced on Australia Day 2015 during a public ceremony in Glenelg
- 2014 Finalist and oral presenter for the South Australian and Northern Territory Thoracic Society of Australia and New Zealand Young Investigator Award; presentation title:

Respiratory health service delivery and utilisation by Aboriginal Australians: A qualitative analysis

- 2014 **Recipient of the Young Australian of the Year for South Australia 2014/15**
- 2014 **Winner of the Premier's and Channel 9 Young Achiever of the Year.** Chosen as the recipient of the award from over 200 applications and across 8 categories including; Online achievement, sports, arts, career kick-start, Aboriginal achievement, science and technology, rural health, and environment.
- 2014 Winner of the Channel 9 Young Achiever Award for The University of Adelaide Faculty of Sciences, Science and Technology Category
- 2014 Channel 9 Young Achiever Award Finalist (one of four) for the Australian Super Career Kick Start Award
- 2013 Finalist (one of five out of 11 applications) and oral presenter for the South Australian and Northern Territory Thoracic Society of Australia and New Zealand Young Investigator Award; presentation title:
Barriers and enablers for the use of smoking cessation pharmacotherapy in Aboriginal and Torres Strait Islander populations: A qualitative synthesis
- 2013 Semi-finalist (1 of 8 selected for an oral presentation) for the 2013 South Australian Young Investigator Award, following short listing from audio recording, CV and written application (lay summary)
- 2013 Recipient of the Young Professionals Group Development Grant Program Award for the development activity titled 'Leaders in Lung Health and Respiratory Services'
- 2013 Finalist (one of four) for the Catherine Helen Spence (CHS) Memorial Scholarship, through submission of a detailed grant application and following CHS committee panel interview

- 2012 Recipient of the South Australian and Northern Territory Thoracic Society of Australia and New Zealand Young Investigator Award; presentation title: *Interventions for tobacco prevention in Indigenous youth: A Cochrane review and narrative synthesis*
- 2012 TSANZ (Thoracic Society of Australia and New Zealand) Tobacco Control Prize for best oral presentation: Canberra ASM; presentation title: *Interventions for tobacco cessation in Aboriginal Australians and other Indigenous populations*
- 2012 Recipient of the South Australian and Northern Territory Thoracic Society of Australia and New Zealand Young Investigator Award; presentation title: *Interventions for tobacco prevention in Indigenous youth: A Cochrane review and narrative synthesis*
- 2011 Finalist and oral presenter for the South Australian and Northern Territory Thoracic Society of Australia and New Zealand Young Investigator Award; presentation title: *Interventions for tobacco cessation in Indigenous populations: A Cochrane meta-analysis*

Fellowships, grants and scholarships (Total \$1,153,022.20 related to PhD)

2016-18 Smith BJ (CIA), **Carson KV (CIB)**, Esterman AJ (CIC), Peters MJ (CID), Gould G (CIE). National Health and Medical Research Council (NHMRC) Project grant. 'Training health professionals in tobacco cessation and evidence translation for Aboriginal Australians' **\$832,723.20** over three years

2015-17 **Carson KV. (CIA)** NHMRC TRIP Fellowship (National Health and Medical Research Council, Translating Research In to Practice Fellowship). Title of research 'Training health professionals in smoking cessation and tobacco abuse prevention for Aboriginal Australians'. **\$172,911.00** for 0.5 salary and professional development over two years

2015-17 **Carson KV. (CIA)** Cancer Australia co-funding for the NHMRC TRIP Fellowship (National Health and Medical Research Council, Translating Research In to Practice). Title of research 'Training health professionals in smoking cessation and tobacco abuse prevention for Aboriginal Australians'. **\$100,000.00** over two years including \$20,000.00 p.a. for salary support and \$30,000.00 p.a. for research support

2015 **Carson KV.** Robert Pierce Grant-In-Aid for Indigenous Lung Health awarded once annually via the Thoracic Society of Australia and New Zealand to honour the memory of the late Respiratory Professor Rob Pierce for research focusing on understanding and improving the lung health of Indigenous people in Australia and/or New Zealand. Title of study '*Training health professionals in smoking cessation and tobacco prevention interventions for Aboriginal Australians*' **\$15,000.00**

2015 **Carson KV,** Smith BJ. Research activity sponsorship from Seeley International made by Frank and Kathy Seeley following a presentation of research by Kristin and Brian on the 04/03/2015 to support a scholarship position within the department **\$18,000.00**

- 2015 **Carson KV.** Recipient of the international travel grant from Healthy Development Adelaide for final year PhD students to attend Res Health 2015: 1st International Respiratory and Sleep Medicine Conference **\$500.00**
- 2015 **Carson KV.** Recipient of a competitive Travel grant from the Thoracic Society of Australia and New Zealand (TSANZ) to attend the 2015 conference in the Gold Coast; **\$388.00**
- 2014 **Carson KV.** Janet Elder International Travel Award; Awarded from the submitted abstract '*Barriers and enablers for the use of smoking cessation pharmacotherapy in Aboriginal and Torres Islander populations: A qualitative analysis*' **\$2,500.00**
- 2013-14 **Carson KV.** Australian and New Zealand School of Government Grant to write a policy document for the journal *Evidence Base* titled 'Interventions for smoking cessation and tobacco abuse prevention in Indigenous populations; **\$10,000.00**
- 2013 **Carson KV.** Recipient of the Young Professionals Group Development Grant for the development activity titled '*Leaders in Lung Health and Respiratory Services*' to attend the TSANZ 2014 conference in Adelaide **\$500.00**
- 2012 **Carson KV.** Recipient of a competitive Travel grant from the Thoracic Society of Australia and New Zealand (TSANZ) to attend the 2012 conference in Canberra; **\$500.00**

Peer-reviewed journal publications (Total Impact Factor (IF) 49.815)

Submitted (n= 2 related to PhD work)

1. **Carson KV**, Singh K, Smith BJ. A national survey of current practice by Respiratory Specialists and Allied Health Professionals in treating Aboriginal and TSI tobacco use. *Submitted to the Medical Journal of Australia* 2015 (IF 3.789)
2. **Carson KV**, Brinn MP, Peters MJ, Chang AB, Veale AJ, Esterman AJ, Smith BJ. Smoking cessation pharmacotherapy and health service utilisation for tobacco addiction among Aboriginal and Torres Strait Islander Australians: A qualitative analysis *Submitted to Tobacco Control* 2015 (IF 5.150)

Published (n= 12 related to PhD work)

3. **Carson KV**, Jayasinghe H, Smith BJ, Newchurch J, Brinn MP, Veale A, Peters M, Esterman AJ, Singh K and Members of the TSANZ Indigenous Lung Health Working Party. Smoking cessation and tobacco abuse prevention in Indigenous populations; *Evidence Base; Issue 3; 2014* <https://journal.anzsog.edu.au/publications> (IF N/A)
4. **Carson KV**, Smith BJ. Methodological challenges and options for addressing them in Aboriginal and Torres Strait Islander health research. *Australasian Epidemiology* 2014; 21(2): 47-50 (IF N/A)
5. **Carson KV**, Smith BJ, Brinn MP, Peters M, Fitridge R, Koblar S, Jannes J, Veale A, Singh K, Goldsworthy S, Litt J, Edwards D, Esterman AJ. Safety of a course of varenicline tartrate and counselling over counselling alone for smoking cessation: A 52 week randomised controlled trial for inpatients (STOP Study). *Nicotine and Tobacco Research* 2014 Jul 16 <http://www.ncbi.nlm.nih.gov/pubmed/25031315> (IF 2.805)
6. Smith BJ, **Carson KV**, Brinn MP, Labiszewski NA, Peters M, Fitridge R, Koblar S, Jannes J, Veale A, Goldsworthy S, Litt J, Edwards D, Esterman AJ. Smoking Termination Opportunity for inPatients (STOP): Superiority of a course of

varenicline tartrate plus counselling over counselling alone for smoking cessation: A 12-month randomised controlled trial for inpatients. *Thorax* 2013; 68(5): 485-6 doi:10.1136/thoraxjnl-2012-202484 (IF 8.376)

7. **Carson KV**, Usmani ZA, Robertson T, Mysore S, Brinn MP. Smoking cessation interventions for lung cancer management. *Lung Cancer Management* 2013; 2(1): 61-74; ISSN 1758-1966 (IF N/A)
8. **Carson KV**, Brinn MP, Robertson T, To-A-Nan R, Esterman AJ, Peters M, Smith BJ. Current and emerging pharmacotherapeutic options for smoking cessation. *Substance Abuse, Research and Treatment* 2013; 7(5): 85-105 (IF N/A)
9. **Carson KV**, Jurisevic MA, Smith BJ. Is cancer still reduced if you give up smoking in later life? *Substance Abuse, Research and Treatment* 2013; 2(5): 357-68; ISSN 1758-1966 (IF N/A)
10. **Carson KV**, Labiszewski NA, Brinn MP, Veale A, Chang AB, Esterman AJ, Smith BJ. Interventions for tobacco prevention in Indigenous youth. *Cochrane Database of Systematic Reviews* 2012, Issue 8. Art. No.: CD009325. DOI: 10.1002/14651858.CD009325.pub2 (IF 5.939)
11. **Carson KV**, Verbiest MEA, Brinn MP, Crone MR, Esterman AJ, Assendelft WJJ, Smith BJ. Training health professionals in smoking cessation (Review). *Cochrane Database of Systematic Reviews* 2012, Issue 5. ART. No.: CD000214. DOI: 10.1002/14651858.CD000214.pub2 (IF 5.939)
12. **Carson KV**, Brinn MP, Peters M, Veale A, Esterman AJ, Smith BJ. Interventions for smoking cessation in Indigenous populations (Review). *Cochrane Database of Systematic Reviews* 2012, Issue 1. Art. No.: CD009046. DOI: 10.1002/14651858.CD009046.pub.2 (IF 5.939)
13. **Carson KV**, Labiszewski NA, Brinn MP, Veale A, Chang AB, Esterman AJ, Smith BJ. Interventions for smoking prevention in Indigenous youth. PROTOCOL. *Cochrane Database of Systematic Reviews* 2011, Issue 9. Art. No.: CD009325. DOI: 10.1002/14651858.CD009325 (IF 5.939)

14. **Carson KV**, Brinn MP, Veale A, Esterman AJ, Smith BJ. Interventions for smoking cessation in Indigenous populations. Protocol: *Cochrane Database of Systematic Reviews* 2011, Issue 3. Art. No.: CD009046. DOI: 10.1002/14651858.CD009046 (IF 5.939)

Peer-reviewed book chapters (n= 2 related to PhD work)

15. **Carson KV**, Verbiest MEA, Brinn MP, Crone MR, Esterman AJ, Assendelft WJJ, Smith BJ. Chapter 2 in hard copy (2014): ‘Training health professionals in smoking cessation care’ in the book ‘The implementation of smoking cessation care in general practice’. Editor: Verbiest MEA. 2014 pp23-80; Publisher: Optima BV Rotterdam, The Netherlands; ISBN: 978-90-9028611-2
16. **Carson KV**, Robertson T, Brinn MP, Peters M, Veale A, Esterman AJ, Smith BJ. Chapter title: Tobacco use, prevention and cessation for Indigenous populations around the world: A systematic review and narrative synthesis. Chapter 1; Book title: *Health Disparities: Epidemiology, Racial/Ethnic and Socioeconomic Risk Factors and Strategies for Elimination*. Edited by: Jackson OT, Evans KA. (*Hard copy and print; 2013*) p1-38; ISBN: 978-1-62618-570-8; Nova Publishers

Presentations: (Total number of PhD presentations n=70)

Keynote speaker presentations at conferences:

1. Carson KV. Keynote speaker for the YWCA (Young Women's Christian Association) of Adelaide for SHE Leads Young Women Conference about my journey to becoming a scientist and what young women can do to take charge and make a positive change in their lives; Conference theme is Power to change Women's Leadership (21/08/2015; Stamford Plaza Hotel)
2. Carson KV. Keynote speaker for the YWCA (Young Women's Christian Association) of Adelaide for SHE Leads High Conference about my journey to becoming a scientist and what young women can do to take charge and make a positive change in their lives (08/05/2015; Stamford Plaza Hotel)
3. Carson KV, Brinn MP, Labiszewski NA, Peters MJ, Veale AJ, Smith BJ. Interventions for smoking cessation in Indigenous populations: A Cochrane Systematic Review. *Thoracic Society of Australia and New Zealand*, March 2012, Canberra; Invited by Dr Peter Franklin, Chair of the Tobacco Special Interest Group, TSANZ
4. Carson KV, Brinn MP, Labiszewski NA, Peters MJ, Veale AJ, Smith BJ. Interventions for smoking cessation in Aboriginal Australians: A Meta-analysis. *Thoracic Society of Australia and New Zealand*, March 2012, Canberra; Invited by Dr Peter Franklin, Chair of the Tobacco Special Interest Group, TSANZ

(NOTE: The two abstracts above were selected as a combined 'key note' oral presentation (30 minute duration), which subsequently received an award being 'The Tobacco Control Prize' for the best oral presentation)

Invited conference presentations

5. Carson KV. Smoking cessation in COPD – current evidence and future directions. *South Australian and Northern Territory Annual Scientific Meeting for the Thoracic Society of Australia and New Zealand, September, 2014 Adelaide* (15 minutes + 5 minutes question time); Invited by President of the Society Dr Chien-Li Holmes-Liew, TSANZ

Oral conference presentations:

6. Carson KV, Jayasinghe H, Van Agteren J, Ameer F, Smith BJ. Mass media interventions for preventing smoking in young people: A Cochrane systematic analysis. *Asia Pacific Society of Respiriology*, Kuala Lumpur, Malaysia, 2nd to the 6th of December 2015
7. Carson KV, Smith BJ, Peters MJ, Veale AJ, Esterman AJ. Superiority of a course of varenicline tartrate plus counselling over counselling alone for smoking cessation: A 24-month randomised controlled trial for inpatients. *Asia Pacific Society of Respiriology*, Kuala Lumpur, Malaysia, 2nd to the 6th of December 2015
8. Carson KV, Smith BJ, Jayasinghe H, Van Agteren J, Peters MJ, Veale A, Singh K, Esterman AJ. Culturally tailored programs to help Indigenous smokers quit may be successful in closing the gap. *Oceania Tobacco Control Conference*, Perth, Australia, 20th to the 22nd of October 2015
9. Carson KV, Jayasinghe H, Van Agteren J, Peters MJ, Veale A, Esterman AJ, Smith BJ. Indigenous youth tobacco prevention programs may be causing more harm than good. *Oceania Tobacco Control Conference*, Perth, Australia, 20th to the 22nd of October 2015
10. Carson KV, Smith BJ, Peters MJ, Veale A, Singh K, Esterman AJ. Inpatient smokers quit following acute life threatening event with use of varenicline plus Quitline counselling. *Oceania Tobacco Control Conference*, Perth, Australia, 20th to the 22nd of October 2015
11. Carson KV, Smith BJ, Brinn MP, Peters MJ, Fitridge RA, Litt JC, Koblar SA, Jannes J, Veale AJ, Goldsworthy SJ, Singh K, Esterman AJ. Superiority of varenicline tartrate plus counselling over counselling alone for long-term smoking cessation: 24 month follow-up of a randomised controlled trial. Basil Hetzel Institute for Translational Health Research 2015 Research Day, October 2015
(Awarded best oral presentation by a Senior Clinical Researcher)

12. Carson KV, Peters MJ, Esterman AJ, Veale AJ, Smith BJ. Superiority of a course of varenicline tartrate plus counselling over counselling alone for smoking cessation: A 12-month randomised controlled trial for inpatients. *Australians Society for Medical Research Annual Scientific Meeting*, Adelaide June 3 at the National Wine Centre (***Award winning oral ‘Ross Wishart Memorial Award for best presentation at the Australian Society of Medical Research conference’***)
13. Carson KV, Brinn MP, To-A-Nan R, Jayasinghe H, Mackenzie L, Medley G, Liu X, Esterman AJ, Roberts M, Smith BJ. Can nicotine replacement therapy delivered via continuous patch cause auto-induction (up-regulation of receptors)?: A pilot study. *TSANZ April 2015, Gold Coast, Queensland* (***Award winning oral ‘The Tobacco Control Prize’ for the best oral presentation***)
14. Carson KV, To-A-Nan R, Robertson M, King C, Smith BJ. Community pharmacy personnel interventions for smoking cessation: A Cochrane systematic review and meta-analysis. *TSANZ April 2015, Gold Coast, Queensland*
15. Carson KV, Jayasinghe HP, Ali A, Singh K, Peters M, Esterman AJ, Gould G, Veale A, Newchurch J, Smith BJ. Culturally-tailored interventions for smoking cessation in Indigenous populations: A Cochrane systematic review and meta-analysis. *TSANZ April 2015, Gold Coast, Queensland* (***Awarded ‘Best oral presentation for the TSANZ Evidence Based Medicine Special Interest Group’***)
16. Carson KV. Barriers and enablers for the use of smoking cessation pharmacotherapy in Aboriginal and Torres Strait Islander populations: A qualitative analysis. *TQEH (The Queen Elizabeth Hospital), Basil Hetzel Institute for Translational Health Research: Research Day Conference* Adelaide, October 2014
17. Carson KV, Peters M, Esterman AJ, Veale A, Brinn MP, Bradley H, Newchurch J, Meagher S, Smith BJ. Barriers and enablers to the use of smoking cessation pharmacotherapy in Aboriginal and Torres Strait Islander populations: A qualitative analysis. *Thoracic Society of Australia and New Zealand, April 2014, Adelaide* (***Award winning abstract – Selected for the TSANZ Janet Elder International Travel Award***)

18. Hnin K, Carson KV, Brinn MP, Jannes J, Esterman AJ, Smith BJ. Triggers resulting in relapse: Cohort analysis from the Smoking Termination Opportunity for inpatients (STOP) trial. *Thoracic Society of Australia and New Zealand, April 2014, Adelaide*
19. Carson KV, Peters M, Esterman AJ, Veale A, Brinn MP, Bradley H, Newchurch J, Meagher S, Smith BJ. Respiratory health service delivery and utilisation by Aboriginal and Torres Strait Islander Australians: A qualitative analysis of the barriers and enablers to optimal medical management. *Thoracic Society of Australia and New Zealand, April 2014, Adelaide*
20. Carson KV, Labiszewski NA, Brinn MP, Peters M, Chang A, Veale A, Esterman A, Smith BJ. Interventions for tobacco prevention in Indigenous youth: A Cochrane review and a narrative synthesis. *Thoracic Society of Australia and New Zealand, March 2013, Darwin*
21. Dalziel K, Brinn M, Carson K, Labiszewski N, Esterman A, Smith B. Cost effectiveness of an inpatient smoking cessation intervention for patients with tobacco related illnesses (STOP trial): A multi-centre randomised controlled study. *Health Services Research Association of New Zealand. Wellington New Zealand, December 2013*
22. Carson KV. Interventions for tobacco prevention in Indigenous youth: A Cochrane review and narrative synthesis. *TQEH (The Queen Elizabeth Hospital), Basil Hetzel Institute for Translational Health Research: Research Day Conference Adelaide, October 2013*
23. Brinn MP, Dalziel K, Carson KV, Labiszewski NA, Esterman AJ, Smith BJ. Cost effectiveness of an inpatient smoking cessation intervention for patients with tobacco related illnesses (STOP Trial): A multi-centre RCT. *Thoracic Society of Australia and New Zealand, March 2013, Darwin (Award winning oral 'The Tobacco Control Prize' for the best oral presentation)*
24. Smith BJ, Carson KV, Brinn MP, Labiszewski NA, Peters MJ, Fitridge RA, Litt JC, Koblar SA, Jannes J, Veale AJ, Goldsworthy SJ, Edwards D, Esterman AJ. Superiority of varenicline tartrate plus counselling over counselling alone for

smoking cessation: A 52 week randomized controlled trial. ATS May 2012, San Francisco, California

(NOTE: Of all abstracts submitted for the 2012 ATS, this research was one of only seven selected for an oral presentation in the 'Late breaking clinical trials' session, chaired by Dr David Hau, Chair of the International Conference Committee (ATS International conference 'Highlights for Clinicians'))

25. Carson KV, Verbiest MEA, Brinn MP, Crone MR, Esterman AJ, Assendelft WJJ, Smith BJ. Training health professionals in smoking cessation: A Cochrane Systematic Review. *Thoracic Society of Australia and New Zealand*, March 2012, Canberra
26. Carson KV, Brinn MP, Labiszewski NA, Peters MJ, Veale AJ, Smith BJ. Interventions for smoking cessation in Indigenous populations: A meta-analysis. *TQEH (The Queen Elizabeth Hospital), Basil Hetzel Institute for Translational Health Research: Research Day Conference Adelaide*, October 2011

Poster conference presentations:

27. Carson KV, Jayasinghe H, Pollok J, Singh K, Peters MJ, Veale A, Van Agteren J, Esterman AJ, Smith BJ. Smoking cessation pharmacotherapy: An underutilised quit smoking resource for Aboriginal and Torres Strait Islander Australians. *Oceania Tobacco Control Conference, Perth, Australia, 20th to the 22nd of October 2015*
28. Carson KV, Jayasinghe H, Peters MJ, Esterman AJ, Veale AJ, Smith BJ. Barriers and enablers for use of smoking cessation pharmacotherapy for tobacco addiction among Aboriginal and Torres Strait Islander Australians: A mixed method analysis. *The University of Adelaide, Faculty of Health Sciences Post-graduate research conference: National Wine Centre, Adelaide, August 2015*
29. Carson KV, Jayasinghe HP, Peters MJ, Esterman AJ, Veale A, Brinn MP, Bradley H, Newchurch J, Smith BJ. Barriers and enablers for the use of smoking cessation pharmacotherapy in Aboriginal and Torres Strait Islander populations: A

qualitative analysis. *Postgraduate Research Conference; National Wine Centre, September 2014, Adelaide*

30. Carson KV, Brinn MP, Peters M, Veale A, Esterman AJ, Smith BJ. Interventions for tobacco use cessation in Indigenous populations: A Cochrane meta-analysis. 2014 May. *American Thoracic Society Conference* San Diego, California, United States of America
31. Carson KV, Peters M, Esterman AJ, Veale A, Brinn MP, Clifton V, Bradley H, Newchurch J, Meagher S, Smith BJ. Smoking during pregnancy and tobacco abuse prevention in Aboriginal and Torres Strait Islander youth: A qualitative analysis. *Thoracic Society of Australia and New Zealand, April 2014, Adelaide*
32. Carson KV, Brinn MP, Peters MJ, Veale A, Esterman AJ, Smith BJ. Interventions for tobacco use prevention in Indigenous youth: A Cochrane review and a narrative synthesis. *Postgraduate Research Conference; National Wine Centre, August 2013, Adelaide*
33. Carson KV, Brinn MP, Labiszewski NA, Peters MJ, Veale AJ, Smith BJ. Interventions for smoking cessation in Indigenous populations: A meta-analysis. The University of Adelaide, Faculty of Health Sciences Post-graduate research conference: National Wine Centre, Adelaide, August 2011

Other (non-conference) ‘keynote’ oral presentations:

34. Carson KV. Invited Plenary Speaker for The Queen Elizabeth Hospital Grand Rounds for the 1st of September 2015 about the Indigenous tobacco research undertaken during the PhD; Invited by Professor John Beltrame, Michell Professor of Medicine, 45 minute presentation to approximately 100 clinicians, scientists, doctors, trainees and allied health professionals
35. Carson KV, with Gill Hicks, John Swann and Vince Coulthard as representatives of the South Australian, Australian of the Year national finalists. A tour of honour is scheduled for June 2015, which will include multiple presentations across three days in schools and other forums around South Australian including inner regional Australia (Yorke Peninsula).

36. Carson KV. Invited speaker for the Playford Trust Networking Evening; Spoke about my journey to becoming a scientist and how to network in a scientific research setting (14/05/2015) at The Queen's Head Hotel, North Adelaide
37. Carson KV. Keynote speaker for the City of Marion Youth Recognition Awards as part of National Youth Week; Spoke about my journey to becoming a scientist, the research that I do and positive messages for young people (13/04/2015)
38. Carson KV. 'My journey to becoming a scientist'; *University of South Australia Golden Key new member reception* as Honorary Member and Keynote speaker for the Golden Key International Honour Society (Uni SA chapter) at Brookman Hall, UniSA City East Campus (approx. 500 people;)
39. Carson KV (Young Australian of the Year for SA), with Gill Hicks (Australian of the Year for SA), John Swan (Senior Australian of the Year for SA) and Vince Coulthard (SA Local Hero) invited for a corporate Panel Discussion hosted by Brand South Australia with ABC radio personality Ian Henschke as the MC. Each of us spoke about our journey to becoming SA Australian of the Year representatives, what we do now and what we plan on doing next (50 minutes; 17/02/2015; Adelaide Convention Centre; approx. 250 guests)
40. Carson KV, Special Guest Speaker for the Ocean View College Year 12 Graduation Ceremony to talk about my journey since leaving year 12 and how I became a scientist. 6th of August 2014 (20 minute oral to graduates, teachers and student's family/friends – approximately 250 people; 09/12/2014).
41. Carson KV, Special Guest Speaker for the Kildare College Annual Awards Ceremony to encourage young women into science about to talk about my journey to becoming a scientist. 6th of August 2014 (15 minute oral to the entire school assembly).
42. Carson KV, Special Guest Speaker for the Morphett Vale East Primary School Year 7 Graduation Ceremony to talk about my journey from school to becoming a scientist. 6th of August 2014 (10 minute oral to graduates, teachers and student's family/friends – approximately 400 people; 14/11/2014)

Other (non-conference) invited oral presentations:

43. Carson KV, Invited Plenary Speaker for The Queen Elizabeth Hospital Ground Rounds, September 2015 by Prof John F Beltrame (Michell Professor of Medicine, The University of Adelaide), related to PhD Indigenous research, with a specific focus on the clinical aspects of evidence translation (approximately 100 professors, doctors, registrars, interns, medical students and other allied health professionals; 45 minutes)
44. Carson KV, Special Guest Speaker for the Asthma Foundation of South Australia to speak about my journey to becoming a scientist and the work being done at The Queen Elizabeth Hospital, particularly related to smoking and Aboriginal health as per my PhD. Invited by David Bedson, CEO of Asthma Foundation South Australia (13/05/2015); Presented at the Asthma Foundation, South Road, Hilton in the presence of the CEO for Asthma Foundation Australia, Mark Brooke
45. Carson KV, Special Guest Speaker for the Rotary Club of Adelaide Light where I spoke about becoming a scientist and winning the Young Australian of the Year for South Australia as well as a brief showcase of research activities from my work at TQEH (approximately 40 people; 05/03/2015)
46. Carson KV, Special Guest Speaker for the Rotaract Club of Adelaide (youth chapter of Rotary) where I spoke about becoming a scientist and winning the Young Australian of the Year for South Australia as well as a brief showcase of research activities from my work at TQEH (approximately 30 people; 09/02/2015)
47. Carson KV, Special Guest Speaker for the Rotary Club of Prospect (45 minutes) where I spoke about how I became the Premier's and Channel 9 Young Achiever of the Year and gave a summary of the research being undertaken at The Queen Elizabeth Hospital in Respiratory Medicine (Approximately 35 people; 05/11/2014)
48. Carson KV, Special Guest Speaker for Lung Foundation Australia '2014 Lung Health Education Day' at AAMI Stadium on 'How do we know this treatment

works? Information for patients (consumers) needs to be a 2-way process' (Approximately 60 people; 30/10/2014)

49. Carson KV. Launch of the Premier's Channel 9 Young Achiever of the Year for 2015. Invited to give a speech relating to winning the 2014 overall award and the achievements within the last six months since winning the award at Ri Aus, Adelaide City Centre (16/09/2014)
50. Carson KV, 'I almost failed year 12 but look who's a scientist now'; invited speaker for the Science Alive Careers Day at the Adelaide Show Grounds by Ian Maynard
51. Carson KV, 'The importance of networking and how to become an academic Kardashian' 1st of August 2014; Invited guest speaker for the Early Career Research Career Development Session for PhD students in Marketing, Management and International Business, The University of Adelaide, School of Engineering; (40 minute oral presentation and 20 minute Q+A panel session)
52. Carson KV, 'Networking through a PhD' 3rd of June 2014; One of three guest speakers invited by The Australian Society of Medical Research in collaboration with Healthy Development Adelaide for a paid dinner presentation evening held at the University of South Australia, North Terrace (20 minute presentation)
53. Carson KV, 'A research overview from the Respiratory Medicine Department, TQEH: The good, the bad and the breathless', 13th of May 2014; Invited by Prof Alastair Burt, Dean of Medicine, Head of the School of Medicine, The University of Adelaide for the Research Highlights session at the University (20 minute presentation + 10 minute discussion time)
54. Carson KV, 'Tobacco use, cessation and prevention: Current evidence for practice and research initiatives' Repatriation General Hospital, 28th of June 2013; Invited by Dr Nick Antic and Dr Staya Mysore for the Adelaide Institute of Sleep Health (45 minute presentation)
55. Carson KV, 'Research, capacity building and clinical practice improvement initiatives', Flinders University 25th of June 2013; Invited by Dr Dimitar Sajkov

(CEO Australian Respiratory and Sleep Medicine Institute and Director Southern sleep) for the Southern Respiratory Services Academic Meeting (40 minute presentation)

56. Carson KV, 'Improving health for Aboriginal people through tobacco related research'; Nunkuwarrin Yunti Health Service Wakefield Street, April 2013; Invited by Aboriginal Health Council of South Australia tackling smoking co-ordinator (1 hour presentation)
57. Carson KV, Current evidence for smoking cessation and tobacco prevention; 12th of July 2012, Aboriginal Health Council of South Australia, invited by Ruth Miller (tackling smoking co-ordinator); Also discussed current research we are doing and asked advice from the Elders present (approximately 15 Elders; 30 minute presentation)
58. Carson KV, 'The Clinical Practice Unit: Research, capacity building and clinical practice improvement initiatives' Lyell McEwin Health Service, Grand Round; July 2012; Invited by Professor Brian Smith, Director of Respiratory Medicine, The Lyell McEwin Health Service (10 minutes)

Other oral presentations:

59. Carson KV. Advancing treatment options for tobacco cessation, prevention and related illnesses, with particular reference to Indigenous populations and Aboriginal Australians. Post-graduate final presentation for the University of Adelaide. *Basil Hetzel Institute for Translational Health Research (30 minutes)* Adelaide, July 7th 2015
60. Carson KV. Advancing the understanding of tobacco use, prevention, cessation and related illnesses in Indigenous populations, with particular reference to Aboriginal Australians. Post-graduate annual presentation for the University of Adelaide. *Basil Hetzel Institute for Translational Health Research (20 minutes)* Adelaide, September 2014

61. Carson KV. Advancing the understanding of tobacco use, prevention, cessation and related illnesses in Indigenous populations, with particular reference to Aboriginal Australians. Post-graduate annual presentation for the University of Adelaide. *Basil Hetzel Institute for Translational Health Research (20 minutes)* Adelaide, October 2013
62. Carson KV. \$1.6 billion... up in smoke. Written application, publication and voice recording accepted as 1 of 8 finalists for the South Australian Young Investigator Award, Adelaide, Women's and Children's Hospital, Queen Victoria Lecture Theatre, September 2013 (5 minutes + question time)
63. Carson KV. Aboriginal health research at The Queen Elizabeth Hospital. *Aboriginal Health Research Network Meeting (5 minutes)* Cottage A, 223 Angus St Adelaide, August 2013
64. Carson KV. Research and capacity building in Respiratory Medicine: The role of the CPU. *The Queen Elizabeth Hospital Respiratory Medicine Business Meeting (20 minute)*; Adelaide, September 2013
65. Carson KV. \$1.6 billion... up in smoke. Oral presenter for the University of Adelaide's Three Minute Thesis Faculty of Health Sciences Final; The University of Adelaide, Hone Lecture Theatre, July 2013
66. Carson KV, Labiszewski NA, Brinn MP, Peters M, Chang A, Veale A, Esterman A, Smith BJ. Interventions for tobacco prevention in Indigenous youth: A Cochrane review and a narrative synthesis. Abstract accepted as 1 of 4 finalists for the South Australian and Northern Territory TSANZ Young Investigator Award; Adelaide, Ayres House Nov 2012 (10 minute oral presentation) (**Award winning presentation – Recipient of the SA/NT TSANZ Young Investigator Award**)
67. Carson KV, Brinn MP, Labiszewski NA, Peters MJ, Veale AJ, Smith BJ. Interventions for smoking cessation and tobacco prevention in Indigenous populations: Post-graduate annual presentation for the University of Adelaide. *Basil Hetzel Institute for Translational Health Research (20 minutes)* Adelaide, May 2012

68. Carson KV, Brinn MP, Labiszewski NA, Peters MJ, Veale AJ, Smith BJ. Interventions for smoking cessation in Indigenous populations: A Cochrane meta-analysis. *The Queen Elizabeth Hospital Respiratory Medicine Business Meeting (20 minute)*; Adelaide, April 2012
69. Carson KV, Brinn MP, Labiszewski NA, Peters MJ, Veale AJ, Smith BJ. Interventions for smoking cessation and tobacco prevention in Indigenous populations: Core components for post-graduate studies for the University of Adelaide. *Basil Hetzel Institute for Translational Health Research (20 minutes)* Adelaide, July 2011
70. Carson KV. Tobacco use cessation for Indigenous populations. Abstract accepted as 1 of 5 finalists for the South Australian and Northern Territory TSANZ Young Investigator Award; Adelaide, Ayres House Oct 2011 (10 minute oral presentation + 5 minutes for questions)

Membership of committees and working parties associated with the PhD

- 2015-Present TSANZ: Elected Primary Chairperson of the Evidence Based Medicine Special Interest Group at the Gold Coast ASM
- 2015-Present Advisory board member for “Kick.it” smoking cessation application for android and mobile phones that connects with the Apple watch; The apple watch connected with the phone tracks cigarettes, cravings and suggests different interventions/techniques to help patients get through the craving and quit smoking
- 2013-2015 TSANZ: Elected Primary Chairperson of the Tobacco and Addictive Substances Special Interest Group at the Darwin ASM
- 2013-Present Member of the National Aboriginal and Torres Strait Islander Social Survey Reference Group for the Australian Bureau of Statistics
- 2013-Present Member of the SA Health Young Professionals Group
- 2013-Present Member of the SA Aboriginal Health Research Network
- 2013-Present Research member of Healthy Development Adelaide (The University of Adelaide)
- 2012-present Founding member of the ‘Indigenous Respiratory Health Working Party’ for the ‘Thoracic Society of Australia and New Zealand’ supported by the society and the current President of the TSANZ: Professor Matthew Peters and Chief Executive Officer of the TSANZ: Rita Perkins (Became recognised as an official research branch within the TSANZ in 2013)
- 2012-2013 TSANZ: Elected Deputy Convenor of the Tobacco and Addictive Substances Special Interest Group at the Canberra ASM
- 2011-Present Invited member of the Aboriginal and Torres Strait Islander Health working party
- 2010-Present Voting member of the Tobacco and Addictive Substances and Evidence Based Medicine Special interest groups of the Thoracic Society of Australia and New Zealand

- 2010-Present Invited member of The Central Northern Adelaide Health Service Smoke Free policy steering committee
- 2009-Present Invited member of The Queen Elizabeth Hospital Smoke Free policy steering committee

Summary

Despite the substantial progress made over the past decade, tobacco use is still a leading cause of preventable morbidity and premature mortality in the world. This thesis examined how to improve the uptake and success of smoking cessation and tobacco prevention interventions among some of the most prevalent tobacco users in Australia, being Indigenous populations and long-term tobacco users who have already developed tobacco-related illnesses.

Although mainstream tobacco cessation programs have reduced population-level smoking, they have done little to close the gap between Indigenous and non-Indigenous populations. Therefore options specifically tailored for the Indigenous setting need to be considered. A meta-analysis of four culturally-tailored smoking cessation interventions in Indigenous populations (*Chapter 4*) produced some limited evidence of efficacy in favour of the interventions ($p=0.03$). Likewise, a similar evaluation for youth tobacco prevention found only two studies, limiting the ability to draw reliable conclusions (*Chapter 5*).

Building on these findings, qualitative studies of Aboriginal Elders, key community stakeholders and health professionals revealed several barriers and facilitators for smoking cessation pharmacotherapy amongst Aboriginal Australian populations (*Chapter 6*). A national survey of current practice by Respiratory doctors and allied health professionals found similar results (*Chapter 7*). Finally a commissioned systematic literature review, found that combined pharmacotherapy and culturally-adapted interventions are effective in reducing tobacco prevalence (*Chapter 8*). Research in the Indigenous setting often poses methodological challenges, but options are available to overcome these problems (*Chapter 9*).

Several pharmacotherapeutic options are available to aid long-term abstinence including varenicline tartrate, bupropion hydrochloride and nicotine replacement therapy (*Chapter 10*). However, amongst some populations where attitudes of nihilism and clinical indifference are common, the benefits of tobacco cessation are not considered worth the effort it would take to quit. Smoking cessation can result in improved treatment outcomes amongst lung cancer patients (*Chapter 11*) and quitting in later life can still reduce the risk of developing some smoking-related illnesses (*Chapter 12*).

Following hospitalisation of current smokers due to a serious tobacco-related illness, a randomised controlled trial found varenicline tartrate plus Quitline counselling to be superior to Quitline counselling alone with 31.1% (n=61) and 21.4% (n=42) continuously abstinent respectively at 12-month follow-up (*Chapter 13*). Despite safety concerns of increased cardiovascular and neuropsychological events in acutely unwell people, none were identified amongst the 392 subjects recruited into the trial (*Chapter 14*).

Finally a third Cochrane meta-analysis (*Chapter 15*) revealed that patients of health professionals trained in smoking cessation techniques were more likely to achieve smoking abstinence (p=0.03) compared to untrained health professionals.

The evidence produced in this thesis suggests that with appropriate training and resources, health professionals working in Indigenous populations can facilitate smoking cessation and reduce the uptake of smoking. Translational research is needed to explore the most effective ways to achieve these outcomes and bridge the gap between resource development and implementation into policy and practice. Until a greater focus is placed on evidence translation, we cannot effectively advance treatment options for tobacco cessation, prevent uptake amongst youth and ultimately avoid tobacco-related illnesses.