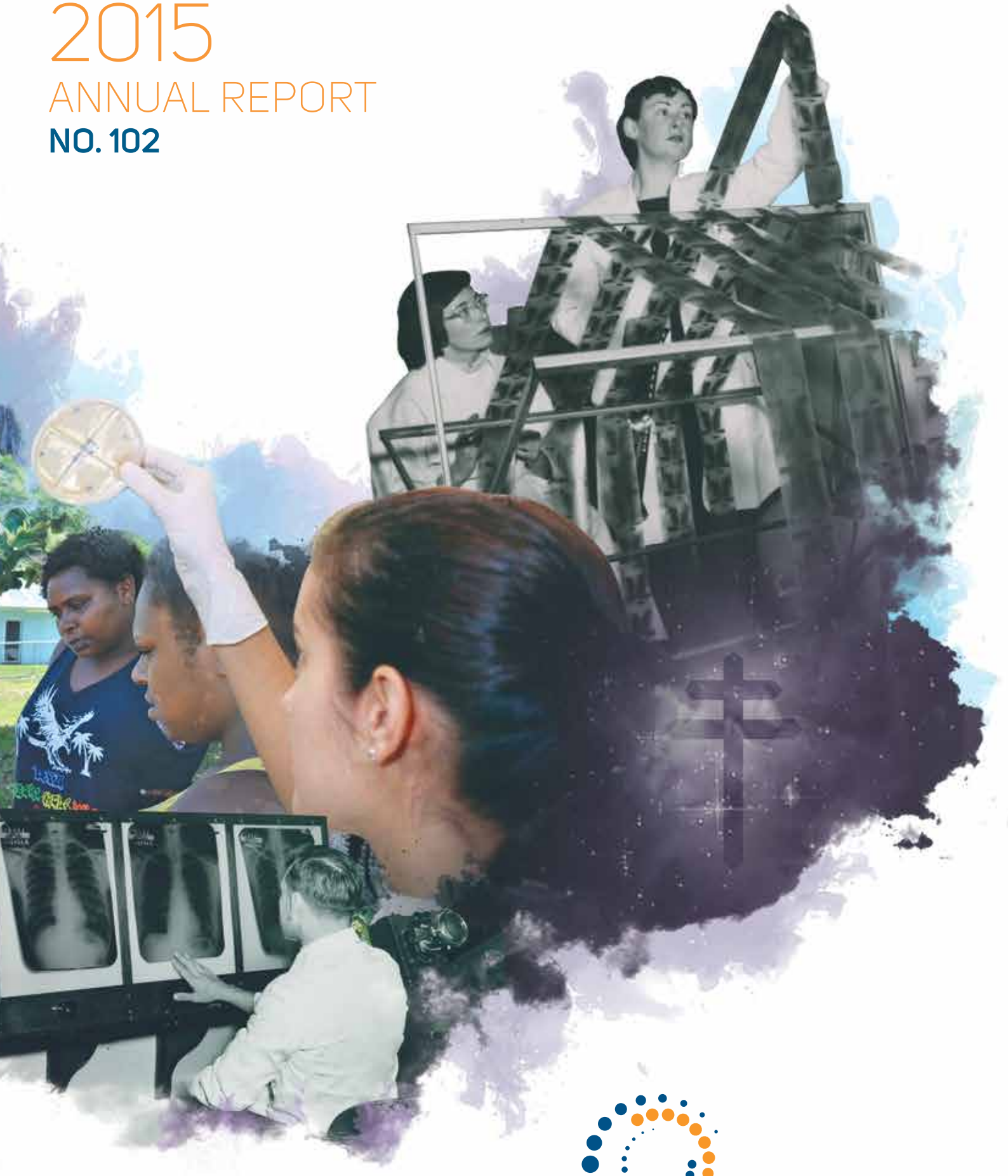
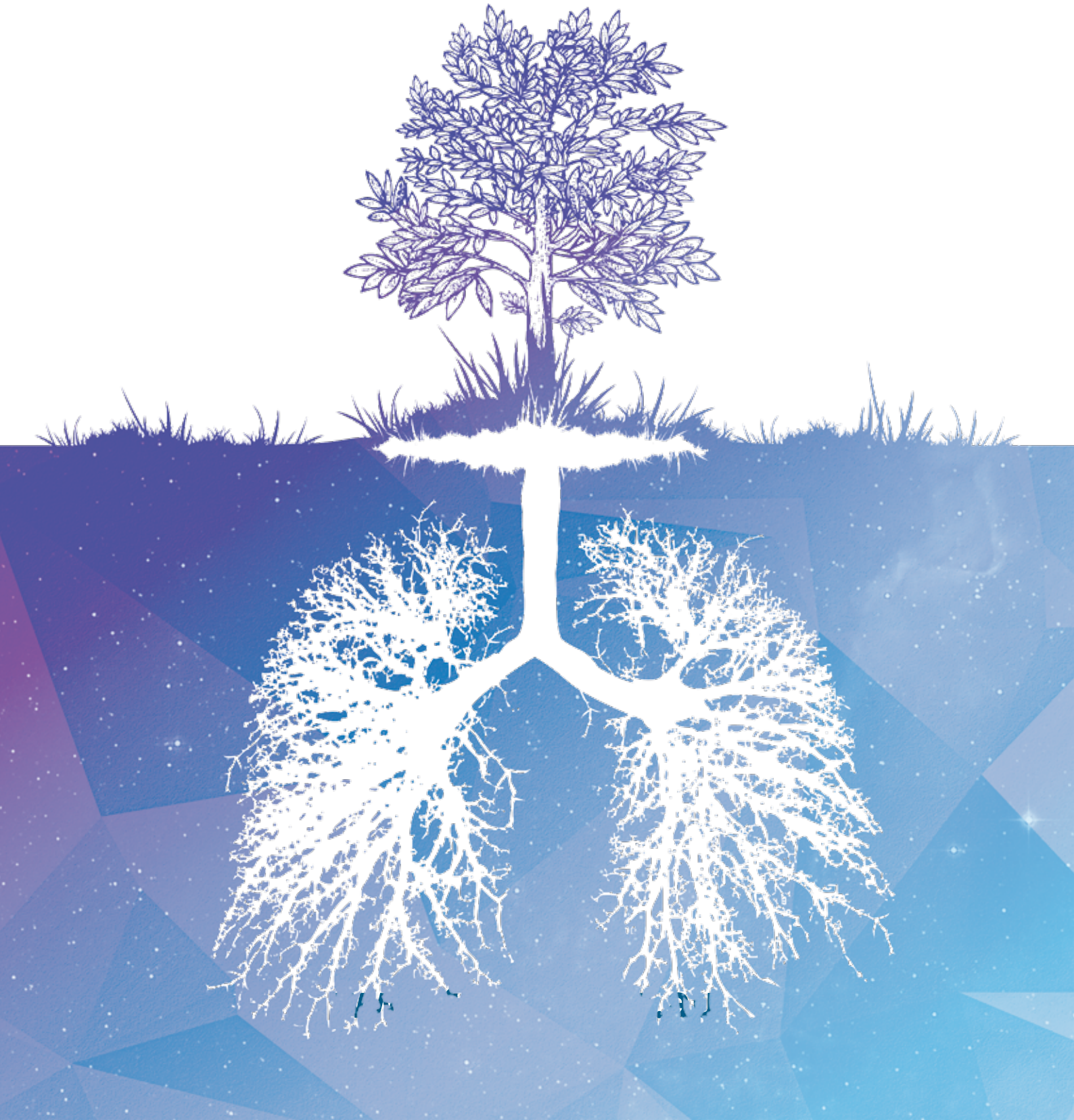
2015
ANNUAL REPORT
NO. 102



arc
australian respiratory council
prevention and cure of respiratory illness



australian respiratory council
prevention and cure of respiratory illness

Our Mission

A global community with universal and high quality management of respiratory diseases.

Our Vision

ARC is a Charitable, Non-Government Organisation that continues to build expertise and sustainable capacity in respiratory health by:

- Fostering innovative research to promote respiratory health
- Improving lung health in communities with an emphasis on disadvantaged groups and Indigenous people
- Actively seeking sustainable solutions through partnerships with like organisations such as the Australian Lung Health Alliance, World Health Organisation, the Stop TB Partnership, Secretariat of the Pacific Community and the US Centers for Disease Control and Prevention
- Bringing focus to and investment in TB and respiratory health
- Respecting relationships with and the contributions of stakeholders and staff.

Our Patrons

His Excellency General The Honourable David Hurley AC DSC (Ret'd)
Governor of New South Wales and Mrs Linda Hurley

ARC confirms that in the pursuit of its mission and vision it has no tobacco exposure in regard to direct stocks or managed funds exposures held within its' Investment Portfolio.

ARC welcomes feedback. Please send any feedback or complaints to arc@thearc.org.au or write to the Executive Director, Australian Respiratory Council, GPO Box 102 Sydney, NSW 2001.

ARC confirms its commitment to full adherence to the ACFID Code of Conduct. Complaints relating to a breach of the ACFID Code can be made to the ACFID Code of Conduct Committee www.acfid.asn.au

Australian Council For International Development

Australian Respiratory Council (ARC) is a member of the Australian Council for International Development (ACFID) and is a signatory to the ACFID Code of Conduct. The Code requires members to meet high standards of corporate governance, public accountability and financial management.

The Union
International Union Against Tuberculosis and Lung Disease
Health solutions for the poor

Australian Respiratory Council (ARC) is a Constituent Member of the International Union Against Tuberculosis and Lung Disease (IUATLD). The mission of the Union is to bring innovation, expertise, solutions and support to address health challenges in low and middle income populations.

PRESIDENT'S REPORT

I am pleased to report on the activities and outcomes of the Australian Respiratory Council (ARC) in 2015. From this report you will see that there has been a significant amount of work undertaken by our organisation over the past twelve months.

5th Conference of The Union Asia Pacific Region, 2015

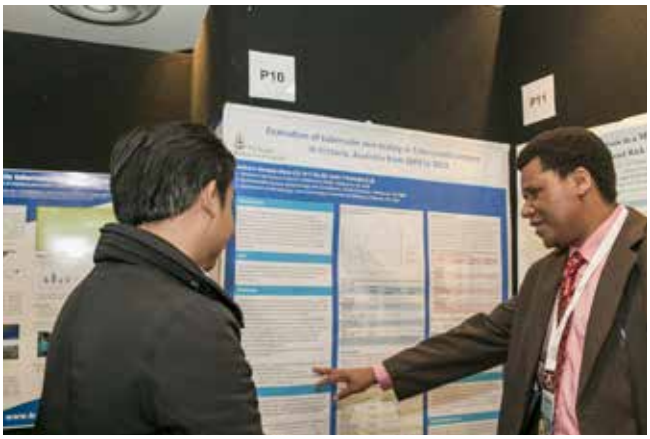
This year, ARC had the honor of hosting the 5th Conference of The Union Asia Pacific Region. The conference was held in Sydney from the 30th August to the 2nd September, 2015.

The conference showcased up-to-date information and featured many of our Region's leading researchers, academics and clinicians. The conference program reflected the areas of The Union's work in tuberculosis (TB), non-communicable diseases, TB/HIV, tobacco control and lung health and sought to inspire solutions for the pressing challenges for the future management of TB and respiratory disorders in our neighbouring countries.

The scientific program encompassed the domains of research, technical assistance and advocacy, to raise the profile of global health issues in general and focus the attention of regional governments and other key regional participants on the problems of TB, other lung diseases, tobacco control and non-communicable diseases among the poor within our Region.

I am pleased to report that the conference was a great success thanks to the contribution of the Organising and Scientific Committees that were formed to support the conference, the expert guidance of Professor Guy Marks as Chair of the Scientific Committee and the significant contribution of ARC's Directors and staff.

A detailed report on the conference is included on pages 23 to 25 in this report.



Finances

Once again in 2015, our Finance team led by Robert Horsell OAM and supported by Peter Gianoutsos, Robyn Johnson, David Macintosh AM and the staff of the ARC worked to ensure the wise investment and continuation of funding for operational, research and project activities. I would like to acknowledge the diligence and commitment of the Finance team, your work and commitment is greatly appreciated.

In summary, ARC achieved a profit of $14,668 in 2015 (compared to a loss of $124,250 in 2014). This profit has been achieved due to the revaluation figure of $339,000 for ARC's O'Connell Street property. In 2015, ARC had an operational loss of $228,208 (against a projected loss of $302,860) and an asset revaluation loss of $96,124 (compared to a profit of $16,953 in 2014). Further information on ARC's financial statements are detailed on pages 36 to 52 in this report.

Solomon Islands Project

I am pleased to report that the project "Supporting TB treatment supporters Solomon's style" worked with women and other key people in East Kwaio, Solomon Islands to explore practical issues for TB treatment supporters.

Women play an integral role in health of families in many settings and especially in the East Kwaio District of the Solomon Islands. It is important to understand more about the issues that women face in supporting their family members on TB treatment. Within East Kwaio women are diagnosed with TB less frequently than men. This project explored the barriers to access to diagnosis and treatment for women. Using this information the project developed resources that promote practical ways for women and community leaders to support family members on treatment for TB.

The project built on previous work with health workers and community leaders using traditional Solomon Islands oral story telling models of consultation and communication.

A more detailed report has been provided by Dr Peter Massey on pages 17 and 18 of this report.

Building health system research capacity in Vietnam, Cambodia and Laos

In 2015, ARC funded for the fifth year the Methods in Clinical and Operational Research (MECOR) Program. The MECOR Program led by Professor Guy Marks was held in Southern Vietnam in March, 2015. Participants from Vietnam, Cambodia and Laos attended the course.

This project involves a partnership approach between the Ministry of Health and National TB Programs in each of these countries, the Woolcock Institute, the American Thoracic Society, Vietnam Lung Association against Tuberculosis and Lung Diseases and the Vietnam National Lung Hospital.

The primary objective of the MECOR project is to develop capacity in future leaders in respiratory public health. This capacity will include the ability to interpret and use published evidence to guide policy development and disease management and generate research ideas and to design and implement studies to investigate these ideas.

A more detailed report has been provided by Professor Marks on pages 15 and 16 of this report.

ARC Nurse Consultants activities within the Region

Work continues by ARC's Nurse Consultant Group in the provision of training and technical support, clinical mentoring, the development of educational tools and resources for nurses and related workers within the Pacific Island Countries and Territories. This work is undertaken in collaboration with the US Center for Disease Control and Prevention and program staff from the respective countries and territories.

I would like to thank ARC's Nurse Consultant Group; Pam Banner, Kerrie Shaw and Amanda Christensen for their ongoing commitment to provide technical support, mentoring and capacity building for the Pacific Island Countries and Territories.

A more detailed report on the work of ARC Nurse Consultant's Group is provided on pages 19 to 21, and 28 of this report.

Nursing education

The ARC has a long history of working in the field of TB prevention and care, dating back to the early 1900s. Much of this work has involved efforts directed towards education and capacity building of health care workers (including nurses). This work has been carried out in both domestic and international settings.

In parallel, and over the last ten years, Australian based TB nurses have voiced their concerns about a lack of TB nursing education in Australia and the future development of the TB nursing workforce. These concerns have focused on the need to maintain a skilled nursing workforce for TB prevention and care in Australia. An additional concern has been the need to ensure recruitment, training and retention of nurses to work in the Australian TB Program.

Recognising the need to address these critical workforce issues, ARC funded a project this year to establish a framework for education of TB Nurses in Australia. The project was the first of its kind in Australia and was designed to review and document the current Australian TB nursing workforce, assess national and international educational frameworks for nursing education and identify a framework to promote a structured and recognised approach to education for Australian TB Nurses.

A detailed report on this project is provided on pages 19 to 21 of this report.

Research activities

I am pleased to advise that ARC is committed to continue funding of research activities in TB and respiratory disease. In 2015, funding of $100,000 was awarded under the Harry Windsor Research Grant Scheme.

The first grant was awarded to Associate Professor Brian Oliver from the Woolcock Institute and University of Technology, Sydney. Associate Professor Oliver's research project was on "Understanding the aetiology of small airway fibrosis in COPD". The second research grant was awarded to Associate Professor Harin Karunajeewa from the Walter

PRESIDENT'S REPORT

and Eliza Hall Institute, Victoria. Associate Professor Karunajeewa's research project was on "Getting the dose right in Tuberculosis: Pharmacokinetics to improve outcomes in Tuberculosis".

Also this year, ARC is able to continue funding the research project titled Australia's Lyme-Like Illness: a focus on north-eastern NSW and south-eastern Queensland as a result of a donation provided by the Twin Towns Services Community Foundation Limited. Tick-borne diseases are among the fastest growing vector-borne infectious diseases and affect millions of people globally. Tick bites in Australia, particularly from the paralysis tick are increasingly causing concern, mainly due to possible infection and acute allergic reactions following tick bites, occasionally requiring hospitalisation. This research project is aiming to identify the causative agent of the Lyme-like illness and further to develop sensitive and specific diagnostic tests to detect Australians with the illness.

A detailed report on these research projects are included in the annual report on pages 10 to 14.

Acknowledgement and thanks

A continued strength of the ARC is the contribution that our Directors each make. Without the individual contributions that each person brings, the success of our organisation would not be so great. I extend my personal thanks to each Director in this regard. This was particularly evident this year in the support for and work associated with the 5th Conference of The Union Asia Pacific Region provided by Robert Horsell, Robyn Johnson and Iven Young.

Thank you to the staff of ARC, Amanda Christensen, Judy Begnell and Miranda Juhl for your commitment and enthusiasm to the work of our organisation over the past year. I particularly acknowledge the significant contribution made by Amanda and Judy to the success of the 5th Conference of The Union Asia Pacific Region. The ARC Board of Directors recognise and appreciate the amount of additional work that was required to manage and deliver the conference.

On behalf of Professor Iven Young, Chair of ARC's Research Committee. I would like to acknowledge the contribution of the Research Committee, thank you for your support and time in assisting ARC to achieve our research goals.

This year, ARC's volunteer Audrey Tonkin retired. Audrey has been a volunteer with ARC for the past eight years and provided a valuable contribution to our organisation. We wish Audrey well in her retirement. In addition, my thanks and those of the Board are extended to Heath McLaren and his team at Macquarie Bank for their financial guidance in 2015 and to David Conroy and Roy Chong for their expertise and assistance in meeting our annual auditing responsibilities.

Finally, I extend my sincere thanks and gratitude to ARC's donors without whom we would not be able to continue our work. The loyalty and generosity of our donors, many of whom have been supporting our work for many years is greatly valued by everyone involved with our organisation as well as the recipients of our research and project funding. I hope through this report, our publications and website that you can learn about how your donations contribute to respiratory health and the work of ARC.

The year ahead

In 2016, through the Harry Windsor Research Grant Scheme ARC will support three research projects. The first grant has been awarded to Professor Ian Yang from the University of Queensland. Professor Yang will undertake a research project on "Using the lung microbiome to predict response to continuous antibiotics". The second research grant has been awarded to Laureate Professor Paul Foster from the University of Newcastle. Professor Foster's research project is on "Understanding the role of the newly discovered CD4 T helper (Th)-22 cell subset in models of respiratory infection and inflammation". The final grant was awarded to Dr Graeme Zosky from the University of Tasmania. Dr Zosky will undertake a research project on "Iron laden particulate matter enhances bacterial growth in the lung".

Continuing on the project work undertaken this year, ARC will fund a project to develop an educational framework for TB Nurses in Australia. The ARC Nurse Consultants Group will explore with potential training providers and collaborators including Universities, the World Health Organisation and the International Union Against Tuberculosis and Lung Disease the establishment of a post-graduate education pathway for Australian TB Nurses. The development of a dedicated training course acknowledges that TB nursing requires a unique skill set and creates opportunities for advanced training for nurses throughout Australia and the region.

My sincere thanks to the many people that will be involved with ARC in 2016. I look forward to my continued relationship with you all in the coming year.

Emeritus Professor J Paul Seale AM
MB BS, PhD, FRACP
President

PRESIDENTS AND LIFE GOVERNORS

The National Association for the Prevention and Cure of Consumption

Year	President
1913 - 1917	Sir Phillip Sydney Jones
1918 - 1922	Dr Frederick Sobieski Vladimir Zlotkowski
1922 - 1928	Hon. George Frederick Earp MLC
1929 - 1930	Thomas Ernest Rofe

Anti-Tuberculosis Association of NSW (from 1931)

Year	President
1931 - 1934	Thomas Ernest Rofe
1935 - 1941	William Grazebrook Layton CBE
1941 - 1942	Phillip Lazarus JP
1942 - 1944	Sir Ernest Thomas Fisk
1944 - 1953	Zade Lazarus
1954 - 1955	Hon. Justice Edward Parnell Kinsella CBE
1955 - 1959	Ebenezer Richard Bagery-Parker
1959 - 1960	Harold Bruce Gibson
1960 - 1967	Hon. Justice Edward Parnell Kinsella CBE
1967 - 1972	Professor Noel Desmond Martin AM

Community Health and Anti - Tuberculosis Association (from 1973)

Year	President
1973 - 1994	Professor Noel Desmond Martin AM
1995 - 1999	Professor Ann J Woolcock AO
1999 - 2000	Dr Gregory Joseph Stewart
2000 - 2001	David Hugh Macintosh AM

Community Health and Tuberculosis Australia (from 2001)

Year	President
2001 - 2006	David Hugh Macintosh AM

Australian Respiratory Council (from 2006)

Year	President
2006 - 2013	David Hugh Macintosh AM
2013 - Present	Emeritus Professor J. Paul Seale AM

Year	Life Governors
1932	Honourable George Frederick Earp MLC, CBE (C)
1934	Sir John Sulman
1934	Sir Kelso King and Lady King
1966	Sir Harry Wyatt Wunderly
1996	Dr Keith Wellington Hills Harris AM
2003	Professor Noel Desmond Martin AM
2003	Clinical Professor Iven Young
2003	Emeritus Professor Ian W Webster AO
2007	Emeritus Professor Charles Baldwin Kerr AM
2007	Emeritus Professor J. Paul Seale AM
2009	David Hugh Macintosh AM
2011	Amanda Christensen
2011	Professor Gavin Frost
2012	Robert Horsell OAM
2012	Clinical Associate Professor Peter Gianoutsos

GOVERNANCE

BOARD OF DIRECTORS

AMANDA CHRISTENSEN

Dip Nursing

NSW TB Program Manager 1997- 2013; various positions in public health for over twenty years including; clinical nurse consultant in public health Corrections Health Service and tuberculosis control for the NSW Ministry of Health. Appointed to the Board in 2001. Elected as a Life Governor in 2011. Employed as the ARC Executive Director from April 2008 to May 2009, April 2013 – Present. Elected as Treasurer for the Union Asia Pacific Region 2015 to 2019.

CLINICAL ASSOCIATE PROFESSOR PETER GIANOUTSOS

MB, ChB (Univ of Otago), FRACP, FCCP

Appointed Emeritus Consultant Physician RPAH, 1 January 2014; Senior Consultant Thoracic Physician (VMO) Dept of Thoracic Medicine RPAH 1971-2013; Member TSANZ, ATS, ACCP, BTS, ALF, MLS(NSW); Chairman RPA Medical Board 1989-1991; Member of Medical Board of NSW 1978-1982; Chairman UMPS Medical Expert Panel 2002 – 2007; Member of Board of Directors UMP 2000-2003. Appointed to the Board of ARC in 2006. Vice President 2008 - Present. Elected Life Governor of ARC in 2012.

ROBERT HORSELL OAM

CPA

Medal of the Order of Australia 2012; Proprietor, R E Horsell & Co Public Accountants 1978 - Present; Former Director, Cricket Australia 1997-2004, 2005- 2008; Former Chairman, Cricket NSW 1997-2008; Former Director, Bradman Foundation 1999-2005. Appointed to the Board of ARC in 1999; Chair of Finance Committee. Elected Life Governor of ARC in 2012.

ROBYN JOHNSON

GAICD

Executive Manager with more than 22 years of experience in the strategic management of organisations in the tourism and business events industry. Appointed to the board of ARC in 2012.

DAVID MACINTOSH AM

BBS (UTS), FCA

Member of the Order of Australia 2011, awarded National Medal for Service 2014, Chairman, The Macintosh Foundation, Macintosh Chair of Paediatric Respiratory Medicine - Endowed Chair 29 November 2005 in perpetuity; Founder since 2013 and Benefactor since 2007, Royal Alexandra Hospital for Children - The Children's Hospital at Westmead; Member of Board of Governors and Chairman of the Finance Committee, Woolcock Institute of Medical Research 2000-2011; Director, The Australian Lung Foundation 1994-2013; Managing Director, Paynter Dixon Construction Group 2001- Present; Director, Ainsworth Game Technology Limited 2013–2015. Director of numerous private companies; thirty five years of senior management and director level in the transport and construction industries in Australia and Europe; Chairman, actively involved in the Surf Life Saving movement for over forty nine years; Life Member, Long Reef Surf Life Saving Club Inc.; Distinguished Service Member and Chairman of the Expenditure Review Committee, Collaroy Surf Life Saving Club Inc. Appointed to the Board of ARC in 1997; President 2000-2013. Vice President 2013 - Present; Elected Life Governor of ARC in 2010.

IAN W. RAMSAY

LL.B (Syd.)

Solicitor, Supreme Court of NSW; General Manager and Board Director, WorkCover NSW (1988-1997); Chairman, Dust Disease Board of NSW (1988-1997); Member, National Occupational Health and Safety Commission (1988-1997); Chairman, Sporting Injuries Committee (1988-1997); Member, Joint Coal Board Health and Safety Trust (1993-1997). Appointed to the Board of ARC in November 2008 - 2011. Chair, of Centenary Celebration Committee. Reappointed to the Board of ARC in 2012.

EMERITUS PROFESSOR J PAUL SEALE AM

MB BS, PhD, FRACP

Member of the Order of Australia, 2014. Professor of Clinical Pharmacology, University of Sydney 1992-2014; Pro-Dean, Faculty of Medicine, University of Sydney 1997-2003; Consultant Physician, Royal Prince Alfred Hospital 1980-2013; Deputy Director, Woolcock Institute of Medical Research; Member 2003-2012, former member, Australasian Society for Clinical and Experimental Pharmacologists and Toxicologists; Past President, Thoracic Society of Australia and New Zealand; former Congress President, Asia Pacific Society of Respirology; former Chairman, NSW Therapeutics Advisory Group; former Chair TB Committee, Sydney South West Area Health Service; former Member of NSW Health TB Advisory Committee, Appointed to the Board of ARC in 1997; Vice-President 2003 - 2012. President 2013 - Present; Elected Life Governor of ARC in 2007.

RESEARCH COMMITTEE

KERRIE SHAW

Dip Nursing

TB Coordinator South Eastern Sydney Local Health District (Northern Sector) 2013 - Present; Executive Officer Australian Respiratory Council 2009-2013; Manager Department of Respiratory Medicine, TB Coordinator, TB and Respiratory Clinical Nurse Consultant 1998-2009; Asthma Coordinator and TB Clinical Nurse Specialist South Eastern Sydney and Illawarra Area Health Service (Southern Sector) 1992-1998; Chair and Program Secretary, Nurses and Allied Health Subsection International Union Against TB and Lung Disease 2009-2013; Appointed to the National Asthma Expert Advisory Group 2006; Appointed to the Board Asthma Educators Association (NSW) 1992 and Board Australian Asthma and Respiratory Educators Association 2006, Life Member 2011; Appointed to Board of ARC in 2013.

CLINICAL PROFESSOR IVEN YOUNG

BSc (Med), MB BS, PhD FRACP

Senior Physician, Department of Respiratory and Sleep Medicine, Royal Prince Alfred Hospital (RPAH) 1991- 2009; Visiting Medical Officer, RPAH 1979-1985; Senior Staff Specialist in Respiratory Medicine, RPAH 1985 - Present; Post Doctoral Fellow, University of California, San Diego 1976-1978; Research Fellow, University of Sydney 1974-1976; Respiratory Physician 1975 - Present; Member, Thoracic Society of Australia and New Zealand; Member, American Thoracic Society; Member, European Respiratory Society; Senior Examiner, Australian Medical Council 1997 - Present; elected to the Adult Medicine Division, Royal Australasian College of Physicians 2000-2001; Chairman, Division of Medicine, RPAH 2001-2009; Chair, Physicians Training Council, HETI 2010- Present. Appointed to the Board of ARC in 1998. Elected Life Governor of ARC in 2003. Chair of Research Committee.

Professor Carol Armour

Executive Director, Woolcock Institute of Medical Research
Professor of Pharmacology & Associate Dean (Career Development & Research), Sydney University.

Professor Judith Black AO

Research Adviser Health & Medical, Sydney University,
Woolcock Institute of Medical Research.

Professor Peter Gibson

Senior staff specialist & Director of Ambulatory Care & Sleep Medicine at the John Hunter Hospital, Conjoint Professor of Medicine in Faculty of Health, Newcastle University, Co-Director of the VIVA Programme, Hunter Medical Research Institute.

Emeritus Professor J. Paul Seale AM

ARC President (ex officio).

Clinical Professor Iven Young (Chair)

Chair, Physicians Training Council.

Dr Greg Fox

Senior Lecturer in Respiratory Medicine, CJ Martin Fellow Medicine, Central Clinical School, Sydney University.

SUPPORTERS OF ARC

BREATH OF LIFE

A Bequest to ARC provides a way to continue a lifetime of generous giving

"Nobody can go back and start a new beginning but anyone can start today and make a new future"

During 2015 despite uncertain economic times ARC's loyal supporters have continued to show their generosity and support by contributing to our two regular appeals. This ongoing commitment ensures that ARC is able to continue to fund researchers in Australia and project work with a focus on the Asia Pacific Region.

What is extremely rewarding is to see that our supporters are also wishing to make a lasting impact on respiratory disease by advising of their intention to leave a bequest in their Will.

Breath of Life Club and Honour Roll

Breath of Life – A bequest to ARC provides a way to continue a lifetime of generous giving.

Why leaving a gift in your will matters

It is our vision that together we can beat respiratory disease. When people like you trust us with a gift in your will we make sure your money matters.

Please call us for a copy of our "Your Security, Your Future" booklet if you are considering leaving a bequest to ARC.

What type of gift can I leave in my Will?

Being wealthy is not a prerequisite and a desire to look after your family does not have to preclude you from leaving a bequest. The value of such bequests is immeasurable. Regardless of their size, bequests are always gratefully received. It does not matter how large or how small your estate, or the size of the bequest you choose to make, it will be a gift that allows you to continue your generous support and make a difference over time.

Making a bequest to ARC is very easy. After taking into account the needs of your family, you can choose to gift a specific asset, a certain amount, a percentage or residue of your estate to ARC. We would suggest that you instruct your solicitor about making a new Will to include a gift to ARC or updating your existing Will to make a simple amendment that designates your desired gift to ARC.

Notifying us about your bequest

For many people a Will is an intensely private thing; its contents are not something they choose to talk about. That's why so many acts of great generosity remain a well-kept secret. Over many years, people from all walks of life have chosen to leave bequests of varying sizes.

Whilst it would be good to be able to thank our supporters for this incredible step, we understand some prefer to remain anonymous. Many longtime supporters have chosen to remain anonymous during their lifetime. It is not until after we receive notification that they have left ARC a bequest that we can publicly thank them for their generosity and add their names to the Breath of Life Honour Roll to thank them in perpetuity.

Communicate your wishes to your loved ones and please consider telling us about your bequest. Notifying us does not alter your right to change or update your wishes if circumstances change but it does help us plan for the future.

breath of life
HONOUR ROLL

MR JOHN ROBINSON
MR GODFREY BARRINGTON GOODERE
MS JEAN MCIVER CALDWELL
MRS NORA MAILFERT
MR JEFFREY WALKER
MR KENNETH JERVIS CARRICK
MRS VIOLET WILSON
MR J W DE B PERSSE
MS SARAH AULD
MS EILEEN HOOK
ANONYMOUS (40)

INVESTING IN THE FUTURE THROUGH RESEARCH

ANN WOOLCOCK FELLOWSHIP

This award was established in 2004 and is named in honour of the late Professor Ann Woolcock AO, former head of the Institute of Respiratory Medicine at the University of Sydney and Royal Prince Alfred Hospital. Professor Woolcock was a strong supporter of trainee scientists and physicians.

This is a 4 year full time postdoctoral fellowship in biomedical, clinical or public health research and is valued at approximately $100,000 per year. The Fellowship aims to encourage people of outstanding ability to develop research as a significant component of their career.

The Fellowship will support research relating to tuberculosis, respiratory diseases due to other infections, or respiratory diseases related to tobacco use, community issues or the health of disadvantaged groups.

Ann Woolcock Fellowship

2005 - 2009

The genetic influences on causal pathways of acute lower respiratory tract infections (ALRIs) in highly susceptible infants in PNG

Dr Ingrid Laing
Telethon Institute for Child Health Research, WA

2010 - 2014

Characterisation and treatment of innate immune dysfunction in older people with obstructive airway disease

Dr Jodie Simpson
University of Newcastle, NSW

HARRY WINDSOR RESEARCH GRANTS SCHEME

These grants are named in honour of the late Dr Harry Windsor, a leading Australian heart surgeon who played a key role in ARC for many years.

Dr Windsor performed the first heart transplant operation in Australia and was a prominent cardiothoracic surgeon at Sydney's St Vincent's Hospital.

He was actively involved with ARC and its Board from 1955 until his death in 1987.

These awards are being offered nationally to support research in:

- Tuberculosis
- Respiratory diseases related to other infections
- Smoking-related respiratory diseases

Research which also address community issues or the health of disadvantaged groups are particularly encouraged.

Grants of approximately $50,000 are offered each year. Grants are available for projects submitted to the National Health and Medical Research Council (NHMRC) which are considered fundable but which do not reach the cut-off mark for funding in any one year. An information sheet and grant conditions can be found and downloaded from ARC's website: www.thearc.org.au

Harry Windsor Research Grants

2015 Recipients

2015

Understanding the aetiology of small airway fibrosis in COPD

Associate Professor Brian Oliver, The Woolcock Institute and the University of Technology, NSW

Getting the dose right in Tuberculosis: Pharmacokinetics to improve outcomes in Tuberculosis

Associate Professor Harin Karunajeewa, The Walter and Eliza Hall Institute, VIC

ASSOCIATE PROFESSOR BRIAN OLIVER

The Woolcock Institute and The University of Technology, NSW

Understanding the aetiology of small airway fibrosis in COPD

I was reminded yesterday that people from a non-medical background often haven't heard of chronic obstructive pulmonary disease (COPD). This in its self is remarkable considering at COPD affects 14.5% of people aged over 40 in Australia. However, I am reassured that when I use the terms emphysema or bronchitis people have some familiarity with the disease, its causes, and the symptoms.

As a researcher, understanding the pathophysiology of COPD can be just daunting as perhaps the term COPD is to the general public. What we do know is that COPD, is predominantly caused by smoking, and is the only chronic disease with on-going increasing mortality. We also know that COPD patients experience marked shortness of breath caused by irreversible structural changes to both the airways and lung tissue, defined as small airway wall remodelling (thickening) and emphysematous destruction respectively.

However, the exact series of pathological events that leads to COPD are not known. My opinion, and the focus of my research, is that small airway remodelling is fundamental to the pathophysiology of COPD. This concept mainly stems from Prof Jim Hogg's research, in which his research group found that narrowing and loss of terminal bronchioles (very small airways leaving to alveoli) clearly preceded emphysematous changes.

The big question for me is why does small airway remodelling occur at all? Our airways are comprised of layers of cells and connective tissue. Increases in the connective tissue accounts for the majority of thickening in the small airways of people with COPD, and increases as the severity of COPD increases. Therefore it seemed a reasonable question to focus upon why excessive connective tissue accumulates in the small airways in COPD. To answer this question we used a range of cellular models, and for the very first time we used cigarette smoke as the in-vitro stimulus.

In a previous study (also supported by the ARC) we found that COPD cells are hyper-responsive to cigarette smoke. That is, in response to cigarette smoke, they produce much more connective tissue than cells from people without COPD.

In-vitro experiments are often criticised because they lack to complexity of multi-layered environments. This to a certain extent is a reasonable criticsm. We know that the cells in the airways communicate with each other, and we know that connective tissue formation often needs more than a single cell type.

With our latest support from the ARC we have developed a new type of 3D co-culture model known as "broncospheres" see figure 1. Essentially this in-vitro model is the closest we have come to recreating the complexity of the airway in-vitro.

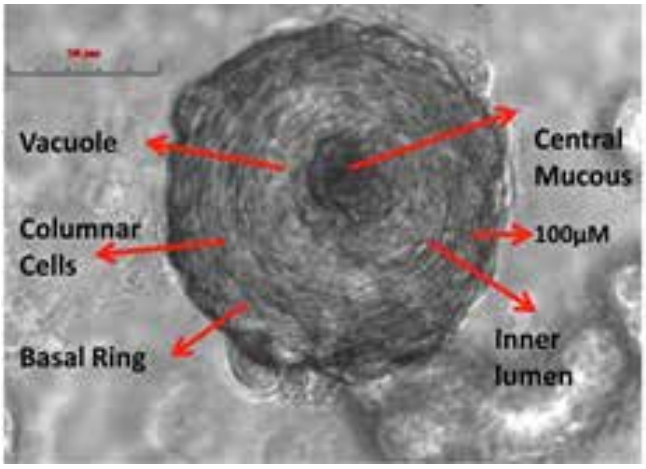


Fig 1. Epithelial cells differentiated into Bronchospheres by Day 16. A clear basal ring, inner lumen and vacuole could be seen in each bronchosphere. Mucus was observed in the centre of each vacuole.

Of course, recreating an airway segment in-vitro allows us to ask questions about the causes of COPD that we could not due in clinical trials. But we still need to make sure that our in-vitro experiments represent what we find in-vivo. Using immunohistochemistry we have found that out changes in-vitro are reflected by changes COPD in-vivo. For example we have found that perlecan (a molecule in the connective tissue) is upregulated in only COPD cells, and in-vivo there is more perlecan in the airways of people with COPD see figure 2.

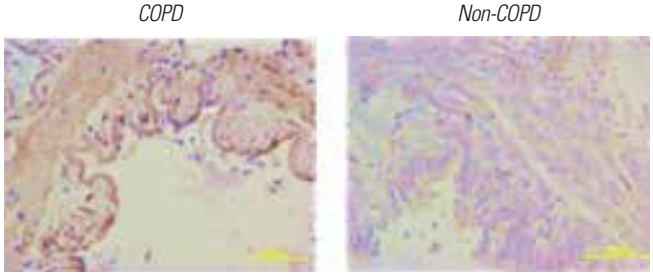


Fig 2. Perlican immunostaining (DAB brown staining) is increased in COPD airways. Images representative of n=3

2015 was a good year thanks to the support of the ARC, like the majority of medical researchers, we can only carry out research if research funding is available. Our major funding grants come from the NH&MRC, and thanks to the support of the ARC we were able to secure project grant funding for this project for the next 3 years (APP1104704 'Elucidation of the Aetiology of Airway Remodelling in COPD'). In this grant we aim to both understand how the individual cells interact to produce connective tissue in COPD and why the airway cells are hyperresponsive to cigarette smoke in COPD.

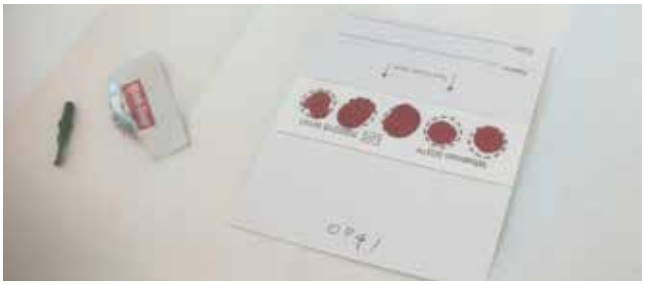
ASSOCIATE PROFESSOR HARIN KARUNAJEEWA

The Walter and Eliza Institute, VIC

Getting The Dose Right In Tuberculosis: Using Pharmacokinetics To Improve Outcomes In Victorian Migrants With Tuberculosis

An Australian Respiratory Council Harry Windsor Research Grant is supporting innovative research examining pharmacokinetics in tuberculosis (TB) treatment. Led by Associate Professor Harin Karunajeewa at the Walter and Eliza Hall Institute of Medical Research, and in collaboration with colleagues at the University of Western Australia, this research builds on recent compelling evidence that pharmacokinetic variability is an important factor in poor treatment outcomes and the development of drug resistance. Associate Professor Karunajeewa's team are evaluating a novel approach to performing pharmacokinetic studies in TB that could enable concentrations of TB drugs to be measured from drops of blood collected onto filter paper cards ("dried blood spots"). Because these can be taken easily (eg from a finger-prick sample similar to that used by diabetics measuring their blood glucose) and because samples can be easily stored and transported (conventional approaches require processing of blood and frozen storage), this could revolutionize the feasibility of incorporating pharmacokinetic analyses into clinical trials and even routine clinical management (eg compliance monitoring) in resource- poor settings.

The support from the Harry Windsor Grant has enabled a pilot



Dried blood spots that will be assayed for concentrations of isoniazid, rifampicin and pyrazinamide using liquid chromatography-mass spectrometry at the University of Western Australia

pharmacokinetic study currently being conducted in TB patients at Western Health in Melbourne. The concentrations of 1st-line TB drugs determined by dried blood spots will be compared with those determined using conventional methods. Data generated by this project has been used to successfully leverage further funding support from the Australian Institute of Tropical Health and Medicine to support a parallel study in Papua New Guinea and will support a submission for funding in the current NHMRC project grant round.

Progress and milestones:

Assay development and validation

Development and validation of the first dried blood spot (DBS) assay is now complete for rifampicin. Assay performance is excellent (based on sensitivity, accuracy and reproducibility compared with conventional methodology). A manuscript for publication detailing these methods is in preparation. See Figure 1 that demonstrates the accuracy of the dried blood spot methods when compared with conventional methods:

Ethics submission and research governance requirements

Human Research Ethics approval has been received from the Royal Melbourne Hospital Human Research and Ethics Committee. We had initially aimed to commence the clinical activities of this study at the Royal Melbourne Hospital. However due to very long delays (>6 months) in receiving governance approval from the Royal Melbourne Hospital Research office (that were beyond our control), we have decided to move the study to Western Health. Western Health's research office has approved the research governance application and the research collaboration agreement and the clinical study has now commenced.

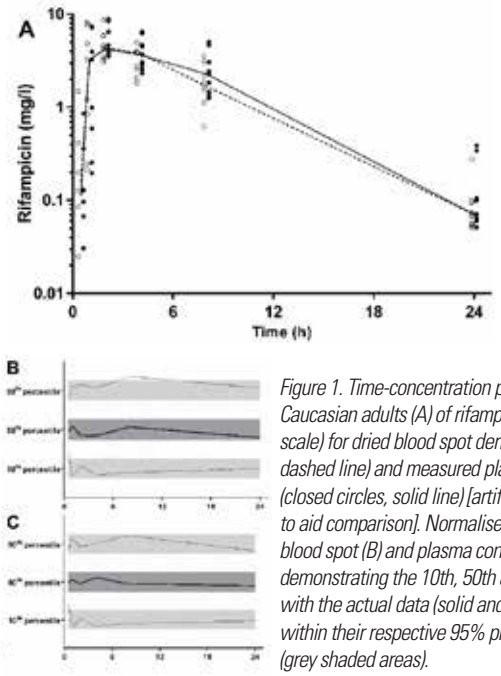


Figure 1. Time-concentration profile from healthy Caucasian adults (A) of rifampicin (mg/l on a log10 scale) for dried blood spot derived (open circles, dashed line) and measured plasma concentrations (closed circles, solid line) [artificially separated to aid comparison]. Normalised VPC for dried blood spot (B) and plasma concentrations (C) demonstrating the 10th, 50th and 90th percentiles with the actual data (solid and dashed lines) within their respective 95% prediction intervals (grey shaded areas).

Logistics and planning of clinical research activities

These are complete (as of October 2015). This includes procurement of all consumables, arrangements for participant reimbursements, translation of participant information and consent forms into Vietnamese, Cantonese /Mandarin, an account established with interpreting services, and arrangements with hospital labs for specimen processing and baseline diagnostic tests. A dedicated study clinician has been employed by WEHI to work on this project this year (see additional funding and collaboration).

Clinical research activities

Enrolments of research participants are now progressing at Western Health. These are going well. However our problems getting governance approval at Royal Melbourne did set us back at least 6 months on our milestones so our numbers are small at this stage.

Additional funding and collaboration

The momentum provided by our initial funding from the Australian Respiratory Council has provided us with the opportunity to leverage additional funding/ resources that will to support this project both directly and indirectly. These include:

- A 1-year part-time research fellowship has been provided by WEHI to support a clinician researcher (employed as a 0.6EFT position – equivalent to $48,000) to manage the clinical activities of the study. This therefore represents additional in kind support of the project. This position has been filled by Dr Robert James, who commenced employment on February 22nd, 2016.
- A collaboration with the Australian Institute of Tropical Medicine Health and Medicine (AITHM)/ James Cook University (JCU), Townsville has successfully raised $209,000 in internal grant funding from AITHM/JCU to perform a parallel pharmacokinetic study in Papua New Guinean patients with TB. This will provide additional support for assay development at the Curtin University/ University of Western Australia site. An application has been submitted in the 2016 NHMRC Project Grants round, that proposes a pharmacokinetic study building on the current work to be conducted in PNG (Budget $1.2 million). The application includes preliminary data generated in the current study and we hope to have generated further preliminary data by the time of the rebuttals.

Dr Robert James, clinical research fellow at the Walter and Eliza Hall Institute of Medical Research taking a dried blood spot from a finger-prick sample from a tuberculosis patient at Western Health.

	Laboratory milestones	Clinical milestones
June 2015	Rifampicin DBS assay fully validated (achieved – June 2015)	Ethics applications submitted (achieved – June 2015)
September/ October 2015	Isoniazid DBS assay fully validated (not achieved, pending clinical sample generation)	Full ethical approvals granted for all study sites. (achieved – Sept 2015) All clinical research governance requirements (including finalization of research collaboration agreements) met. (achieved October 2015) Patient consent/information forms translated to Vietnamese, Cantonese and Mandarin. (achieved November 2015) Research nurse hired at Royal Melbourne Hospital. (achieved – medically trained clinical research manager offered position December 2015) Enrolments commenced at Royal Melbourne Hospital. (not achieved due to delays in governance approval)
December 2015	Analysis of at least one patient profile for isoniazid and rifampicin. Pyrazinamide assay validated. (not achieved due to delays in governance approval – timeline to be revised)	Have enrolled 10 study participants (not achieved due to delays in governance approval – timeline to be revised)
February / March 2016	Assays complete on the first 10 participants, yielding 10-15 concentration –time profiles for isoniazid and rifampicin (including both DBS and paired plasma samples for validation).	Have enrolled 20 study participants
March 2016	NHMRC project grant application submitted, including preliminary data on 10 participants for isoniazid and rifampicin (including paired DBS and venous plasma for validation), plus evidence of a robust, validated pyrazinamide assay.	

Due to the unforeseen delays in obtaining governance approval for this project our timeline for the remainder of the project has been revised, with milestones extended by at least 3-4 months as follows:

	Laboratory milestones	Clinical milestones
February/ March 2016	Isoniazid DBS assay fully validated	Enrolments commenced at Western Health.
March 2016	NHMRC project grant application submitted, including preliminary data on 10 participants for isoniazid and rifampicin (including paired DBS and venous plasma for validation), plus evidence of a robust, validated pyrazinamide assay.	
April 2016	Analysis of at least one patient profile for isoniazid and rifampicin. Pyrazinamide assay validated	Have enrolled 10 study participants
July 2016	Assays complete on the first 10 participants, yielding 10-15 concentration – time profiles for isoniazid and rifampicin (including both DBS and paired plasma samples for validation).	Have enrolled 20 study participants

DR ANN MITROVIC

The University of Sydney

Australia's Lyme-Like Illness: A focus on North-Eastern NSW and South-Eastern Queensland

Global Background

Tick-borne diseases are among the fastest growing vector-borne infectious diseases and affect millions of people globally. Borreliosis (including Lyme disease) is a tick-borne infection due to a spirochetal (spiral) bacteria called *Borrelia*. In the USA alone 300,000 cases of Lyme disease (caused by *Borrelia burgdorferi)* are reported annually (http://www.cdc.gov/media/*releases*/2013/p0819-lyme-disease.html). Several species of *Borrelia* bacteria are known to cause disease globally, in USA (Lyme disease & relapsing fever borreliosis), Europe & Asia (Lyme borreliosis & relapsing fever borreliosis), Africa (relapsing fever borreliosis) as well as South America (Baggio-Yoshinari Syndrome & relapsing fever borreliosis). Borreliosis, when disseminated as a multi-system infection, has a broad clinical presentation. Symptoms can be neurological, musculo-skeletal, systemic, fatigue, cardiac and arthritic. These symptoms can overlap with other conditions making diagnosis difficult outside well characterised endemic areas such as regions of USA and Europe.

New tick-borne pathogens are being identified each year (Pritt et al 2016, Li et al 2012). Due to the ever expanding list of tick-borne pathogens this becomes a challenge for diagnostics as the current diagnostics do not always detect the newly identified geno-species. In addition, the clinical picture becomes complicated as different geno-species can cause varying clinical presentations, for example the newly identified *Borrelia mayonii* in the USA (Pritt et al., 2016) has a neurological presentation and often a diffuse spotty rash in contrast to the well-defined erythema migrans rash (bullseye rash) and more typical arthritic presentation caused by *Borrelia burgdorferi* the causative agent of Lyme disease in the USA.

Australian Background

Tick bites in Australia particularly from the paralysis tick are increasingly causing concern, mainly due to possible infection and also acute allergic reactions following tick bites, occasionally requiring hospitalisation. Also a delayed allergic reaction to red-meat associated with a prior tick bite has been described (Van Nunen et al., 2009).

A tick bite related syndrome that has been described since 1982 (Stewart et al., 1982) where multiple non-specific systemic symptoms develop usually beginning as a flu-like illness following a tick bite. The syndrome has many similarities with the northern hemisphere Lyme disease and hence the syndrome is referred to as Australian Lyme-like illness. A causative agent/s has not yet been identified for Australian Lyme-like illness. There appear to be clusters of this illness mainly on the east coast of Australia based on exposure to tick bite and clinical presentation. One of the clusters is located in north-eastern NSW & south-eastern Queensland and this region is the focus of the Australian Respiratory Council grant which forms part of a greater national study.

A recent publication from Murdoch University identified DNA consistent with a relapsing fever *Borrelia* bacteria from a paralysis tick (*Ixodes* holocyclus) (Gofton 2015). Further work is required to clarify the exact species *of Borrelia* and whether this may be involved with Australian-Lyme like illness.

Aims of the Study

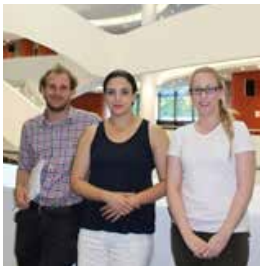
Our research aims to identify the causative agent of this Lyme-like illness and further to develop sensitive and specific diagnostic tests to detect Australians with the illness. We are using different methods to investigate whether the causative agent is a *Borrelia* species;

1. DNA technology to detect the presence of *Borrelia* DNA, in ticks to identify possible pathogens and in clinical samples as evidence of a current or recent exposure to *Borrelia* species that main explain the clinical presentation
2. Diagnostic blood tests to detect antibodies against *Borrelia* proteins in clinical patient samples
3. Culture of salivary glands and mid-gut contents of ticks to isolate spirochetal bacteria; These techniques are also employed to investigate other micro-organisms by DNA technology and serology for a possible role in Australian Lyme-like illness (eg. *Babesia* and *Theileria*).

Progress

A sero-prevalence study was undertaken to better define exposure to a *Borrelia* species by measuring both IgG and IgM immunoglobulins in a cohort of Australians diagnosed with a Lyme-like illness. Mr Will Shirvington (PhD Student) has now completed the sero-prevalence study and is undertaking statistical analysis. His research findings have identified a number of antigens of *Borrelia* that appear to react with IgG immunoglobulins from our clinical cohort and have identified several sero-reactive participants along the eastern coast of Australia stretching from far North Queensland to the south coast of NSW. Individuals have also been identified in the region that is the focus of the ARC grant (South-Eastern Queensland and North Coast of NSW). In addition there are a number of sero-reactive participants on the South-Western coast of Australia. The sero-prevalence study has allowed us to identify regions of high sero-reactivity and we have focussed our tick research to tick samples collected in such regions. Ticks will be investigated by PCR to detect DNA of *Borrelia* and other possible pathogens. Preliminary results were presented at the 14th International Conference on Borreliosis and other Tick-Borne Diseases in Vienna in September 2015.

Borrelia PCR study of ticks



Mr Oliver Creagh, Ms Jevira Marczuk, Ms Brooke Storey-Lewis

We welcomed Mr Oliver Creagh to the group who was awarded an Australian Postgraduate Award this year for his doctoral studies. Oliver will continue the work on the project that was the focus of Mees Barak, an intern from the Netherlands. Oliver is currently working on a qPCR panel for detection of all species of *Borrelia*, a more sensitive PCR technique, to be employed initially on the tick samples and then on clinical samples and we look forward to reporting on Oliver's progress in 2016. This project may potentially lead to a sensitive and specific diagnostic test that will allow detection of several *Borrelia* species and could be developed as a global test for *Borrelia* species.

Tick culture

The culture of tick salivary glands and mid-gut contents has proven challenging with growth of a mixture of microbes. Culture samples have been stored and will be examined by Dr Ann Mitrovic using PCR with specific probes that will enable detection of *Borrelia* species.

Other Tick-borne pathogens- A PCR Study

Other micro-organisms that are present in Australian ticks may cause the symptoms of Australian Lyme-like illness. Ms Brooke Storey-Lewis (PhD student) is investigating *Babesia*, a tick transmitted micro-organism which causes serious illness in USA and Europe and which may also contribute to the symptoms of Australian Lyme-like illness. The first reported Australian case of babesiosis believed to be acquired in Australia was published in 2012 (Senanyake et al 2012). There is always the possibility of Australians returning from overseas with babesiosis acquired in an endemic region. Brooke's results were presented at the 14th International Conference on Borreliosis and other Tick-Borne Diseases in Vienna in September 2015.

We welcomed a new staff member Ms Jevira Marczuk in January. Jevira will be supporting all areas of research at the Tick-borne Diseases Unit.

Tick-borne diseases Unit, University of Sydney-Ms Ann Cincotta, Dr Ann Mitrovic, Ms Jevira Marczuk, Mr Oliver Creagh, Dr Brent McParland, Ms Brooke Storey Lewis

14th International Conference on Lyme Borreliosis and other Tick-Borne Diseases, ICLB 2015, Vienna Austria, 27-30 September 2015.

Dr Ann Mitrovic & Ms Brooke Storey-Lewis attending 14th International Conference on Lyme Borreliosis and other Tick-Borne Diseases (Vienna)

Ms Brooke Storey-Lewis and Dr Ann Mitrovic presented research results at the 14th International Conference on Lyme Borreliosis and other Tick-Borne Diseases in Vienna. Both posters were well attended with much interest in the developing research on tick-borne diseases in Australia. This conference allowed the opportunity to meet the leaders in global tick-borne diseases research and several collaborations have resulted from this meeting. The most advanced collaboration is working with Professor Richard Marconi from The Virginia Commonwealth University Medical Centre, Virginia USA. This collaborative work will focus on development of global diagnostics for Tick-borne diseases.

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Acknowledgement

ARC is able to provide funding for this project as a result of a generous donation from the Twin Towns Services Community Foundation Ltd

PROJECT FEEDBACK

PROFESSOR GUY MARKS

Training doctors and public health professionals in research methods for lung health

Since 2011, the Australian Respiratory Council (ARC) as a part of a collaborative group has been supporting Professor Marks and his team by contributing funding towards the annual Methods in Epidemiological, Clinical and Operational Research (MECOR) Course.

The primary objective of MECOR Course is to develop research capacity in future leaders in respiratory public health in Vietnam, Cambodia and Laos. This capacity will include the ability to interpret and use published evidence to guide policy and disease management, generate research ideas and to design and implement studies to investigate these ideas.

Vietnam, Cambodia and Laos, face many lung health challenges including; tuberculosis (TB), asthma and COPD, air pollution, occupational lung disease, lung cancer, pneumonia and acute respiratory illness in children. They face these problems with limited physical and human resources. A vital aspect in finding relevant solutions to these health challenges is to conduct local research. This requires building capacity and empowering key individuals within the local health sectors to undertake research.

Participants in the MECOR Course are selected from government programs and hospitals, universities, institutes and NGOs. All are engaged in clinical or public health work, in research and/or in teaching in fields relevant to lung health, TB prevention and care, clinical

respiratory medicine, laboratory medicine, environmental health, cancer medicine, child health or other related fields.

The 2015 MECOR training course was held held in March in Southern Vietnam. Thirty nine participants from Vietnam, Cambodia and Laos attended the course (29 level 1 and 10 level 2 participants). The teaching faculty consisted of four experienced international and five Vietnamese faculty supported by seven teaching assistants. These teaching assistants are graduates from previous MECOR Courses who have developed experience in implementing TB research in their respective countries.

The Level 1 students were divided into five small groups and commenced working on their research protocols with the support from faculty and teaching assistants. The Level 2 students were supported by five faculty members, two international faculty, one local faculty and two teaching assistants.

An overview of the level 1 workshop is provided below:

Activity	Strengthen capacity and leadership in Methods in epidemiological, clinical and operations research (MECOR) related to respiratory conditions (Level 1)
Epidemiology	Understand basis of epidemiologic approach to disease eg. Prevalence, incidence
Research design	Understand basic design of different types of studies including cross-sectional, case control, cohort, clinical trials and their respective measures of effect, be able to pose simple research questions and know which study design is appropriate
Research methods	Understand the difference between populations and samples and how these may affect study results; the importance of adequate power and the factors that affect power; the importance of valid and reliable measurements, sensitivity, specificity and predictive value; techniques for maximizing data quality; the importance of ethical conduct of human research; and the importance of a manual of procedures
Statistics	Understand descriptive statistics, measures of association, sources of error, univariate and bivariate analyses
Protocol	Develop and present a research protocol in the course

During the week, the level 1 students learn the basics of research design, including some key epidemiological and biostatical principles. The teaching in the course is highly interactive with information shared through presentations, group work and mentoring. At the end of the course the students are expected to have developed and presented a research protocol. At the completion of the course Level 1 students are encouraged to maintain contact with their mentors to develop their own research proposal (based on the research protocol) which is a requirement for attendance at a Level 2 MECOR course.

An overview of the level 2 workshop is provided below:

Activity	Extend the knowledge of research; and assist participants to individually develop a research protocol for implementation (level2)
Epidemiology	Understand the basis of the clinical epidemiology approach to diagnosis, prognosis, and treatment of disease
Research design	Understand the application of study design to clinical studies and be able to apply and adapt epidemiologic questions to clinical and health services problems
Research methods	Understand how to develop feasible and valid approaches to sampling, the basic methods to determine sufficient sample size for a planned study , how to balance precision and accuracy in measurements and design and pre test a study questionnaire, effective approaches to monitoring quality of data gathering and data entry, and the role of IRB and know current standards for ethical treatment of human subjects
Statistics	Understand how prevalence affects relations between risk, odds and hazard ratio; understand bias, confounding, chance, type I and II errors; reliability, validity, accuracy and precision; understand univariate and bivariate analyses including the T-test, Wilcoxon and chi-squared and risk ratios

The Level 2 Course focuses on developing individual research proposals, the students are guided on how to develop a scientific, feasible and reliable research proposal. At the completion of the week long intensive training course, all students have learnt to develop a testable research question, understand the various study design options for finding the answers to the research questions, learnt to set up studies and develop an understanding of statistics.

On the final day of the course, students are required to present their research proposals. From these presentations the best research proposals are identified. Mentors then work with the student to identify a funding source for implementation of the research proposal.

Students have the option of receiving ongoing individual support, skill development and research experience through continued contact with the MECOR mentors or by joining a Journal Club, led by Professor Marks.

This year, a number of experienced faculty members from the Vietnam National Lung Hospital (NLH) joined the course and were mentors for

some of the students. They participated as key faculty members during the course. The NHL has provided strong support and commitment for the MECOR Course, it is proposed that the course will become a part of the annual training program of the NLH in future.

The MECOR course has been monitored by a committee which includes representatives from American Thoracic Society, Woolcock Institute of Medical Research and the NTP.

Feedback from the students indicate that the course is invaluable in providing an opportunity for participants to share and discuss the clinical issues they face in their day to day work, apply what they have learnt during the course to improve their quality of work through evidence based practice and to create a TB research network within Vietnam, Laos and Cambodia involving health workers in the lung health area.

This project involves a partnership between the Ministry of Health and National TB Programs in Vietnam, Cambodia and Laos, the Woolcock Institute, the American Thoracic Society, Vietnam Lung Association Against TB and Lung Diseases, the Vietnam National Lung Hospital and the Australian Respiratory Council.

PROJECT FEEDBACK

DR PETER MASSEY

Supporting women with TB and women who care for someone with TB: East Kwaio, Solomon Islands

Tuberculosis (TB) is among the top killers of women of reproductive age globally. It has been reported that 510,000 women died from TB around the world in 2013. There are many other impacts of TB on the lives of women. TB among mothers is associated with a six-fold increase in perinatal deaths and a two-fold risk of premature birth and low birth-weight.

The World Health Organisation report that malnutrition and food insecurity can exacerbate the risk of TB disease; other threats such as rising tobacco use and diabetes among women also result in increased TB burden. Stigma and discrimination in some settings can result in women who become ill with TB being ostracised by their families and communities. Cultural and financial barriers can act as major obstacles for women seeking care resulting in delayed presentation and more severe illness.

TB mainly affects women when they are economically and reproductively active, the impact of the disease is also strongly felt by their children and families. Because women have an integral role in health of families in many settings, especially in East Kwaio, Solomon Islands, it is essential that TB issues are seen through the eyes of the women it affects, and that the voices of women and their stories are valued.

If TB services and communities can better support women who then in turn support their families, it is possible that TB control can be improved. The Atoifi Adventist Hospital (AAH) has been leading an ARC-supported project along with the Atoifi Health Research Group, Hunter New England Health, James Cook University, and Tropical Health Solutions, to take some initial steps in addressing this issue.

The project is focused in the remote East Kwaio area on the island of Malaita in Solomon Islands. This area has one of the highest rates of TB in the Pacific, outside of PNG. The aims of the project are to listen to women and community leaders; and develop a DVD that shows stories and information about better supporting women. The project brings individuals, families, communities, churches, and health services together to help fight and eliminate TB disease.

DVDs are very popular as many people have not seen a DVD at all, and many people are not able to read well. Other than the previous TB project, there are no other video resources in the Kwaio language. Having the DVD in local language, as well as in the national Pijin language, is recognised by the community and health service to be really important.

Story of development of DVD, why it is important and what we have done

- Firstly the project team went and visited villages both on the coast and in the mountain areas to start talking with the women and men about TB to collect ideas and stories which focused on describing the good things and the challenges of TB for women. Then the team investigated ways the health services and community can better support women
- After the stories and ideas had been gathered, the team planned the story for the DVD, wrote the scripts, identified local potential actors and settings. The videographer, directors and editors were engaged and filming commenced
- The DVDs that this team have previously developed continue to be very popular and can be found at: www.atoifiresearch.org.sb videos
- Below are some of the comments and recommendations made by women during the interviews and community discussions: There is almost no support from the community. Most women commented that if someone in the family is admitted to the TB ward, it is the immediate members like the husband, wife, or their children that take care and look after their sick one. There is rarely help or support provided by the community to feed and assist the sick family.

The biggest challenge for women is the period of time spent in hospital during admission which takes two solid months during the intensive phase. Women interviewed said that when they left their homes under the care of their husband, most of their household duties were left undone and no one would do their garden work like weeding and planting of new garden plot, so the food supply was at risk.

Husbands can force their wives to leave the TB ward early for several reasons:

- The husband cannot cope with all the household duties left behind
- The distance to the hospital is too far – it is very tiring, especially carrying food from home to hospital with no proper roads
- Husbands really miss private times for intimacy with his wife and hospital does not provide privacy while wife admitted to hospital.

It is a problem for women from the mountain areas to visit or feed their husband in the hospital when they are menstruating, due to cultural norms. Women from the mountains said it was very shameful to stay with their husband in hospital. But the women have provided some good suggestions of how to overcome this. These suggestions are being explored with the hospital.

Most women in the community have supported the development of this DVD which will help the communities to come to some common understanding that it is the responsibility of everybody to help and assist. By doing this, it will help the family members who are affected by TB disease. At the same time it helps the TB Program in controlling the disease, not for each individual, but for everyone.

Plans on how DVD is going to be used

- This DVD can be used to provide awareness to the communities in East Kwaio about women and TB and support the communities need to provide for those families who were affected by TB disease
- The TB team will go to each community in East Kwaio and show the DVD to everyone in the communities
- The DVD can be copied to whatever device people have. In this way, everyone will receive the message while accessing the information without any cost.

Sincere thanks to the Australian Respiratory Council for making this work possible and for making a difference in this grass roots project to control TB.

PROJECT FEEDBACK

AUSTRALIAN RESPIRATRY COUNCIL NURSE CONSULTANTS GROUP

Establishing a Framework for Nursing Education in Australia, 2015

Tubeculosis (TB) remains a disease of global public health significance. Whilst Australia now enjoys a low burden of disease, achieved through the successes of the TB Control Program, TB remains an ongoing public health challenge. Sitting within the Western Pacific Region, and adjacent to the South East Asian Region, many of Australia's closest neighbours are home to some of the highest burden of disease in the world, and account for 58% of the global TB cases.

Frequent international travel in and out of Australia, and high levels of migration to Australia of people from countries with a high TB burden, ensure the need for a specialised TB workforce to prevent local transmission of TB and maintain the past successes of our TB Program. In addition, the emergence of drug-resistant TB adds to the need for a specialised TB workforce to safely and effectively manage the complex treatment of patients with drug-resistant disease.

The ARC has a long history of working in TB control, dating back to the early 1900s. Much of this work has focused on education and training of clinicians and nurses working to control TB in both domestic and international settings. Highly trained health professionals have historically had an important role in providing TB prevention and care; this role continues to be important as national TB control efforts in Australia are currently being oriented towards TB elimination, which is defined as less than one case per million population.

A well trained and equipped health care workforce is necessary to achieve this ambitious goal. Australia has also been identified by the World Health Organization as one of 30 countries who are earmarked to move into a TB pre-elimination phase, utilising eight key interventions to move towards pre-elimination and eventually, elimination. Intensified efforts to move Australia towards TB elimination will demand the involvement of a skilled and knowledgeable health care workforce. Nurses will play an important role in these efforts.

Therefore, a review of the Australian TB nursing workforce and current national and international educational frameworks for TB nurses is timely. Further, the subsequent development of a nursing TB education framework will allow for a structured and recognised approach to TB nursing in Australia, better equipping the nursing workforce to manage TB and move Australia towards TB elimination.

Nurses comprise the largest proportion of the Australian TB Program workforce. There are approximately 164 nurses directly engaged within the Australian TB Program, as well as other nursing staff supporting TB patients within related domains including; paediatrics, respiratory health, refugee health, community and public health, in both inpatient and ambulatory settings.

Within ARC's Strategic Plan 2014 to 2018 it is recognised that the development of a post graduate training program for TB and respiratory nurses is a priority activity. Currently, within Australia TB nurses learn predominantly through on-the-job training. This education is supported by self-directed learning, ad-hoc attendance at TB specific conferences and meetings.

In parallel, along with the ageing of the current TB nurse workforce, Australian based TB nurses have voiced their concerns about a lack of TB nursing education in Australia, succession planning and the future development of the nursing workforce. These concerns have focussed on the need to maintain a skilled nursing workforce for TB prevention and care in Australia. An additional concern has been the need to ensure recruitment, training and retention of nurses to work in the Australian TB Program.

Efforts to address these issues have included the development of nursing competencies for TB prevention and care, the development of policies to guide nursing practice in Australia and dedicated conferences and networking opportunities for TB nurses. Despite these efforts, there remains a need to build upon this work by critically assessing, reviewing and describing the Australian TB nursing workforce and TB nursing education frameworks in Australia. The purpose of doing so is to ensure that the future TB nursing workforce retains adequate numbers of highly skilled nurses to manage and care for people with TB in Australia.

Recognising the need to address these critical workforce issues, ARC funded a project to establish a framework for education of TB Nurses in Australia. Ms Kerri Viney was appointed as the project consultant and worked with a Steering Committee comprising of ARC's Nurse Consultant Group (Pam Banner, Amanda Christensen, Chris Lowbridge and Kerrie Shaw) and the following nursing representatives from across Australia: Dr Peter Massey, Joan Reed and Joanne Fagan.

There is a scarcity of published information on the Australian TB nursing workforce. Therefore, in order to quantify and describe the Australian TB nursing workforce, the consultant developed a cross sectional survey to gather relevant information from identified TB nurses. The survey included close and open ended questions, with forty two questions in total. The questions were developed based on their relevance to the terms of reference of the consultancy. The survey comprised of four parts: Part one included three questions about demographic characteristics. Part two asked questions about the TB service that the nurse works in, with a focus on the type of work that TB nurses perform. Part three asked questions about the nurse and their qualifications, education and professional development. Finally, part four asked nurses about their perceptions and thoughts regarding educational needs for TB nurses. The results of the survey are presented on the following page.

The Australian TB nursing workforce comprises of 164 nurses, of whom 141 (87%) responded to a survey conducted in June/July, 2015. Of those who responded, 90% were female (n=123), just under half of the nurses resided in NSW (n=59, 43%) with 28% (n=39) aged 45-54 years and 44% (n=61) aged between 55 to 74 years. In total, 72% of the Australian TB nursing workforce (n=100) is aged over 45 years, see Table 1.

Almost half of the nurses held a nursing Certificate from a hospital (n=50, 46%) and 38% gained their initial nursing qualification in the 1980s. Fifty-eight percent (n=61) hold a post graduate qualification while another 7% (n=7) are working towards one. One third (n=19, 33%) hold a Masters Degree and only one had a Doctoral level qualification. The average number of years of working in a TB service was 11 years, see Table 2.

Table 1: Characteristics of the Australian TB Nursing Workforce

Characteristics	*n (%)*
Age group (years), n=137	
18-24	0 (0)
25-34	10 (7)
35-44	27 (20)
45-54	39 (28)
55-64	55 (40)
65-64	6 (4)
75 and above	0 (0)
Sex, n =136	
Female	123 (90)
Male	13 (10)
State/Territory of residence, n=136	
Australia Captial Teritory	3 (2)
New South Wales	59 (43)
Northern Territory	8 (6)
Queensland	26 (19)
South Australia	6 (4)
Tasmania	3 (2)
Victoria	13 (9)
Western Australia	20 (15)

Table 2: Qualifications and Length of Service of Australian TB Nurses

Characteristics	*n (%)*
Type of initial nursing qualification, n=109	
Certificate - hospital	50 (46)
Diploma - Hospital	16 (15)
Diploma - University	7 (6)
Degree - University	31 (28)
Other	5 (5)
Decade of initial nursing qualification, n=97	
1960 - 1969	5 (5)
1970 - 1979	23 (24)
1980 - 1989	37 (38)
1990 - 1999	18 (19)
2000 - 2009	12 (12)
2010 - 2011	2 (2)
Post Graduate qualifications, n=105	
Yes	61 (58)
No	37 (35)
Currently studying towards post graduates qualification	7 (7)
Type of post-graduate qualification, n=57	
Graduate Certificate	30 (53)
Graduate Diploma	18 (32)
Masters Degree	19 (33)
Doctorate (Doctor of Philosophy or Doctor of Public Health)	1 (2)
Total number of years in TB nursing, n=103	
11 (0-43) Average (Range)	

When asked if they had undertaken education specific to TB prevention and care, 47% (41/88 respondents) said that they had undertaken no education specific to TB, while others mentioned that they had. This TB specific education included: online learning, reviewing journal articles, undertaking the Immunisation Course offered by the Australian College of Nursing, in-service trainings and participating in various other short training activities that have been offered alongside conferences.

Australian University Schools of Public Health were surveyed to assess if they offer any course content on TB and if so, how many nurses enrol in these courses. Of the universities that responded an estimate of the number or proportion of nurses undertaking these courses could not be obtained. There are limited courses offered by Australian University Schools of Public Health on TB, with the majority of universities advising that course content on TB being limited to a small number of hours if included at all.

Nurse Consultants Group: Kerrie Shaw, Amanda Christensen and Pam Banner

In looking at developing nursing practice, the respondents identified that keeping up to date with recent changes in policy and practice was important. However, others stated that a comprehensive TB course was required which addressed not only the biomedical elements of TB prevention and care, but the social determinants of TB, the public health aspects of TB care, and research. Several nurses commented that any course that was developed should be "recognised" and that a national guideline and or education program would be useful. The majority of the TB nurses thought that a combination of on the job learning and post graduate education was desirable or essential for developing the future nursing workforce. These findings were supported by a face to face discussion about this work with Australian TB nurses at the 5th Conference of the Union Asia Pacific Region in August, 2015.

Looking to the future, the work undertaken in this project resulted in the first comprehensive description of the Australian TB nursing workforce, including a survey on workforce training needs and a review of current national and international educational courses available for TB nurses and other niche nursing specialities. The project confirmed that there is strong interest and support for the establishment of a post graduate education pathway for TB nurses in Australia and identified interest in exploring how this may also be applied regionally and internationally.

On the basis of these findings, the ARC Nurse Consultant Group propose in 2016 to explore with potential training providers and collaborators including: Universities, the World Health Organisation and the International Union Against Tuberculosis and Lung Disease the establishment of a post-graduate education pathway that can be developed to meet the training and workforce needs of the Australian TB Program. In the interests of course sustainability and capacity building, opportunities for access to such a course by other TB nurses in the Asia Pacific Region or internationally will also be explored.

ADVOCACY

WORLD TB DAY 2015

World TB Day 2015: "Reach the 3 Million: Reach, Treat, Cure Everyone"

Every year, on the 24 March, World TB Day is acknowledged. TB remains one of the world's most significant health challenges. The day is an occasion to mobilise political and social commitment for further progress towards eliminating TB as a public health burden.

Scale of the problem

More than 2 billion people, equal to one-third of the world's population are infected with TB – out of these people, 1 in 10 will go on to develop TB during their lifetime. Of the 13 million TB cases in 2013, 9 million were new cases but consistently 3 million people each year are either not diagnosed, not treated, or officially not registered by national TB Programmes. Many of those missed will either die, follow some unknown treatment but most will continue to infect others. Major efforts are needed to close this gap as despite our best efforts, the proportion of missed cases has been nearly the same for the past seven years.

Among those missed are those most vulnerable to falling ill with TB including; very poor and/or malnourished or undernourished people, people living with HIV/AIDS, children and women, migrants, prisoners, refugees and internally displaced persons, miners, the elderly, ethnic minorities, indigenous populations, drug users and homeless persons.

Around 3.3 million people with TB are currently "missed" by health systems according to figures from 2013.

Globally in 2013, an estimated 480,000 people developed multidrug-resistant TB (MDR-TB), with extensively drug-resistant TB (XDR-TB) reported by 100 countries. There is slow progress in tackling drug-resistant TB, many drug-resistant TB cases remain without a diagnosis, and only 97,000 patients were started on MDR-TB treatment last year.

There has been some growth in funding for TB prevention, diagnosis and treatment, however, there is still an annual gap of around US$ 2 billion needed to ensure a full response to the global TB epidemic. Critically, although new tools are emerging, greater investment is needed to reach, treat and cure the missed millions.

Reach, Treat, Cure Everyone

To address TB, there is a critical need to address weaknesses in countries' health systems, there is a need for sustained and predictable funding, political engagement and support. Countries to step up their domestic investments in TB in a cost efficient manner – in prioritised interventions that work and show impact.

This year's campaign provided a platform to highlight the urgent need to fill the current funding gap of US$ 2 billion per year for TB interventions and the immediate need to fill the US$ 1.39 billion annual gap for research and development. The importance of eliminating access barriers to all recommended TB diagnostics and drugs and addressing TB and MDR- TB as global health security threat was highlighted. We were reminded this year, that TB needs to be considered as everyone's concern and of the urgent need to involve everyone in the fight against the disease.

Call to Action

World TB Day is an opportunity for affected persons and communities in which they live, governments, civil society organizations, health-care providers, the private sector and international partners to ensure access to diagnosis, treatment and cure for everyone. There is an urgent need to accelerate the reduction in the number of TB cases through the engagement of civil society, communities and the private sector.

5TH CONFERENCE OF THE UNION ASIA PACIFIC REGION, SYDNEY 2015

The Australian Respiratory Council (ARC) in collaboration with The International Union Against Tuberculosis and Lung Disease (The Union) held the 5th Conference of The Union Asia Pacific Region in Sydney from the 31st August to the 2nd September, 2015. The theme of the conference was Reducing the Burden of Tuberculosis (TB) and Lung Disease by Increasing and Expanding Regional Partnerships. The conference addressed the following respiratory health issues in the Asia Pacific Region: TB, smoking-related diseases, respiratory viruses, air pollution and lung disease.

The Union Asia Pacific Conferences are held every two years and this was the first time the conference was held in Australia. The conference showcased up-to-date information and featured many of our Region's leading researchers and clinicians in the area of TB lung disease. The conference program was formed to inspire solutions for the pressing challenges for the future management of TB and respiratory disorders in our Australia and neighbouring countries.

Within the Asia Pacific Region, TB, smoking-related diseases, respiratory viruses, air pollution and lung disease are of public health significance due to increasing smoking rates in a number of countries, the high burden of TB, recent viral outbreaks, antibiotic resistance of bacterial organisms, and socio-economic factors that have produced rising levels of air pollution, often in areas that are the most impoverished. The health, social and economic impact for these diseases are significant.

The conference program encompassed the domains of research, technical assistance and advocacy to raise the profile of global health issues in general and focus the attention of regional governments and other key regional actors on the problems of TB, other lung diseases, tobacco control and non-communicable diseases among the poor within our Region.

Emeritus Professor J Paul Seale AM was appointed as the Conference President and Professor Guy Marks provided expert guidance as the Chair of the Executive Scientific Committee.

To assist in the development of the scientific program and organisation of the conference three committees were formed and an event management company engaged. Please see the Table 1 listing the committee members.

The three day Scientific Program reflected the areas of The Union's work in TB, non-communicable diseases, TB/HIV, tobacco control and lung health and consisted of 7 plenary sessions provided by expert speakers, 16 symposia sessions with 73 speakers invited to present, 11 oral abstract sessions with 55 presentations, 9 poster sessions with 107 posters presented, 7 Meet the Expert Sessions, 3 workshops, 2 facilitated discussions forums, Union Executive and Council Meetings, side meetings, a sponsored symposia and the AGM for the Australasian TB Forum.

In addition, five post-graduate courses were held on Sunday 30th August, 2015. These courses were; Health System Strengthening: Performance Based Project Management; Operational Research Skills; The MDR TB crisis: Current situation and way forward; TB Management for Advanced Clinicians and Laboratory Diagnosis of Respiratory Infections: An Update.

The conference was attended by Mr Jose Luis Castro Executive Director of The Union, Dr E Jane Carter President of The Union, Professor Xiexiu Wang Chair of The Union APR Executive Committee, Dr Mario Raviglione, Director of the Global Tuberculosis Programme - World Health Organization, representatives of peak global and regional organisations, Members of Parliament of a number of Regional Nations, health professionals, community and industry representatives.

Data provided by the event management company advised that there were a total of 674 registrations for the three day conference with 198 people attending one of the five post-graduate workshops held on the 30th August, 2015.

Approximately 80% of the delegates attending the conference were from the Asia Pacific Region, with the majority of participants coming from the following countries; Australia (313), Peoples Republic of China (57), Philippines (30), Thailand (28), Singapore (21), Indonesia (20), New Zealand (20) and Japan (19).

Opening Ceremony

The Honourable Julie Bishop MP provided the opening address of the conference on behalf of the Prime Minister of Australia. Emeritus Professor J Paul Seale AM, Dr E Jane Carter, Professor Wang and The Honourable Nick Herbert MP (United Kingdom) also spoke at the opening ceremony.

Emeritus Professor Seale AM, Dr Raviglione, Professor Marks, The Hon Julie Bishop MP, Mr Castro, Dr Carter, Professor Wang

Closing Ceremony

During the Closing Ceremony Emeritus Professor Seale AM and Professor Wang spoke about the highlights of the conference and thanked all for their attendance and participation. Dr Mori extended an invitation to all to attend the 6th Conference of The Union Asia Pacific Region to be held in Japan in March 2017.

Professor Guy Marks awarded a poster prize ($100 AUD) to Dr Thu Anh Nguyen, from the Woolcock Institute – Vietnam, for her poster titled "Anti-retrovirus treatment adherence and factors associated with the adherence among PLHIV in Vietnam: A cross sectional study.

Dr Ral Antic, Chair of The Union Asia Pacific Region Scientific Committee presented the key outcomes and the future agenda for the region. Dr Antic tabled the Sydney Declaration that was developed during the conference. The declaration calls on Regional Governments to adopt the End TB Strategy, for agencies to work in partnership and continue their focus on TB and lung disease as a priority and for The Union to actively participate within the Region to promote local and regional strategies to meet the 2030 targets. The Asia Pacific Executive Committee will utilise the declaration in their work within the region.

Conference Sponsors

The Conference Organising Committee raised funds from the following companies to contribute to the conference expenses:

- Platinum Sponsor - QIAGEN
- Gold Sponsors – Novartis Pharmaceuticals, GSK, Boehringer Ingleheim Pty LTD and A Menarini Pty Ltd
- Silver Sponsor – Imagination Graphics
- Bronze Sponsors – Cepheid HBDC, Janssen: a division of Johnson & Johnson Pty Ltd and Oxford Immunotec.

In addition to the above revenue, funding to support delegates to attend the conference and workshops was received from the following agencies:

- The Union Asia Pacific Region to support the participation of delegates from low or middle income countries to undertake an oral or poster presentation in the scientific program
- Business Events Sydney to support travel grants for delegates from low and middle income countries to attend and present in the scientific program. These funds were used to support 13 delegates to attend the conference
- The World Health Organisation Western Pacific Region sponsored 71 participants to attend the workshop - The MDR TB crisis: Current situation and way forward
- The WHO-Union-MSF (SORT IT) Group sponsored of 11 delegates from low and middle income countries to attend the Operational Research Workshop.

Exhibitors

The Conference Organising Committee raised funding by selling exhibition space to the following companies; Oxford Immunotec Ltd, Novartis, Pulmonx International Sarl, Menarini, Hain Lifescience GmbH and Cepheid HBDC.

Media

Media coverage for the conference was extensive with TV, radio, print and social media covering the conference. The Union's Facebook and twitter handles were utilised to promote the key messages arising from the conference.

Engaging the Australian Government:

Following the conference the following agencies: the Australasian TB Forum, ARC, the Australian TB CRE, WHO and The Union have written to The Honourable Julie Bishop MP to promote the unique opportunity the Australian Government has to take a leadership position and make a major contribution to building momentum towards achieving the United Nations' Sustainable Development Goal of reducing TB deaths by 90% and TB cases by 80% by 2030 and of ending the global TB epidemic by 2035.

The group proposed that the Australian Government, working with other governments and non-state partners, convene a conference of Ministers and other stakeholders in Sydney in 2016 with the objectives of:

- Building political commitment to pursue TB elimination targets by implementing the End TB Strategy and mobilising the required resources from state and non-state actors
- Proposing approaches that enhance global and regional collaboration to end TB, with a specific focus on the challenges posed by rising rates of MDR TB
- Enhancing regional health security by developing MDR TB as a model for regional collaboration and Australian leadership.

Parliamentary Caucus

To coincide with the conference Results International held a two day Parliamentary Caucus. Parliamentarians from seven countries met to form the inaugural meeting of the Asia Pacific TB Caucus. Representatives from India, Vietnam, the Philippines, Indonesia, Papua New Guinea, New Zealand and Australia formed the first Parliamentary Regional Network under the Global TB Caucus established in 2014.

With approximately 60 per cent of the world's cases occurring in the region, TB is a critical public health issue for Asia Pacific. Caucus participants vowed to take action, both collectively and individually, to drive progress against TB by working with governments, and regional and global organisations to build support for policies and mobilise resources to more effectively tackle the disease. The Caucus is founded on the principle that by working together across political and geographical divides, parliamentarians can drive significant change. A priority of the Caucus will be supporting patients and vulnerable groups and helping to lift the burden of stigma from TB patients and their families, as outlined in the Stop TB Partnership's Global TB Plan 2016-2020 and the End TB Strategy 2016-2035.

Inaugural members of the Asia Pacific TB Caucus include: The Hon Warren Entsch MP, Dr Andrew Southcott MP, Senator Lisa Singh, The Hon Matt Thistlethwaite MP, Ms Sharon Claydon MP (Australia); The Hon Angelina Tan MD (Philippines); Ms Louisa Wall MP, (New Zealand); The Hon. Aide Ganasi MP (Papua New Guinea); Dr Nguyen Van Tien (Vietnam); Ms Okky Asokawati MP (Indonesia); and Mr Kalikesh N Singh Deo MP (India).

A further meeting of the Global TB Caucus was held in Cape Town, South Africa in December 2015 in conjunction with the 46th Union World Conference on Lung Health

Table 1: 5th Conference of The Union Asia Pacific Region Conference Committee Members

Organising Committee	Executive Scientific Committee		International Scientific Advisory Panel		
Emeritus Professor J Paul Seale AM, Chair & Conference President	Professor Guy Marks, Chair	Professor Christine Jenkins AM	Ms Pam Banner	Professor David S Hui	Ms Kerrie Shaw
Mrs Judy Begnell	Dr Ral Antic	Associate Professor Ben Marais	Dr Karen Bissell	Dr Tauhid Islam	Dr Akira Shimouchi
Ms Amanda Christensen	Professor Warwick Britton AO	Professor Mathew Peters	Dr Richard Brostrom	Ms Anne Jones OAM	Ms Kerri Viney
Mr Robert Horsell OAM	Dr Chen-Yuan Chiang	Emeritus Professor J Paul Seale AM	Mr Gilles Cesari	Dr Linh Nhat Nguyen	Dr Wang, Lixia
Ms Robyn Johnson	Ms Amanda Christensen	Associate Professor Vitali Sintchenko	Mr Matthew Coghlan	Mr Richard Lumb	Dr Wang, Xiexiu
Professor Guy Marks	Professor Steve Graham	Dr Justin Waring	Dr Justin Denholm	Professor Camilo C. Roa, Jr.	Honorary Professor Yew, Wing Wai
Professor Iven Young			Dr Cornelia Hennig	Dr Nina Ruslami	Dr Takashi Yoshiyama


5th Conference of
The Union Asia Pacific Region
P07
5th Conference of
The Union Asia Pacific Region







MILESTONES













RESOURCES

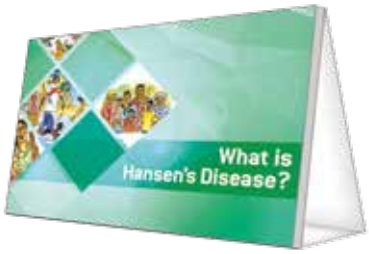
NEW RESOURCES

Launch and release of two new modules within the ARC TB Training Modules Resource

Following the review of the ARC TB Training Modules in 2014, ARC's Nurse Consultants Group comprising of Pam Banner, Amanda Christensen and Kerrie Shaw developed in 2015 two new modules for inclusion in the training resource. These new modules Maternal and Paediatric TB and Directly Observed Treatment (DOT) – An approach to treatment were developed to augment the existing training resource.

The ARC Tuberculosis (TB) Training Modules package is made up of a series of modules that are clinically based and cover TB symptoms, disease process, diagnosis, treatment and management and modules that focus on counselling and communication skills, education and working with communities. This resource was developed and is being utilised by nurses and related workers within the TB Control Programs of The Northern Pacific.

The new modules were launched and distributed at the 5th Conference of The Union Asia Pacific Region held in Sydney from the 31st August to the 2nd September, 2015.



Hansen's Disease Flipchart

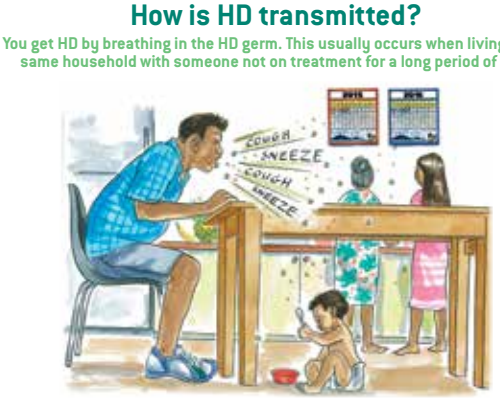
In 2015, ARC Nurse Consultants Group worked in consultation with Lori Anne Ching from the Hansen's Disease Community Program, State of Hawaii, Department of Health and the Pacific Hansens Disease Program staff to develop a resource to support health workers and nurses to raise community awareness and deliver education to individuals and community groups affected by the disease.

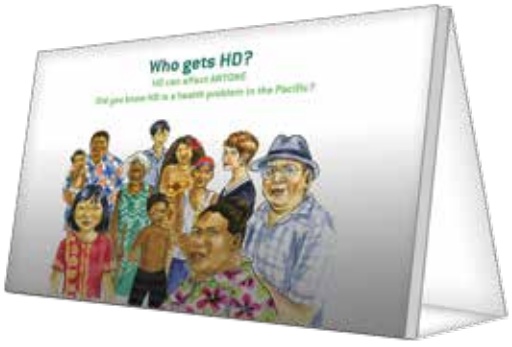
Hansen's disease (also known as leprosy) was once feared as a highly contagious and devastating disease. In most countries the disease is rare, however, within a number of countries within the Pacific (Marshall Islands, The Federated States of Micronesia and Kiribati) elimination of Hansen's disease remains a public health challenge.

A person affected with Hansen's disease who does not receive treatment, or whose diagnosis and treatment are late, may suffer from permanent disabilities in the eyes, hands and feet. These physical disabilities are often accompanied by social rejection and mental suffering caused by stigma and discrimination associated with the disease.

ARC aims through the Hansen's Disease Flipchart to raise community awareness about the disease, promote early presentation and diagnosis of new cases, promote the completion of treatment to prevent disability and address the stigma and discrimination associated with the disease.

The Flipchart was distributed to Hansen's Disease Program Staff of the Pacific in September, 2015.





SCHOLARSHIPS, FELLOWSHIPS

A HISTORY

ARC Ann Woolcock Fellowship Awards (2005 - 2014)

Date	Recipient	Subject	Award
2010-2014	Jodie Simpson *Newcastle University, NSW*	Characterisation and treatment of innate immune dysfunction in older people with obstructive airway disease	$258,763
2005-2009	Ingrid Laing *Telethon Institute for Child Research, Perth,WA*	Genetic Influences on causal pathways of ALRIs in highly susceptible infants	$285,000

ARC Ann Woolcock Biomedical and Postgraduate Research Scholarship Awards (2002 - 2004)

Date	Recipient	Subject	Award
2003-2004	Corrina Parker *Australian National University, Canberra, ACT*	Detection, isolation and characterisation of novel anti-effective agents from cultured micro-fungi	$40,143
2003-2004	Kylie Turner *University of Sydney, NSW*	Investigation of the structure of cryptococcal phospholipases	$40,143
2002- 2004	Zoe Barker-Whittle (McKeough) *Royal Prince Alfred Hospital, Sydney, NSW*	Evaluation of lung volume reduction surgery in patients with chronic airflow limitation	$59,214
2002-2003	Shoma Dutt *Westmead Hospital, Sydney, NSW*	Biliary lipids in liver disease and interstitial phospholipid metabolism in children with cystic fibrosis	$41,793
2002-2003	Rita Machaalani *University of Sydney, NSW*	Neurone receptor systems in sudden infant death and piglets exposed to hypercapnic-hypoxia	$29,214
2002- 2003	Anup Desai *University of Sydney, NSW*	The contribution of obstructive sleep apnoea to driver fatigue in transport drivers	$55,793

ARC Harry Windsor Biomedical and Postgraduate Research Scholarship Awards (1999 - 2001)

Date	Recipient	Subject	Award
2001	Anup Desai *University of Sydney, NSW*	Interaction of mild obstructive sleep apnoea, sleep deprivation and circadian factors in cognitive function	$27,793
2000-2001	Shoma Dutt *Westmead Hospital, Sydney, NSW*	Biliary lipids in liver disease and interstitial phospholipid metabolism in children with cystic fibrosis	$40,311
2000-2001	Rita Machaalani *University of Sydney, NSW*	Neurone receptor systems in sudden infant death and piglets exposed to hypercapnic-hypoxia	$37,454
1999-2001	Anna Hansen *University of Sydney, NSW*	The role of cytokines in the immunity and pathology of malaria	$56,703
1999-2001	Rosemary Santangelo *Westmead Hospital, Sydney, NSW*	Phospholipases of Cryptococcus neoformans	$63,498
1999-2001	George Latouche *University of Sydney, NSW*	Phopholipases as potential virulence factors of Cryptococcus neoformans variety Gattii	$55, 089

RESEARCH GRANTS

A HISTORY

ARC Harry Windsor Medical Research Grants (1999 - Present)

Date	Recipient	Subject	Award
2015	Brian Oliver, *The Woolcock Institute and The University Of Technology, NSW*	Understanding the aetiology of small airway fibrosis in COPD	$50,000
2015	Harin Karunajeewa *The Walter and Eliza Institute, VIC*	Getting the dose right in Tuberculosis: Pharmacokinetics to improve outcomes in Tuberculosis	$50,000
2014	Daniel Chambers *The Prince Charles Hospital, Qld Lung Transplant Service, Qld*	Disease tolerance and transplant tolerance – two sides of the same coin?	$50,000
2013	Brian Oliver *University of Sydney, NSW*	Why do fibroblasts from people with COPD produce extracellular matrix proteins in response to ciagraette smoke?	$50,000
2012	Bernadette Saunders *Centenary Institute, Sydney, NSW*	Microparticles and microRNA as biomarkers of TB disease	$50,000
2011	Ross Coppel, Paul Crellin et al *Monash University, Melbourne*	Identification of inhibitors of PimA, a new target for tuberculosis therapy	$50,000
2010	Peter Bye *Royal Prince Alfred Hospital, Sydney, NSW*	Novel interventions for the diverse population of Australia with bronchiectasis	$50,000
2010	Peter Bye *Royal Prince Alfred Hospital, Sydney, NSW*	Novel interventions for the diverse population of Australia with bronchiectasis	$50,000
2009	Sandra Hodge *Hanson Institute, Adelaide, SA*	Investigation of macrophage function as a therapeutic target in chronic obstructive pulmonary disease/emphysema (COPD)	$50,000
2008	Jenny Alison *University of Sydney, NSW*	Optimising mucus clearance with exercise in cystic fibrosis	$50,000
2008	Stephen Stick, Anthony Kicic & Siobhan Brennan *University of WA, Perth, WA*	A randomised controlled trial of L-arginnine or vitamin D to improve outcomes in pulmonary tuberculosis	$50,000
2007	Siobhain Brennan and Anthony J Kettle *Telethon Institute for Child Health Research, Perth, WA*	Investigating markers of oxidative stress in young children with cystic fibrosis: a driving mechanism of pulmonary investigation	$50,000
2007	Stephen Bozinovski and Ross Vlahos *University of Melbourne, Melbourne, VIC*	Cigarette smoke chemically modifies and inactivates lung innate immunity mediated by the bacterial receptor, TLR4	$50,000
2006	Paul Kelly, Graeme Maguire, Peter Morris, Ivan Bastian & Nicholas Anstey *Menzies School of Health Research, Darwin, NT*	Nutritional intervention to improve tuberculosis treatment outcome in Timika, Indonesia: the NUTTS study	$50,000
2006	David Jans *Monash University, Melbourne, VIC*	Role of phosphorylation in regulating nuclear trafficking during infection of respiratory syncitial virus matrix protein	$50,000
2006	Robert Capon *University of Queensland*	A new non-toxic approach to controlling bacterial infection	$49,000
2005	Paul Reynolds, Gregory Hodge, Sandra Hodge, Mark Holmes *Royal Adelaide Hospital, Adelaide, SA*	Infection versus rejection in lung transplant related bronchiolitis obliterans syndrome: can intracellular cytokines help?	$50,000
2005	Kwung Fong & Annalese Semmler *Prince Charles Hospital*	Novel methylated genes in lung cancer	$52,250
2004	Warwick Britton, Guy Marks and Bernadette Saunders *Centenary Institute of Cancer Medicine & Cell Biology , Sydney, NSW*	Evaluation of genetic and environment risk factors for progression to active tuberculosis in the Liverpool cohort	$44,701

Date	Recipient	Subject	Award
2004	Paul Kelly, Nick Anstey, Graeme Maguire et al *Menzies School of Health Research, Darwin, NT*	Pulmonary Function in Tuberculosis patients in Timika District, Papua Province, Indonesia	$43,267
2002 -2003	James Triccas & Warwick Britton *Centenary Institute of Cancer Medicine & Cell Biology, Sydney, NSW*	New strategies to vaccinate against Mycobacterium tuberculosis	$112,588
2002	Amanda Leach, Heidi Smith-Vaughan Marius Puruntamerri, Ross Baillie & Peter Morris *Menzies School of Health Research*	Improved hygiene measures for reduced infection in Australian Aboriginal Children: a randomised controlled trial	$48,424
2002	Evangelia Daviskas, Sandra Anderson & Iven Young *Royal Prince Alfred Hospital*	Effect of mannitol on the clearance of mucus in patients with COPD	$38,593
2001	Amanda Baker and Vaughan Carr *University of Newcastle*	Randomised controlled trial of a smoking cessation intervention among people with a mental illness	$63,370
2001	Terence Amis and John Wheatley *Westmead Hospital*	The role of snoring and obstructive sleep apnoea in the pathogenesis of hypertension	$45,665
2001	James Wiley and Tania Sorrell *University of Sydney, NSW*	The monocyte-macrophage P2x7 receptor and susceptibility to tuberculosis	$45,000
2000-2001	John Wiggers, Afaf Girgis, Robyn Considine, Jenny Bowman *University of Newcastle*	Preventing infant exposure to tobacco smoke: evaluation of an early childhood intervention	$53,006
2000	Peter Bye, Iven Young, Jenny Alison and Marney Isedale *Royal Prince Alfred Hospital*	Evaluation of lung volume reduction surgery in patients with chronic airflow limitation	$38,000
2000	Warwick Britton and James Triccas *Centenary Institute of Cancer Medicine & Cell Biology*	Interlukin-18 as an adjuvant for DNA Immunisation against Tuberculosis	$26,500
2000	Peter Gibson *John Hunter Hospital*	Quality of Life in Chronic Cough	$25,500
1999	Guy Marks *Institute of Respiratory Medicine*	Does BCG vaccination in infancy prevent allergy	$5,000
1999	Graeme Maguire, Norma Benger and Bart Currie *Menzies School of Health Research*	Chronic Lung Disease in Aboriginal Australians: factors in aetiology and treatment	$69,136
1999	Bernadette Saunders and Helen Briscoe *Centenary Institute of Cancer Medicine & Cell Biology*	Apoptosis in the control of Mycobacterial infection	$38,000
1999	Peter Bye, Stefan Eberl and Jenny Alison *University of Sydney, NSW*	Pharmacological and Physical Therapies to enhance mucociliary clearance in chronic lung disease and mucus hypersecretion	$39,000
1999	Evangelica Daviskas *Royal Prince Alfred Hospital*	Effects of beta2-adrenceptor agonists on mucociliary clearance in persons with asthma	$5,000
1999	Karen Waters *University of Sydney, NSW*	Potential neurotoxicity of repetitive hypercapnic hypoxia during early treatment	$10,000
1999	Ronald Grunstein *Royal Prince Alfred Hospital*	Sleep Apnoea and Cytokines	$22,000

PROJECTS

A HISTORY

ARC Project Awards (1999 - Present)

Date	Recipient/Project	Award
2015	Australia Establishing a framework for nursing education in Australia	$21,783
2013-2015	Solomon Islands Improving TB control in remote area of Solomon Islands	$64,744
2012	Bangladesh Bangladesh MDR-TB Project, an investigation into risk factors for MDR-TB in communities in Bangladesh	$10,000
2011	Kimberley Aboriginal Medical Services Council(KAMSC) Cultural exchange of Be Our Ally Beat Smoking Study(BOABS) workers to visit Maori Tobacco Control Programs in New Zealand	$10,000
2011-2015	Vietnam MECOR Course - Level 1, Level 2 and Level 3 workshops	$60,000
2010	Secretariat of Pacific Community Evaluation of the effectiveness of the Community Component of the Kiribati Quality TB Epidemic Control Project	$4,800
2010	Menzies School of Health Research Development of educational resources, 3 Talking posters and 3 flipcharts on pneumonia, bronchiolitis and bronchiectasis	$35,000
2009	Federated States of Micronesia Capacity Building for TB nurses and related health workers in the Federated States of Micronesia (FSM) A partnership with Eli Lilly	$31,424
2009-2012	Cambodian Anti-Tuberculosis Association Cambodia: TB control in elderly and vulnerable groups and in factories	$110,637
2008-2009	Secretariat of Pacific Community TB Drama Video Production in Kiribati	$35,000
2007-2009	Aboriginal Health Council of Western Australia (AHCWA) Beyond the Big Smoke: a clear vision for Aboriginal tobacco control in Western Australia	$200,000
2007-2009	Aboriginal Health and Medical Research Council (AH&MRC) BREATHE: Project. This project aims to reduce smoking-related disease and morbidity for Aboriginal people in NSW communities	$490,200
2007-2008	Secretariat of Pacific Community Enhancing Community involvement in TB control through Theatre in Kiribati	$40, 926
2006-2014	PITCA - Pacific Island TB Controllers Association Training of nurses and related workers in the Northern Pacific Funding	$124,216
2006	TB Nurse Training in Kiribati	$41,699
2006	Building of TB Laboratory at Tunguru Hospital Kiribati	$30,000
2005	Maningrida Lung Health Community Awareness Raising Pilot Project Funding (James N Kirby Foundation $12,000)	$20,000
2002 - 2015	TB laboratory Training Tonga, Samoa, Kiribati and the Cook Islands	$189,231

Date	Recipient/Project	Award
2001	Distribution of books: Clinical Tuberculosis and Tobacco or Health: A Global Threat through Teaching Aids at Low Cost.	$2,000
2000	Sponsored Professor Don Enarson, Scientific Director of IUATLD, to be guest speaker at the NSW Health Department TB Nurses Conference	$3,000
2000	Participation in the WHO, "First Stop TB Meeting in the Pacific Islands" in Noumea	$4,000
1999	Provided funding for the translation of "Tobacco or health: A Global Threat" through Teaching Aids at Low Cost	$3,000
1999	Visit to Port Moresby and Lae to evaluate the DOTS TB Programme	$4,000
1999	Funded purchase of course textbooks for Epidemiology Workshop in Port Moresby	$1,000

MILESTONES

OVER 100 YEARS OF SERVICE

1910 The National Association for the Prevention and Cure of Consumption forms at a public meeting in Sydney

1912 Australia's first tuberculosis (TB) dispensary opens in Sydney

1913 First Annual General Meeting of the National Association for the Prevention and Cure of Consumption was held

1941 Subscription from donors funds the acquisition of the first mobile x-ray unit

1954 Mobile x-ray units in NSW and other parts of Australia take more than 500,000 x-rays in a year

1957 Service expands offshore with a TB survey in Nauru

1982 Mobile vans are handed over to NSW Health

1986 The first grants are provided for respiratory research and overseas TB Control

2002 Laboratory skills training programs begin in the Pacific Region

2005 Dr Ingrid Lang is appointed as the first Ann Woolcock Research Fellow. Dr Lang's research is on Genetic influences on causal pathways of acute lower respiratory tract infections in highly susceptible infants

2005 In collaboration with the US Centers for Disease Control and Prevention the ARC Nurse Consultants commence annual training for nurses and health care workers across the Northern Pacific TB Programs

2006 Name changes from Community Health and Tuberculosis Australia (CHATA) to Australian Respiratory Council (ARC), reflecting our wider focus on respiratory health

2007 ARC funds two Aboriginal Tobacco Cessation Projects; The Aboriginal Health and Medical Research Council's BREATHE Project and the Aboriginal Health Council of Western Australia's Beyond the Big Smoke Project

2008 Development of a TB Resource Kit for professional and community education

2009 Funding and technical support for the project - Combating TB in factory workers and the elderly commences. ARC partners with the Cambodian Anti-TB Association to deliver this project

2010 Further development of resources for professional and community education

2010 Dr Jodie Simpson commences as the Ann Woolcock Research Fellow. Dr Simpson's research is on Characterisation and treatment of innate immune dysfunction in older people with obstructive airway disease

2011 ARC contributes funds for training medical officers to build research skills and capacity in future leaders in respiratory public health in Vietnam

2012 ARC becomes a foundation member of the newly formed Lung Health Alliance

2013 ARC celebrates 100 years of service and advocacy for TB and respiratory health in Australia and the Asia Pacific Region

2015 ARC hosted the 5th Conference of The Union Asia Pacific Region, held in Sydney, Australia

2015 FINANCIALS AND ACFID SUMMARY FINANCIALS

DIRECTORS' REPORT

Your Directors present their report on the Company for the financial year ended 31 December 2015.

Australian Respiratory Council
(A Company Limited by Guarantee)
A.B.N. 11 883 368 767

Directors

The Directors at any time during or since the end of the financial period are:

Name and Qualifications Experience and Special Responsibilities

Amanda Julie Christenen
Dip Nursing
Appointed to the Board on 22 January 2001. Executive Director
Interests in contracts: Nil

Clinical Associate Professor Peter Gianoutsos
MB CHB(Univ of Otago), FRACP FCCP
Appointed to the Board on 15 May 2006. Vice President
Interest in contracts: Nil

Robert Eric Horsell OAM
CPA
Appointed to the Board 24 June 1999. Finance Director
Interest in contracts: Nil

Robyn Johnson
GAICD
Appointed to the Board on 5 November 2012
Interest in contracts: Nil

David Macintosh AM
BBS (UTS), FCA
Appointed to the Board 19 June 1997. Vice President
Interest in contracts: Nil

Ian W Ramsay
LL.B (Syd.)
Board member 2008 - February 2012
Reappointed to the Board 5 November 2012
Interest in contracts: Nil

Emeritus Professor John Paul Seale AM
MB BS PhD FRACP
Appointed to the Board 19 June 1997. President
Interest in contracts: Nil

Kerrie Shaw
Dip Nursing
Appointed to the Board 4 February 2013
Interest in contracts: Nil

Professor Iven Young
BSc(Med), MB BS,PhD,FRACP
Appointed to the Board 6 August 1998
Interest in contracts: Nil

Meetings of Directors

The number of Directors' meetings held during the financial period and the number of meetings attended

Name Of Director	Number Held while in Office	Number Attended
Amanda Julie Christensen	4	4
Peter Gianoutsos	4	3
Robert Eric Horsell	4	4
Robyn Johnson	4	3
David Hugh Macintosh	4	3
Ian Ramsay	4	2
John Paul Seale	4	4
Kerrie Shaw	4	3
Iven Hunter Young	4	4

Principal Activities

The principal activity of the Company during the financial year was to provide funding and expertise of research and projects aimed at improving lung health.

The Company's short term objectives are to:

i) continue to build expertise in respiratory health
ii) foster innovation in respiratory health research
iii) deliver and measure positive impacts to communities and research
iv) enhance ARC's role in the country as a unique non-government organisation in the area of lung health
v) advocate to improve respiratory health, particularly in relation to TB and smoking at state, national and international levels.

The Company's long term objectives are to:

i) develop and support innovative and effective approaches to research and development in lung health
ii) to improve lung health in communities, with an emphasis on disadvantaged groups.

To achieve these objectives, the Company has adopted the following Strategies:

i) the Board strives to attract sustainable partnerships
ii) the Board undertakes fundraising
iii) the Board actively seeks funding.

The Company is incorporated under the Corporations Act 2001 and is a Company limited by guarantee. If the Company is wound up, the Constitution states that each member is required to contribute a maximum of $1.00 towards meeting any outstanding obligations of the Company. At 31 December 2015 the collective liability of members was $52 (2014:$44).

AUDITORS' INDEPENDENCE DECLARATION UNDER SECTION 307C OF THE CORPORATION ACT 2001

A copy of the Auditor's Independence Declaration follows this Directors' Report.

Signed in accordance with a resolution of the Board of Directors:

Emeritus Professor J. Paul Seale AM
Director
Sydney, 4 April 2016

Robert Horsell OAM
Director
Sydney, 4 April 2016

Auditor's Independence Declaration Under Section 307C of the Corporations Act 2001 to the Directors of Australian Respiratory Council

I declare that, to the best of my knowledge and belief, during the year ended 31 December 2015 there have been:

i) no contraventions of the Auditor independence requirements as set out in the Corporations Act 2001 in relation to the audit; and
ii) no contraventions of any applicable code of professional conduct in relation to the audit.

BRYAN RUSH & COMPANY
Chartered Accountants

D R Conroy FCA
Principal
Auditor No: 2251
Sydney, 4 April 2016

STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME
For the Year Ended 31 December 2015

	Note	2015 $	2014 $
Revenue	2	505,928	473,908
Depreciation and amortisation expense	3	(11,825)	(8,971)
Research grants, fellowships and scholarships		(100,000)	(78,622)
Project funding		(54,794)	(46,314)
Investment expense		(14,498)	(16,063)
Consultancy fees - Project		(17,728)	(4,000)
Employee benefits expense		(245,732)	(223,383)
Other expenses		(289,559)	(237,758)
Loss before income tax		(228,208)	(141,203)
Income tax expense	1	-	-
Loss for the year		(228,208)	(141,203)
Other comprehensive income after tax:			
Net gain on revaluation of investment property		339,000	-
Net gain/loss on revaluation of financial assets		(96,124)	16,953
Other comprehensive income for the year net of tax		242,876	16,953
Total comprehensive income for the year		14,668	(124,250)

STATEMENT OF FINANCIAL POSITION
As At 31 December 2015

	Note	2015 $	2014 $
ASSETS			
Current Assets			
Cash and cash equivalents	5	458,094	497,270
Trade and other receivables	6	42,415	93,779
Other current assets	7	7,729	7,851
Total Current Assets		**508,238**	**598,900**
Non-Current Assets			
Financial assets	8	2,310,348	2,527,481
Property, plant and equipment	9	44,500	48,838
Investment property	10	1,939,000	1,600,000
Total Non-Current Assets		**4,293,848**	**4,176,319**
TOTAL ASSETS		**4,802,086**	**4,775,219**
LIABILITIES			
Current Liabilities			
Trade and other payables	11	76,575	75,788
Employee entitlements	12	41,746	30,334
Total Current Liabilities		**118,321**	**106,122**
TOTAL LIABILITIES		**118,321**	**106,122**
NET ASSETS		**4,683,765**	**4,669,097**
EQUITY			
Reserves	13	3,203,629	2,881,383
Retained earnings		1,480,136	1,787,714
TOTAL EQUITY		**4,683,765**	**4,669,097**

STATEMENT OF CHANGES IN EQUITY
For The Year Ended 31 December 2015

	Capital Profits Reserves $	Asset Revaluation Reserves $	Retained Earnings/ (Accumulated Losses) $	Total $
Balance at 1 January 2014	2,411,980	452,450	1,928,917	4,793,347
Loss attributable to members	-	-	(141,203)	(141,203)
Total comprehensive income for the year	-	16,953	-	16,953
Transfers on sale of assets	-	-	-	-
Balance at 31 December 2014	**2,411,980**	**469,403**	**1,787,714**	**4,669,097**
Loss attributable to members	-	-	(228,208)	(228,208)
Total comprehensive income for the year	-	242,876	-	242,876
Transfers on sale of assets	-	79,370	(79,370)	-
Balance at 31 December 2015	**2,411,980**	**791,649**	**1,480,136**	**4,683,765**

STATEMENT OF CASH FLOWS
For The Year Ended 31 December 2015

	Note	2015 $	2014 $
Cash Flows From Operating Activities			
Receipts from customers		294,568	128,974
Payments to suppliers and employees		(680,018)	(586,960)
Interest received		12,427	16,351
Distributions received		220,325	245,804
Net cash provided by (used in) operating activities	17	**(152,698)**	**(195,831)**
Cash Flows From Investing Activities			
Proceeds from sale of available-for-sale investments		622,266	-
Payment for property, plant and equipment		(7,487)	-
Payment for available-for-sale investments		(501,257)	(100,000)
Net cash provided by (used in) investing activities		**113,522**	**(100,000)**
Net Increase/(Decrease) in Cash Held		(39,176)	(295,831)
Cash at beginning of financial year		497,270	793,101
Cash at end of financial year	17	**458,094**	**497,270**

NOTES TO AND FORMING PART OF THE ACCOUNTS
For The Year Ended 31 December 2015

Note 1 - Statement of Significant Accounting Policies

Basis of Preparation

Australian Respiratory Council applies Australian Accounting Standards – Reduced Disclosure Requirements as set out in AASB 1053: Application of Tiers of Australian Accounting Standards and AASB 2010–2: Amendments to Australian Accounting Standards arising from Reduced Disclosure Requirements.

The financial statements are general purpose financial statements that have been prepared in accordance with Australian Accounting Standards – Reduced Disclosure Requirements of the Australian Accounting Standards Board (AASB) and the Corporations Act 2001. The Company is a not-for-profit entity for financial reporting purposes under Australian Accounting Standards.

Australian Accounting Standards set out accounting policies that the AASB has concluded would result in financial statements containing relevant and reliable information about transactions, events and conditions. Material accounting policies adopted in the preparation of these financial statements are presented below and have been consistently applied unless stated otherwise.

The financial statements, except for the cash flow information, have been prepared on an accruals basis and are based on historical costs, modified, where applicable, by the measurement at fair value of selected non-current assets, financial assets and financial liabilities. The amounts presented in the financial statements have been rounded to the nearest dollar.

Revenue

Revenues are recognised at fair value of the consideration received net of the amount of goods and services tax (GST) payable to the taxation authority. Exchanges of goods or services of the same nature and value without any cash consideration are not recognised as revenues. Dividend revenue is recognised when the right to receive a dividend has been established. Interest revenue is recognised on a proportional basis taking into account the interest rates applicable to the financial assets. Revenue from investment properties is recognised on an accruals basis in accordance with lease agreements. Donations and bequests are recognised as revenue when received. Income from other sources is recognised when the fee in respect of other products or services provided is receivable.

Income Tax

The Company is registered as a charity and is not subject to income tax. Continued exemption for income tax is subject to the requirements for non profit organisations.

Property, Plant and Equipment

Each class of property, plant and equipment is carried at cost less, where applicable, any accumulated depreciation and impairment losses.

Plant and Equipment

Plant and equipment are measured on the cost basis and are therefore carried at cost less accumulated depreciation and any accumulated impairment losses. In the event the carrying amount of plant and equipment is greater than its estimated recoverable amount, the carrying amount is written down immediately to its estimated recoverable amount and impairment losses are recognised either in profit or loss or as a revaluation decrease if the impairment losses relate to a revalued asset. A formal assessment of recoverable amount is made when impairment indicators are present.
Plant and equipment that have been contributed at no cost, or for nominal cost, are valued and recognised at the fair value of the asset at the date it is acquired.

Depreciation

The depreciable amount of all fixed assets, including buildings and capitalised lease assets, but excluding freehold land, is depreciated on a straight line basis and diminishing value basis over their useful lives to the Company commencing from the time the asset is held ready for use.

The depreciation rates used for each class of depreciable assets are:

Class of Fixed Asset	Depreciation Rate
Plant and Equipment	7.5% - 50%

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at each balance sheet date.An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount. Gains and losses on disposals are determined by comparing proceeds with the carrying amount. These gains or losses are included in the statement of comprehensive income. When revalued assets are sold, amounts included in the revaluation surplus relating to that asset are transferred to retained earnings.

Impairment of Assets

At each reporting date, the Company reviews the carrying values of its tangible assets to determine whether there is any indication that those assets have been impaired. If such an indication exists, the recoverable amount of the asset, being the higher of the asset's fair value less costs to sell and value in use, is compared to the asset's carrying value. Any excess of the asset's carrying value over it's recoverable amount is expensed to the income statement.

Employee Benefits

Provision is made for the Company's liability for employee benefits arising from services rendered by employees to balance date. Employee benefits expected to be settled within one year together with benefits arising from wages and salaries, annual leave and sick leave which will be settled after one year, have been measured at the amounts expected to be paid when the liability is settled plus related on-costs. Other employee benefits payable later than one year have been measured at the present value of the estimated future cash outflows to be made for those benefits.

NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended 31 December 2015

Contributions are made by the Company to employee superannuation funds and are charged as expenses when incurred.

Goods and Services Tax (GST)
Revenues, expenses and assets are recognised net of the amount of GST, except where the amount of GST incurred is not recoverable from the Australian Tax Office. In these circumstances the GST is recognised as part of the cost of acquisition of the asset or as part of an item of the expense. Receivables and payables in the statement of financial position are shown inclusive of GST.

Cash and Cash Equivalents
For the purposes of the cash flows statement, cash includes cash on hand and at call deposits with banks or financial institutions, investments in money market instruments maturing within less than two months and net of bank overdrafts.

Comparative Figures
Where required by Accounting Standards comparative figures have been adjusted to conform with changes in presentation for the current financial year.

Financial Instruments
Recognition and initial measurement

Financial instruments, incorporating financial assets and financial liabilities, are recognised when the entity becomes a party to the contractual provisions of the instrument. Trade date accounting is adopted for financial assets that are delivered within timeframes established by marketplace convention.

Financial instruments are initially measured at cost plus transactions cost where the instrument is not classified as at fair value through profit or loss. Transaction costs related to instruments classified as at fair value through profit or loss are expensed to profit or loss immediately. Financial instruments are classified and measured as set out below.

1. Fair value estimation
   The fair value of financial assets and financial liabilities must be estimated for recognition and measurement or for disclosure purposes.

   The fair value of financial instruments traded in active markets such as trading and available-for-sale securities is based on quoted market prices at the balance sheet date. The quoted market price used for financial assets held by the Company is the current bid price; the appropriate quoted market price for financial liabilities is current ask price.

2. Loans and receivables
   Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market and are subsequently measured at amortised cost using the effective interest rate method.

3. Held to maturity investments
   Held to maturity investments are non-derivative financial assets with fixed maturities and fixed or determinable payments, and it is the entity's intention to hold these investments to maturity. They are subsequently measured at amortised cost using the effective interest rate method.

4. Available for sale financial assets
   Available for sale financial assets are non-derivative financial assets that are either designated as such or that are not classified in any of the other categories. They comprise investments in the equity of other entities where there is neither a fixed maturity nor fixed or determinable payments.

5. Financial Liabilities
   Non-derivative financial liabilities (excluding financial guarantees) are subsequently measured at amortised cost using the effective interest rate method.

Critical Accounting Estimates and Judgments
The Directors evaluate estimates and judgements incorporated into the financial report based on historical knowledge and best available current information. Estimates assume a reasonable expectation of future events and are based on current trends and economical data, obtained both externally and within the group.

Key Estimates - Impairment
The Company assesses impairment at each reporting date by evaluating conditions specific to the Company that may lead to impairment of assets. Where an impairment trigger exists, the recoverable amount of the assets is determined.

Value in use calculations performed in assessing recoverable amounts incorporated a number of key estimates.

Key Judgments - Provision for Impairment of Receivables
The Directors believe that the amount included in accounts receivable is recoverable and non provision for impairment has been made at the end of the financial year.

	2015 $	2014 $
2. Revenue		
Operating Activities		
Appeals	71,495	74,718
APR 2015 Conference	134,993	-
Net profit/(loss) on sale of investments	(52,195)	-
Rental revenue for property investment	50,697	49,197
Interest received	12,427	16,351
Fund distributions from investments	182,962	216,053
Legacies & donations	27,716	20,000
Member subscriptions	1,045	1,368
Miscellaneous income	5,559	44,861
Refund of franking credits	37,363	29,751
Sundry income	33,866	21,609
Total Revenue	505,928	473,908
3. Profit From Ordinary Activities		
Expenses		
Depreciation of Non-Current Assets:		
Plant and equipment	11,825	8,971
4. Auditor's Remuneration		
Remuneration of the Auditor of the Company for:		
- Auditing the Financial Report	12,800	12,300
5. Cash and Cash Equivalents		
Cash on hand	1,180	1,243
Cash at bank	456,914	496,027
	458,094	497,270
6. Trade and Other Receivables		
Trade debtors	3,424	59,756
Other debtors	38,991	34,023
	42,415	93,779
7. Other Current Assets		
Prepayments	7,729	7,851

NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended 31 December 2015

	2015 $	2014 $
8. Financial Assets		
Non Current		
Listed shares - at fair value	1,627,671	1,758,195
Managed funds - at fair value	682,677	769,286
Total financial assets	**2,310,348**	**2,527,481**
9. Property, Plant & Equipment		
Non Current		
Plant & equipment at cost	112,706	133,707
Less: accumulated depreciation and impairment	(68,206)	(84,869)
Total property, plant and equipment	**44,500**	**48,838**

Movements in Carrying Amounts

Movement in the carrying amounts for each class of property, plant and equipment between the beginning and the end of the current financial year:

	Plant and Equipment $	Total $
Balance at the beginning of year	48,838	48,838
Additions	7,487	7,487
Disposals	-	-
Depreciation expense	(6,397)	(6,397)
Full depreciation for asssts under $200	(5,428)	(5,428)
Carrying amount at the end of year	44,500	44,500

10. Investment Property		
Non Current		
Investment property - at fair value directors' valuation	1,939,000	1,600,000
Total	**1,939,000**	**1,600,000**

Investment Property Revaluations

At 31 December 2015, the Directors have performed a Directors' valuation on the investment porperty. The Directors have reviewed the market data reports and believed the carrying amount of the property correctly reflects the fair value less costs of disposal at 31 December 2015.

NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended 31 December 2015

		2015 $	2014 $
11.	**Trade and Other Payables**		
	Unsecured liabilities		
	Trade payables	15,223	3,902
	Sundry payables and accrued expenses	61,352	71,886
	Total	**76,575**	**75,788**
12.	**Employee Entitlements**		
	Provision for annual leave	27,810	18,067
	Provision for long service leave	13,936	12,267
	Total	**41,746**	**30,334**
	Number of employees		
	Number of employees at year end	3	3
13.	**Reserves**		
	Capital profits reserve	2,411,980	2,411,980
	Asset revaluation reserve	791,649	469,403
	Total	3,203,629	2,881,383
	Nature and purpose of reserves		
	(a) Capital Profits		
	The capital profits reserve is used to accumulate realised capital profits		
	Balance at end of year	2,411,980	2,411,980
	(b) Asset revaluation		
	The asset revaluation reserve is used to record increments and decrements in the value of non current assets		
	Balance at beginning of year	469,403	452,450
	Revaluation increment/(decrement)	242,876	16,953
	Transfers	79,370	-
	Balance at end of year	**791,649**	**469,403**

14. Members' Guarantee

The Company is limited by guarantee. If the Company is wound up, the Constitution states that each member is required to contribute a maximum of $1 each towards meeting any outstanding obligations of the Company. At 31 December 2015 the number of members was 52 (2014:44).

NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended 31 December 2015

15. Financial Risk Management

(a) Interest Rate Risk

The Company's financial instruments consist mainly of deposits with banks, local money market instruments, short-term investments, accounts receivable and payable, and investment available for sale.

The carrying amounts for each category of financial instruments, measured in accordance with AASB 139 as detailed in the accounting policies to these financial statements, are as follows:

	2015 $	2014 $
Financial assets		
Cash and cash equivalents	458,094	497,270
Trade and other receivables	42,415	93,779
Other current assets	7,729	7,851
Financial assets at fair value through profit or loss	2,310,348	2,527,481
Total financial assets	**2,818,586**	**3,126,381**
Financial liabilities at amortised cost:		
– trade and other payables	76,575	75,788
Total financial liabilities	**76,575**	**75,788**

Net Fair Values

(i) For listed available-for-sale financial assets and financial assets at fair value through profit or loss the fair values have been based on closing quoted bid prices at the end of the reporting period.

In determining the fair values of the unlisted available-for-sale financial assets, the Directors have used inputs that are observable either directly (as prices) or indirectly (derived from prices).

(ii) Fair values of held-to-maturity investments are based on quoted market prices at the ending of the reporting period.

16. Key Management Personnel

Any person(s) having authority and responsibility for planning, directing and controlling the activities of the Company, directly or indirectly, including any Director (whether executive or otherwise) of the Company is considered key management personnel.

The totals of remuneration paid to key management personnel (KMP) of the Company during the year are as follows:

	2015 $	2014 $
Key management personnel compensation	139,127	131,358

NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended 31 December 2015

	2015 $	2014 $
17. Cash Flows Information		
(a) Cash at the end of the financial year as shown in the cash flow statement is reconciled to items in the balance sheet as follows:		
Cash and cash equivalents	**458,094**	**497,270**
(b) Reconciliation of Cash Flow from Operations with Profit after Income Tax		
Net income/loss for the period	(228,208)	(141,203)
Cash flows excluded from profit attributable to operating activities		
Non cash flows in profit		
Depreciation	11,825	8,971
Net (gain)/loss on disposal of investments		-
Changes in assets and liabilities, net of the effects of purchase and disposal of subsidiaries		
(Increase)/decrease in trade and term receivables	51,364	(84,531)
(Increase)/decrease in prepayments	122	(3,926)
Increase/(decrease) in trade payables and accruals	787	18,600
Increase/(decrease) in provision for employee benefits	11,412	6,258
Net cash inflow/(outflow) from operating activities	**(152,698)**	**(195,831)**

Information and declarations to be furnished under the Charitable Fundraising Act 1991, Section 23

(a) Details of aggregate gross income and total expenses of fundraising appeals		
Gross proceeds from fundraising appeals	99,211	74,718
Less: Total direct costs of fundraising	31,987	29,462
Net surplus from fundraising activities	**67,224**	**45,256**

(b) Statement showing how funds received were applied to charitable purposes

This surplus is used for research grants, fellowships, scholarships and projects.

(c) Fundraising appeals conducted during the financial period

Appeals only

(d) Comparisons

Total cost of fundraising/gross income from fundraising	32%	39%
Net surplus from fundraising/gross income from fundraising	68%	61%
Total cost of services/total expenditure	100%	100%
Total cost of services/total income received	32%	39%

SUMMARY FINANCIAL REPORT - BALANCE SHEET
As At 31 December 2015

	Note	2015 $	2014 $
ASSETS			
Current Assets			
Cash and cash equivalents	5	458,094	497,270
Trade and other receivables	6	42,415	93,779
Other current assets	7	7,729	7,851
Total Current Assets		**508,238**	**598,900**
Non-Current Assets			
Financial assets	8	2,310,348	2,527,481
Property, plant and equipment	9	44,500	48,838
Investment property	10	1,939,000	1,600,000
Total Non-Current Assets		**4,293,848**	**4,176,319**
TOTAL ASSETS		**4,802,086**	**4,775,219**
LIABILITIES			
Current Liabilities			
Trade and other payables	11	64,292	63,042
Borrowings	11	337	800
Provisions	12	41,746	30,334
Other financial liabilities	11	11,946	11,946
Total Current Liabilities		**118,321**	**106,122**
TOTAL LIABILITIES		**118,321**	**106,122**
NET ASSETS		**4,683,765**	**4,669,097**
EQUITY			
Reserves	13	3,203,629	2,881,383
Retained earnings		1,480,136	1,787,714
TOTAL EQUITY		**4,683,765**	**4,669,097**

At the end of the financial year the Australian Respiratory Council had no balances in the Inventories, Assets held for sale, Non current Trade and other receivables, Intangibiles, Current tax liabilities and Non Current Liabilities categories.

The above disclosures are prepared in accordance with the requirements set out in the ACFID Code of Conduct.

SUMMARY FINANCIAL REPORT - INCOME STATEMENT
For the year ended 31 December 2015

	2015 $	2014 $
REVENUE		
Donation and Gifts - Monetary & Non monetary	71,495	94,718
Bequests and Legacies	27,716	-
Grants		
AusAid	-	-
Other Australian	20,000	32,716
Other overseas	-	12,000
Investment Income	238,571	311,316
Other Income	148,146	23,158
TOTAL REVENUE	**505,928**	**473,908**
EXPENDITURE		
International Aid and Development		
International programs		
Funds to international projects	47,209	56,932
Program Support Costs	15,735	31,006
Community education	5,763	7,314
Fundraising Costs		
Public	31,987	29,462
Government, multilateral and private	-	-
Accountability and Administration	480,430	395,412
Non - Monetary Expenditure	-	-
Total International Aid and Development Programs Expenditure	**581,124**	**520,126**
Domestic projects	153,012	94,985
TOTAL EXPENDITURE	**734,136**	**615,111**
EXCESS/(SHORTFALL) OF REVENUE OVER EXPENDITURE	(228,208)	(141,203)
Net gain/(loss) on revaluation of financial assets and investment property	242,876	16,953
EXCESS/(SHORTFALL) OF REVENUE OVER EXPENDITURE	14,668	(124,250)

During the financial year the Australian Respiratory Council had no transactions in the Revenue or Expenditure for International Political or Religious Adherence Promotion Program categories.

The above disclosures are prepared in accordance with the requirements set out in the ACFID Code of Conduct.

SUMMARY FINANCIAL REPORT
ARC's Table of Cash Movements for Designated Purposes for the year ended 31 December 2015

Total for	Cash available at the beginning of the financial period $	Cash raised during the financial period $	Cash disbursed during the financial period $	Cash available at the end of the financial period $
Australian Research Grants & Fellowships	(142,239)	60,000	(118,000)	(200,239)
Australian Projects	66,780	20,000	(35,013)	51,767
International Projects	(205,566)	39,211	(62,943)	(229,298)
Community Education	(22,732)	-	(5,763)	(28,495)
Other Purposes	801,027	521,630	(458,298)	864,359
Total	**497,270**	**640,841**	**(680,017)**	**458,094**

NOTE: In the year ended 31 December 2015, the Board allocated an amount for international projects. The shortfall in cash reserves is compensated by cash raised from investment activities.

STATEMENT OF CHANGES IN EQUITY
For The Year Ended 31 December 2015

	Capital profits Reserves $	Asset Revaluation Reserves $	Retained Earnings/ (accumulated losses) $	Total $
Balance at 1 January 2014	2,411,980	452,450	1,928,917	4,793,347
Excess of revenue over expense	-	-	(141,203)	(141,203)
Total comprehensive income for the year	-	16,953	-	16,953
Transfers on sale of assets	-	-	-	-
Balance at 31 December 2014	2,411,980	469,403	1,787,714	4,669,097
Excess of revenue over expense	-	-	(228,208)	(228,208)
Total comprehensive income for the year	-	242,876	-	242,876
Transfers on sale of assets	-	79,370	(79,370)	-
Balance at 31 December 2015	**2,411,980**	**791,649**	**1,480,136**	**4,683,765**

The above disclosures are prepared in accordance with the requirements set out in the ACFID Code of Conduct.

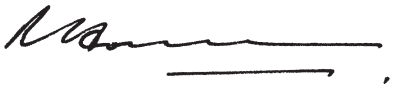
DIRECTORS' DECLARATION

The Directors of the Company declare that:

1. The financial statements and notes are in accordance with the Corporations Act 2001:
   - **i.** comply with Australian Accounting Standards – Reduced Disclosure Requirements; and
   - **ii.** give a true and fair view of the financial position as at 31 December 2015 and performance for the year ended on that date of the Company;
2. In the Directors' opinion there are reasonable grounds to believe that the Company will be able to pay its debts as and when they become due and payable.

This declaration is made in accordance with a resolution of the Board of Directors.

Emeritus Professor J. Paul Seale AM
Director
Sydney, 4 April 2016



Robert Horsell OAM
Director
Sydney, 4 April 2016

INDEPENDENT AUDITOR REPORT
To The Members of the Australian Respiratory Council

Australian Respiratory Council
(A Company Limited by Guarantee)
A.B.N. 11 883 368 767

Report on the Financial Report
We have audited the accompanying financial report of the Australian Respiratory Council, which comprises the statement of financial position as at 31 December 2015, the statement of profit or loss, statement of comprehensive income, statement of changes in equity and statement of cash flows for the year then ended, notes comprising a summary of significant accounting policies and other explanatory information, and the Directors' declaration.

Directors' Responsibility for the Financial Report
The Directors of the Company are responsible for the preparation of the financial report that gives a true and fair view in accordance with Australian Accounting Standards – Reduced Disclosure Requirements and the Corporations Act 2001 and for such internal control as the Directors determine is necessary to enable the preparation of the financial report that is free from material misstatement, whether due to fraud or error.

Auditor's Responsibility
Our responsibility is to express an opinion on the financial report based on our audit. We conducted our audit in accordance with Australian Auditing Standards. Those standards require that we comply with relevant ethical requirements relating to audit engagements and plan and perform the audit to obtain reasonable assurance whether the financial report is free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial report. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial report, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Company's preparation of the financial report that gives a true and fair view in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the Directors, as well as evaluating the overall presentation of the financial report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Independence
In conducting our audit, we have complied with the independence requirements of the Corporations Act 2001.

Auditor's Opinion
In our opinion,

(a) the financial report of Australian Respiratory Council is in accordance with the Corporations Act 2001, including:
- **i.** giving a true and fair view of the Company's financial position as at 31 December 2015 and of its' performance for the year ended on that date;
- **ii.** complying with Australian Accounting Standards - Reduced Disclosure Requirements and the Corporations Regulations 2001; and
- **iii.** complying with Div 60 of the ACNC Act 2012.

(b) We have also audited the summary financial reports of the Australian Respiratory Council which in our opinion are in accordance with the requirements set out in the ACFID Code of Conduct.

BRYAN RUSH & CO
Chartered Accountants

D R Conroy FCA
Principal
Auditor No: 2251
Sydney, 4 April 2016

BRYAN RUSH & Co
CHARTERED ACCOUNTANTS

BRYAN RUSH & CO
Chartered Accountants

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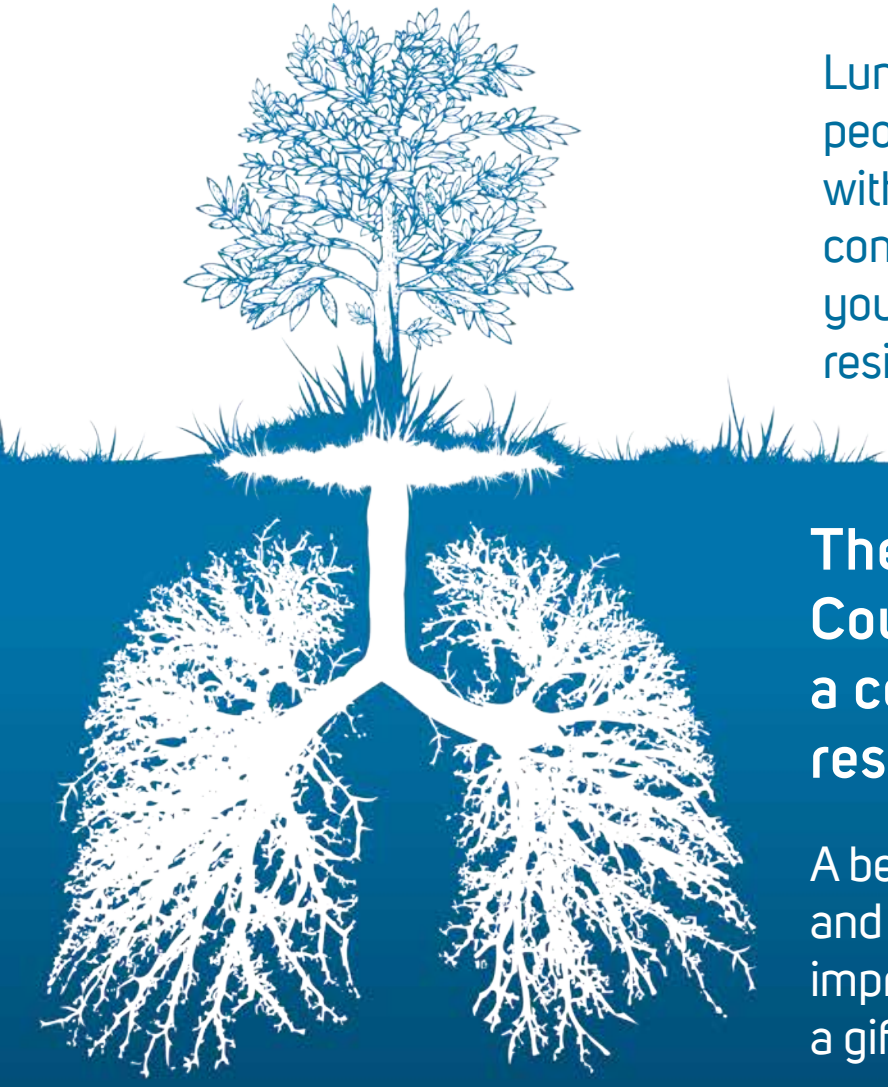
GIVING TOWARDS A COMMUNITY FREE OF RESPIRATORY ILLNESS



Lung disease affects many different people; an Australian war veteran with chronic lung disease, a person continually exposed to smoking, a young child in the Pacific with drug resistant tuberculosis.

The Australian Respiratory Council's vision is for a community free of respiratory illness.

A bequest, large or small, is a simple and enduring way you can help to improve people's quality of life. Give a gift towards a better Life.

arc
australian respiratory council
prevention and cure of respiratory illness

For more information or a copy of ARC's '*Your Future, Your Security*', contact us on (02) 9223 3144 or email arc@thearc.org.au

www.thearc.org.au

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prevention and cure of respiratory illness

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