

arc
australian respiratory council
prevention and cure of respiratory illness

2020 ANNUAL REPORT

NO. 107

Our Patrons



Her Excellency The Honourable Margaret Beazley AC QC Governor of New South Wales and Mr Dennis Wilson

The Australian Respiratory Council (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.

The ARC welcomes feedback. Please send feedback or complaints to arc@thearc.org.au or write to the Executive Director, Australian Respiratory Council, PO Box 942 Broadway, NSW 2007.

The 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

ACFID MEMBER

The Australian Respiratory Council 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

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

REGISTERED CHARITY
acnc.gov.au/charityregister

The Registered Charity Tick is a way for registered charities to easily show the public that they are registered with the Australian Charities and Not-for-profits Commission (ACNC), and it will also help members of the public find information about the charity on the Charity Register. The ACNC encourages members of the public to use the information on the Charity Register to make informed giving decisions.

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Our Vision

A world free of tuberculosis and lung disease.

Our Mission

The mission of Australian Respiratory Council is to improve lung health for vulnerable communities in Australia and the Indo-Pacific through translation of research and evidence-based practice into sustainable health solutions.

Organisational Values

The values that ARC strives to reflect and embody include the following:

- Accountability to stakeholders
- Ethical and sustainable practice
- Credibility and professionalism
- Consultative and participatory practices
- Leadership in respiratory health
- Maintaining a development based focus
- Contributing to intellectual and professional development
- Implementing evidence based practices and activities that are community led, innovative, efficient, caring, compassionate and respectful.

ARC PRESIDENTS REPORT 2020



As President, I am pleased to report on the activities and outcomes of the Australian Respiratory Council (ARC) in 2020. My report will highlight the work undertaken by our organisation, our project partners and funding recipients over the year.

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To begin my report I would like to acknowledge the challenges and impact of the COVID-19 pandemic over the past year. We have seen countries and communities severely affected by the virus, frontline health care and essential workers working tirelessly to save lives, researchers and scientists focussed on developing vaccines and now the implementation of global vaccination programs, with many countries already commencing vaccinations for the most vulnerable in their communities. It is essential that every country has access to COVID vaccine as the most vulnerable members of communities will be disproportionately affected by the virus, this includes people with lung disease, tuberculosis, those with immune suppression and the homeless. These are the people that ARC works with and supports through our funding and activities. As the world adjusted to the realities of the pandemic, ARC remained committed to fulfilling its mission of a world free of tuberculosis and lung disease. Our programs, advocacy efforts and funding for respiratory research continued in 2020.

We have been indeed fortunate to have the continued support of our Patrons, Her Excellency the Honourable Margaret Beazley AC QC, Governor of New South Wales and Mr Dennis Wilson. Thank you for reaching out to us over the past year through the pandemic, we appreciated your messages and acknowledgement of the work of our organisation over the past century to prevent and end the suffering associated with lung disease, tuberculosis and respiratory illnesses. For further information on our Patrons message of support please go to the following link on ARC's website to view the recorded message: https://www.thearc.org.au/

I would like to acknowledge the retirement of my friends and colleagues Clinical Professor Iven Young AM and Associate Professor Peter Gianoutsos from the Board of Directors in December, 2020 and March 2021 respectively. On behalf of the Directors and staff of ARC, I wish both Iven and Peter well for the future and thank them for their outstanding service over many years.

Iven in his twenty two year tenure as a Director and Chair of ARC's Research Committee has made a significant contribution to the work and activities of the organisation. In recognition of Iven's contribution to ARC and respiratory medicine Iven was appointed a Life Governor in 2003 and a Member of the Order of Australia in June 2016 "for significant service to respiratory and sleep medicine."

Iven has been instrumental in determining ARC's research priorities and activities and has provided wise counsel in this regard. I am pleased to report under Iven's leadership and tenure ARC has awarded just over $3 million dollars ($3,006,775) for medical research relating to respiratory diseases.

Associate Professor Peter Gianoutsos was appointed to ARC's Board of Directors in 2006 and has actively served as a Vice President for twelve years and as a member of ARC's Finance Committee for the past fourteen years. I have appreciated and valued Peter's contribution to the governance and work of ARC over this time and thank him for his contribution to the success of the organisation. In recognition of Peter's contribution to ARC and respiratory medicine, he was elected a Life Governor of ARC in 2012.



David Macintosh, Iven Young & Peter Gianoutsos

I am pleased to report this year ARC implemented an educational scholarship program for nurses undertaking the Graduate Diploma/ Master of Nursing (TB Management) course through the Western Sydney University School of Nursing and Midwifery. The scholarship program has been named in honour of Sheila Simpson OAM, a long term member of ARC and a well-known nursing leader. ARC's contribution to the course and scholarship program demonstrates our commitment to supporting capacity building for the Australian TB Program through the development of specialist nurses. The inaugural grants were awarded to Cathy McKenna, Sherri Towle and Amy Peachy. Further information about the course, scholarship program and recipients is available on pages 20 and 21 of this report.

At the time of writing the annual report I would also like to acknowledge the appointment of one of our Directors, Greg Fox as a Professor of Respiratory Medicine. Congratulations on your appointment and recognition of expertise in the field of respiratory medicine. Greg has been appointed as the Chair of ARC's Research Committee and will take over the leadership of ARC's research activities from Iven Young.

Acknowledgement and thanks

I would like to extend my personal thanks to ARC's Directors who continue to dedicate their time and expertise to the organisation,

your contribution is greatly valued and appreciated. The Directors are actively engaged in the work and success of the organisation.

In 2020, the Finance Team, led by Chris Turner supported by Peter Gianoutsos, Robyn Johnson and the staff of the ARC worked to ensure that ARC was able to continue funding operational, research and project activities particularly during the pandemic. Further information on ARC's financial statements are detailed on pages 34 to 54 of the annual report.

On behalf of Iven Young and Greg Fox, I would like to acknowledge the ongoing contribution of the Research Committee in the review and allocation of ARC's research grants. Thank you for your support and time in assisting ARC to achieve our research goals. The past year has shown research to be fundamental in the fight against COVID 19, tuberculosis and lung disease. We are pleased to be able to be able to continue to support research initiatives and innovation. Further information on the grants awarded this year to ACTnet and through the ARC Research Support Grant Scheme are included in the annual report on pages 10 to 17.

I would like to thank Jean Santos and Robyn Johnson for contributing to the review of ARC's communication and social media strategies, this work will be ongoing in the coming year. I would like to acknowledge Ian Ramsay's counsel and advice on operational, risk and governance matters, your advice and support is greatly appreciated.

At the core of the values of the ARC is the approach to working in partnership with other agencies. In 2020, ARC continued to work with The International Union Against TB and Lung Disease (The Union), the US Centers for Disease Control and the Pacific Island Health Officers Association to fund and deliver projects, provide training and technical support for health care workers, and promote respiratory health and global elimination of tuberculosis.

I would like to thank the ARC Nurse Consultants Group (Pam Banner, Amanda Christensen and Kerrie Shaw) for their ongoing contribution to the project work and activities that ARC supports and delivers within the region. The expertise and ongoing commitment demonstrated by the group to ARC, our partners and projects is greatly valued.

This year, Kerrie Shaw led the work to develop the Graduate Diploma/Master of Nursing (Tuberculosis Management) offered by Western Sydney University. The course the first of its kind internationally will contribute to workforce development and capacity building in Australia and beyond. This course is an important legacy and commitment to capacity building and professional development for Nurses. I would like to thank Kerrie for her outstanding work and dedication to the development of the course.

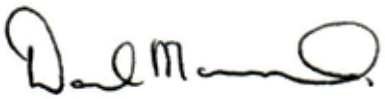
Further information on ARC's project activities and funding are included in the annual report on pages 22 to 27.

I would like to acknowledge the grants received this year, from the US Centers for Disease Control and Prevention (CDC) and the Bowlers Club of NSW Ltd. These grants continue to support ARC's work and project activities. The CDC provided funding for training, mentoring and support for nurses and outreach workers within the US Affiliated Pacific Islands. Funding from the Bowlers Club of NSW Ltd was utilised to support homeless and vulnerable people with TB which has been particularly needed with the hardship experienced by many during the pandemic. Providing financial support for food, accommodation and transport for vulnerable people with tuberculosis is an important strategy to support treatment completion and reduce the individual and public health risks associated with the disease. I would like to thank both organisations for their financial contribution towards the work of ARC.

My thanks and those of the Board are extended to ARC's Investment Advisor Daniel Meech from Koda Capital for his financial guidance in 2020 and to David Conroy and Patryk August, from Conroy Audit & Advisory for their expertise and assistance in meeting our annual auditing responsibilities.

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. I hope through this report, our publications and website (www.thearc.org.au) we can share with you how your donations contribute to respiratory health and the work of ARC, particularly at this challenging time when the world is impacted by a deadly respiratory virus, COVID – 19.

Finally, to Amanda Christensen our Executive Director, thank you so much for your commitment, loyalty and dedication to our wonderful organisation which has benefited from your amazing work.



David Macintosh AM
President

GOVERNANCE

BOARD OF DIRECTORS

AMANDA CHRISTENSEN AM
Registered Nurse



Appointed as the ARC Executive Director from April 2008 to May 2009 and April 2013 – Present. NSW Tuberculosis (TB) Program Manager 1997- 2013; various positions in public health for over twenty-five years including: clinical nurse consultant in public health Corrections Health Service and TB prevention and control services for the NSW Ministry of Health. Member of the NSW Ministry of Health TB Advisory Committee 1997 to Present. Member of the Commonwealth Department of Health National TB Advisory Committee 1997 – 2013. Appointed to the Board of ARC in 2001. Elected as a Life Governor of ARC in 2011. Treasurer & Executive Committee Member for the International Union Against TB and Lung Disease (The Union) Asia Pacific Region 2015 to Present. Programme Secretary of The Union Nursing and Allied Health Professionals Sub–Section 2017 – 2019. Chair of the Nurses and Allied Health Professionals Sub-Section of The Union 2019 to Present. Appointed a Member of the Order of Australia June 2019 "for service to community health particularly to respiratory diseases".

PROFESSOR GREG FOX
PhD MIPH FRACP MB BS BSc(Med) GAICD



Professor in Respiratory Medicine at Sydney University and Respiratory Physician at Royal Prince Alfred Hospital, Sydney. Area Director of Tuberculosis Services, Sydney Local Health District. Research Leader for the Woolcock Institute of Medical Research, and jointly leads the Woolcock's Vietnam research team. Professor Fox heads several NHMRC-funded clinical trials and translational research studies relating to tuberculosis, lung disease and antimicrobial resistance. His research aims to develop new approaches to TB control, COPD, asthma and tobacco control in resource-limited settings. Appointed to the Board of ARC in 2017.

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; Chairman of the NSW Branch of the Royal Australasian College of Physicians 1978 – 1982; 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.

ROBYN JOHNSON
GAICD



Robyn Johnson has had an extensive career in the event and tourism sector, managing her own conference and exhibitions company and working with national and international not-for-profit (NFP) organisations. Robyn has held senior management roles including most recently Chief Executive Officer of peak body Meetings & Events Australia that offers accredited education and training programs, conducts research into industry trends and advocates on behalf of the meetings and events sector. Robyn is currently working with government and industry on new regional programs in response to impact of COVID-19 on the visitor economy. Robyn is a graduate of the Australian Institute of Company Directors and has a background in the development and implementation of business growth strategies. 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; Governor, Woolcock Institute of Medical Research 2000-2011; Director, The Australian Lung Foundation 1994-2013; Governor, St Vincent's Hospital, Curran Foundation; Life Governor, Melanoma Institute of Australia; Deputy Chairman, Ainsworth Charitable Foundation 2016 – Present; Executive Chairman, Manager Director and Independent Director of ASX listed Public Companies and private Companies over 28 years; 35 years of Senior Management and Director level in the Transport and Construction Industries in Australia and Europe; Actively involved in the Surf Life Saving movement for over 50 years; Life Member, Long Reef Surf Life Saving Club Inc.; Life Member - Collaroy Surf Life Saving Club Inc.; Life Member – City Tattersalls Club ; Director, Vice President - United Nations Australia Association (NSW) 2017 – 2019; Appointed Australia's United Nations Goodwill Ambassador Oceans – Life Under Water SDG-14 and The Pacific, 2018 – 2019 and Principal Advisor, Marine Life, and Oceans and The Pacific – United Nations Association of Australia 2019 - Present; Awarded Honorary Associate Life Membership TSANZ 2020; Appointed to the Board of ARC in 1997; President of ARC 2000-2013; 2019 - Present. Vice President of ARC 2013 - 2019; Elected Life Governor of ARC in 2010.

IAN W. RAMSAY

LL.B (Syd.)



Solicitor, Supreme Court of NSW; General Manager and Board Director, WorkCover Authority of 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 – Present.

JEAN MARIE SANTOS

BSCS IT



Bachelor of Science in Computer Science major in Information Technology with a career spanning over 20 years of experience, successfully delivering business improvement, business transformation, infrastructure and application projects globally. Presently employed at Lendlease as Product Owner holding accountability over new innovations & leveraging technologies to deliver business value. Jean's acquired skills in corporate social responsibility, environmental awareness and philanthropy has earned her the positions as Director of The Australian Respiratory Council 2019-Present, Non-Executive Director for the United Nations Association of Australia (UNAA) NSW Division 2018-Present, Director of the UNAA National Peace Program 2013-2018 and UN Women Australia NSW Chapter Executive Committee 2012-2014.

KERRIE SHAW

Registered Nurse



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.

CHRISTPOHER TURNER

BCom Dip FS FPA



Principal Financial Planner for 'Turner Wealth Pty Ltd' (Corporate Authorised Representative (No.1241514) of Capstone Financial Planning Pty Ltd. ABN 24 093 733 969. Australian Financial Services License No.223135. December 2019 – to Current; Principal Financial Planner for 'Turner Wealth Pty Ltd' (Corporate Authorised Representative of Commonwealth Financial Planning Limited) May 2016 – December 2019; Senior Financial Planner - Relationship Managed Clients (Representative of Commonwealth Financial Planning Limited) Oct 2010 – May 2016; Branch Financial Planner (Inner and Mid-West suburbs of Sydney) (Representative of Commonwealth Financial Planning Limited) May 2007 – October 2010; Business Analyst / Project Manager (CMLA) (Commonwealth Bank of Australia) January 2004 – May 2007, Diploma of Financial Planning 2006; Manager of Operations/Projects, Resource Planning (Commonwealth Bank of Australia) September 2002 – January 2004; Service Consultant / Resource Analyst (Commonwealth Bank of Australia) August 1999 – September 2002; Senior Sales & Marketing Manager (Sarran Pty Ltd) 1994 – 1995; B. Commerce Newcastle University 1990 – 1993. Appointed to Board of ARC as Finance Director in May 2017.

CLINICAL PROFESSOR IVEN YOUNG AM

BSc (Med), MB BS, PhD FRACP



Senior Physician, Department of Respiratory and Sleep Medicine, Royal Prince Alfred Hospital (RPAH) 2012 - Present; Visiting Medical Officer, RPAH 1979-1985; Senior Staff Specialist in Respiratory Medicine, RPAH 1985- 2012; Post-Doctoral Fellow, University of California, San Diego 1976-1978; Research Fellow, University of Sydney 1974-1976; Respiratory Physician (FRACP) 1975 - Present; Member, Thoracic Society of Australia and New Zealand; 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, Physician Training Council, HETI 2010-2019; Board Member Woolcock Institute of Medical Research 1998 - 2017 when appointed a distinguished alumnus. Appointed to the Board of ARC in 1998, resigned as a Director 31 December 2020. Elected Life Governor of ARC in 2003. Chair of Research Committee. Awarded the Society Medal of the Thoracic Society of Australia and New Zealand at the Perth Annual Scientific Meeting, April 2016. Appointed a Member of the Order of Australia on 13 June 2016 "For significant service to respiratory and sleep medicine."

RESEARCH COMMITTEE



Clinical Professor Iven Young AM (Outgoing Chair)
Chair, Physicians Training Council.



Professor Greg Fox (Incoming Chair)
NHMRC Career Development Fellow and Professor in Respiratory Medicine at Sydney University.



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



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.



Associate Professor Justin Denholm
Medical Director, Victorian Tuberculosis Program, Melbourne Health; and Principal Research Fellow, Department of Microbiology and Immunology, University of Melbourne.



David Macintosh AM
ARC President (ex officio).



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

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 - 2019	Emeritus Professor J Paul Seale AM
2019 - Present	David Hugh Macintosh 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 AM
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 AM
2011	Professor Gavin Frost
2012	Robert Horsell OAM
2012	Clinical Associate Professor Peter Gianoutsos

UNDERSTANDING THE TRUE BURDEN OF PAEDIATRIC RESPIRATORY SYNCYTIAL VIRUS (RSV) IN ORDER TO OPTIMISE PREVENTION PROGRAMS



Dr Hannah C Moore, Telethon Kids Institute, University of Western Australia, Western Australia

Interim Progress Report

Project Aims:

1. Estimate the under-ascertainment fraction of RSV infection
2. Assess the impact of an infant vaccination strategy from population-wide RSV transmission models
3. Obtain approvals for data linkage and extraction

Respiratory syncytial virus (RSV) is a leading cause of morbidity and mortality in children globally, causing 3.2 million hospitalisation episodes every year. The true burden is likely much greater. RSV causes chest infections including pneumonia and a wheezing viral illness known as bronchiolitis. RSV has also been linked to asthma in later childhood. The World Health Organization (WHO) lists RSV vaccine development as a global priority and there are currently multiple vaccine candidates in development. To assist with vaccine development and implementation, we need to enhance our understanding of RSV epidemiology in our local population. RSV is not a notifiable infection, meaning that laboratory-confirmed estimates gained from administrative laboratory detection data are the best data available. We have previously assembled a linked dataset of perinatal, hospital, emergency department and routine laboratory data relating to 470,000 children to examine respiratory infections. These data which include laboratory-proven RSV disease, particularly negative test results, are globally unique.

Only 45% of children who are admitted to hospital with a respiratory infection undergo a laboratory confirmation test, so our data underestimate the true burden of RSV. This project was established to estimate that under-ascertainment burden, use predicted estimates of RSV to measure the impact of different vaccination strategies and obtain more recent data beyond 2013 to further these analyses.

We have completed the analysis for Aim 1 of the project. This has involved constructing a logistic regression model including 27 infant and demographic predictors of RSV test positivity. We have then used 10-fold cross validation techniques to test the robustness of the model in predicting RSV test positivity in the source population – that is all infant and childhood hospitalisations up to age 5 years. We successfully developed a well calibrated prediction model with an excellent predictive performance, with an Area under Receiver operating curve (AUROC) of 87% (95% confidence interval 86-88%). The accuracy measures of our model were also good with a 58.4% sensitivity, 92.2% specificity, 68.6% positive predictive value and 88.3% negative predictive value. Our model predicts that using laboratory-confirmed RSV data alone under-estimates the true burden of RSV by 32% and 57% which is the difference between 28.4/1000 and 37.4/1000 child-years in infants aged less than 3 months, and 17.7/1000 and 27.9/1000 child-years in the 3-6-month-old age group. The estimated RSV-associated hospitalisation rate in infants aged less than 12 months was



Team members Dr Hannah Moore and Mr Amanuel Gebremedhin at Telethon Kids Institute, Perth, WA



Team member Dr Alexandra Hogan at Imperial College London, London, UK

22.8/1000 child-years compared with 16.4/1000 child-years from laboratory confirmed RSV data only.

As expected, our predictive model has increased the incidence of RSV from our previous estimates that only used laboratory data. These results now provide us with a greater understanding of the true burden of RSV infections in hospitalised children. These results were presented at an internal Child Health Symposium at Perth Children's Hospital and Telethon Kids Institute in Nov 2020 and we are currently writing up the results for a submission to peer-reviewed journal.

For Aim 2, we are refining and extending our previously published RSV compartmental dynamic transmission model, which was the first model to mimic the seasonal activity of RSV in Western Australian children and to measure the impact of a maternal RSV vaccine strategy in Australia. Findings from Aim 1 will be used to improve the calibration of the model to the Western Australian settings.

We have coded the transmission model in R software and have obtained clinical parameters from the literature. We are now working on fitting the model to the results from Aim 1 (i.e. to datapoints that incorporate the estimate of under-ascertainment), and the fitting will provide estimates of the transmission coefficient and amplitude of seasonality. We do this by linking our SEIRS transmission model of community infections to an observation model of hospitalised infections in four age classes 0-3 months, 3-6 months, 6-12 months and 12-24 months), where the number of hospitalised infections each month is assumed to be Poisson distributed. We then perform the fitting using a technique known as MCMC, which allows us to set prior distributions for the unknown parameters, and generate a posterior distribution for those parameters, providing estimates of uncertainty for the fitted parameters.

We have also extended the model to incorporate infant vaccination (Figure 1) and we will simulate this model using the fitted transmission and seasonality values.

For Aim 3, we have continued our consultations with the Western Australian Data Linkage Branch to assist in the facilitation of access to a new updated and broader set of data. This will include a large set of population-based linked data covering the years 2010 to most recently available (anticipated up until end of 2019, or mid 2020) to provide the platform for enhanced analyses in RSV epidemiology. The application for data has been submitted and we are now in the process of addressing feedback from the relevant data custodians of all the datasets involved prior to formal submission for ethical approval.

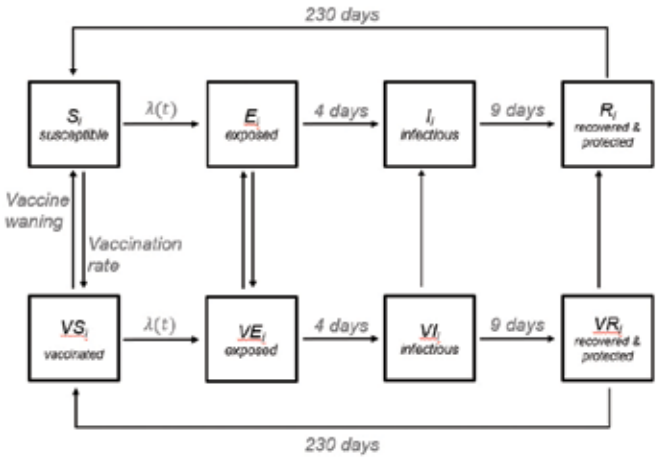


Figure 1: Schematic diagram of the RSV transmission model with vaccination. *The model allocates proportions of a total population into different compartments that represent disease states and captures the progression through these states (simulated with a series of ordinary differential equations). The states are susceptible, exposed (infected but not yet infectious), infectious, and recovered. Following recovery from infection, immunity wanes over a mean of 230 days. Vaccination is simulated by moving a proportion of the population in the susceptible and exposed classed into corresponding disease states that are protected by vaccination, where susceptibility to infection is reduced (but infection still possible). Vaccine-derived immunity wanes over time. Naturally-derived maternal protection in the first three months of life is also captured but not shown in the diagram. The population is stratified by age, and births and deaths are also captured, but these processes are not shown here for visual clarity.*

PRE-CLINICAL VALIDATION OF A NOVEL TARGET FOR HOST-DIRECTED THERAPY FOR THE TREATMENT OF TUBERCULOSIS



Principal Investigator: A/Prof Katharina Ronacher, Mater Research Institute – The University of Queensland

Background

Tuberculosis (TB) is a significant global health threat with over 10 million cases and 1.4 million deaths annually [1]. Australia's proximity to some of the highest TB burden countries in the world (Papua New Guinea, Indonesia, Pacific Islands) and Australia's large migrant intake from TB endemic South Asia requires ongoing commitment to eradicate TB. This has not been achieved despite available antibiotic treatments. We published a ground-breaking study in Nature Medicine demonstrating that in 84% of clinically cured TB patients, standard antibiotic TB treatment does not eliminate *Mycobacterium tuberculosis* (Mtb) [2]. This non-sterilizing treatment leaves patients at risk of relapse and may promote the development of antibiotic resistance. Therefore, novel and innovative strategies are urgently needed to eradicate TB. Our Research Group discovered a novel target for TB host-directed therapy, the oxidised cholesterol sensing G protein-coupled receptor, GPR183.

Aims

The aims of this study were a) to investigate the role of oxidised cholesterols and GPR183 during Mtb infection in human macrophages and in vivo utilising WT and GPR183KO mice and b) to provide translatable evidence regarding the benefits of modulating GPR183 action as part of host-directed therapy for TB.

Synopsis of Major Findings

- Expression of the oxysterol-receptor GPR183 is reduced in blood from patients with tuberculosis (TB) and type 2 diabetes (T2D) compared to TB patients without T2D and is associated with TB disease severity on chest x-ray [3].
- GPR183 activation by its endogenous high affinity ligand 7α,25-dihydroxycholesterol (7α,25-OHC) induces autophagy and reduces growth of *Mycobacterium tuberculosis* (Mtb) and *Mycobacterium bovis* BCG in primary human monocytes, an effect abrogated by the GPR183 antagonist GSK682753 [3].
- GPR183 is a negative regulator of type I IFNs during Mtb infection (3). Type I IFNs are known to contribute to TB pathogenesis in human and animal TB [4].
- GPR183KO mice have increased Mtb burden during early infection and dysregulated IFN responses [3].
- A pilot experiment showed that administration of 7α,25-OHC to Mtb infected mice increases macrophage recruitment to the lung and reduces Mtb burden in absence of antibiotics (unpublished). Experiments with INH and 7α,25-OHC will be performed when additional funding can be secured.
- High fat diet decreases expression of oxysterol producing enzymes in the lung, which is associated more severe TB (unpublished).
- Pre-diabetes increases TB disease severity while high body fat without impaired glucose tolerance is protective [5].

Outputs

Speaking Invitations at International Conferences in 2020

1. Keystone Tuberculosis Meeting: Immunity and Immune Evasion, Santa Fe, New Mexico, USA. January 2020. Speaker: A/Prof K Ronacher. Title: "Identification of a putative target for host-directed therapy: GPR183 regulates interferons and bacterial growth during *M. tuberculosis* infection"

2. Keystone Tuberculosis Meeting: Science Aimed at Ending the Epidemic (virtual), December 2020. Speaker: Dr Stacey Bartlett. Title: "GPR183 Oxysterol Axis is Dysregulated at the Site of Disease during *M. tuberculosis* Infection."

Speaking Invitations at National Conferences in 2020

1. Lorne Infection and Immunity Conference, February 2020. Speaker: A/Prof K Ronacher. Title: "GPR183 regulates type I Interferons and bacterial growth during *M. tuberculosis* infection."

Publications acknowledging this ARC funding

1. Bartlett S, Gemiarto A, Ngo MD, Sajiir H, Hailu S, Sinha R, Foo CX, Kleynhans L, Tshivhula H, Bielefeldt- Ohmann H, West N, Hiemstra AM, McDonald CE, Schlesinger LS, Walzl G, Rosenkilde MM, Mandrup-Poulsen T, Ronacher K. GPR183 regulates interferons and bacterial growth during Mycobacterium tuberculosis infection. (2020); Frontiers Immunology 11:601534 doi: 10.3389/fimmu.2020.601534

2. Sinha R, Ngo MD, Bartlett S, Bielefeldt-Ohmann H, Keshvari S, Hasnain S, Donovan ML, Kling JC, Blumenthal A, Chen C, Short K, Ronacher K. Pre-diabetes increases tuberculosis disease severity, while high body fat without impaired glucose tolerance is protective. (2021) doi: 10.1101/2021.04.06.438735 BioRxiv: https://www.biorxiv.org/content/10.1101/2021.04.06.438735v1

We are currently preparing two additional manuscripts resulting from this study, which will acknowledge the ARC.

Grant Applications Resulting from this Work

1. US National Institutes of Health (NIH)
"The role of GPR183 in respiratory infections" US$ 3 million (pending) 2022-2026 Co-Investigators: Profs Schlesinger & Torrelles (Texas Biomedical Institute), Dr Mayer-Barber (NIAID), Profs Rosenkilde&Ulven (University of Copenhagen)

2. NHMRC Ideas Grant 2022
"Validation of a novel target for host-directed therapy for the treatment of tuberculosis"
AU$ 1.5 million (pending) 2022-2026
Co-Investigators: Dr Mayer-Barber (NIAID), A/Prof Nick West (UQ)

References

1. WHO. Global Tuberculosis Report 2020. 2020.

2. Malherbe ST, Shenai S, Ronacher K, Loxton AG, Dolganov G, Kriel M, et al. Persisting positron emission tomography lesion activity and Mycobacterium tuberculosis mRNA after tuberculosis cure. Nat Med. 2016;22(10):1094-100.

3. Bartlett S, Gemiarto AT, Ngo MD, Sajiir H, Hailu S, Sinha R, et al. GPR183 Regulates Interferons, Autophagy, and Bacterial Growth During Mycobacterium tuberculosis Infection and Is Associated With TB Disease Severity. Front Immunol. 2020;11:601534.

4. Moreira-Teixeira L, Mayer-Barber K, Sher A, O'Garra A. Type I interferons in tuberculosis: Foe and occasionally friend. J Exp Med. 2018;215(5):1273-85.

5. Sinha R, Ngo MD, Bartlett S, Bielefeldt-Ohmann H, Keshvari S, Hasnain S, Donovan ML, Kling JC, Blumenthal A, Chen C, Short K, Ronacher K. Pre-diabetes increases tuberculosis disease severity, while high body fat without impaired glucose tolerance is protective. (2021) doi: 10.1101/2021.04.06.438735 BioRxiv: https://www.biorxiv.org/content/10.1101/2021.04.06.438735v1

Current Team Members



A/Prof K. Ronacher



Teambuilding Event April 2021: (From right to left) Dr Stacey Bartlett, Post-doctoral fellow. Cheng Xiang Foo, PhD student. Dr Minh Dao Ngo, Clinician and PhD student

MECHANISMS OF STREPTOCOCCUS PNEUMONIAE MESOTHELIAL CELL INVASION



Professor Y C Gary Lee



Professor Jeremy Brown



Professor Grant Waterer

RESEARCH TEAM

Chief Investigators

Professor Y C Gary Lee MBChB PhD FCCP FRCP FRACP
Professor of Respiratory Medicine Medical School, University of Western Australia
Consultant Chest Physician & Director of Pleural Services, Respiratory Dept, Sir Charles Gairdner Hospital
Head, Pleural Medicine Unit, Institute for Respiratory Health
MRFF Next-Generation Practitioner Fellow

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UCL Respiratory, Division of Medicine, University College London
Honorary Consultant in Respiratory Medicine, UCL Hospital

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Medical School, University of Western Australia
Director of Clinical Services, East Metropolitan Health Service, WA
Consultant Respiratory Physician, Dept of Respiratory Medicine, Royal Perth Hospital

Associate Investigators

Professor Brendan Wren PhD CChem FRCPath
Professor of Microbial Pathogenesis, The London School of Hygiene & Tropical Medicine

Professor Sven Hammerschmidt Dr.rer.nat
Professor (W3) for General and Molecular Genetics, University of Greifswald
Head of Department of Molecular Genetics and Infection Biology, University of Greifswald

We were encouraged to receive $20,000 from the Australian Respiratory Council Research Support Grant for our 'near miss' grant application for the NHMRC ideas grant program in 2020. The funding allowed us to perform further experiments related to the original grant application to strengthen re-submission of our project to further NHMRC grant rounds.

BACKGROUND: Pneumonia affects 450 million people a year. Pleural infection (including empyema), commonly called 'pleurisy', is a major complication of pneumonia. *S. pneumoniae* is one of the leading causes of bacterial pneumonia and empyema. Existing therapies and research on empyema have focused on drainage of the infected pleural fluid and antibiotics *after the pleural cavity is infected*. These approaches are suboptimal, with high failure rate and mortality (~30% by 3 months). The estimated hospital care cost from pleural infection exceeds US$300M/yr in the USA and UK. Most empyema develops in patients several days after the onset of pneumonia when bacteria cross the visceral pleura from the infected lung into the pleural cavity. There is thus a window of opportunity *to prevent the development of empyema* by stopping bacterial invasion into the pleura, an 'outside-the-box' concept never investigated.

Preventing empyema in pneumonia patients is an attractive strategy but we must first address the knowledge gap on mechanisms involved in bacterial invasion of the pleura in order to uncover potential bacterial and/or host targets for novel therapeutic approaches. Scientifically it can also potentially reveal why specific S. pneumoniae strains are more likely to cause empyema - knowledge that can be extended to other pathogens (eg *S milleri sp., S. aureus*).

The TEAM: We uniquely combine the expertise of world leaders in pleural diseases (Lee), and in preclinical (Brown) and clinical (Waterer) research of pneumonia and collaborators from the UK (Wren) and Germany (Hammerschmidt). Our team has developed animal models (including the first mouse model of *S. pneumoniae* empyema associated with pneumonia that closely mimics human disease in histology, pleural fluid cytokine and inflammatory cell content), acquired state-of-the-art *in vitro* techniques and collections of pleural and bacterial samples.

The OVERALL PROJECT: The full grant application will be the first to explore this strategy, and address the knowledge gap on mechanisms involved in bacterial invasion of the pleura to uncover potential bacterial and/or host targets for novel therapeutic approaches. It will provide data to address two hypotheses: 1) Preventing *S. pneumoniae* translocation across mesothelial cells will reduce bacterial invasion of the pleural space and prevent empyema, and 2) Serotype-dependent differences in the incidence of empyema are related to variations between strains in their ability to cross mesothelial layers.

The AIMS of the full grant application are to identify 1) bacterial factors and 2) cellular mechanisms required for *S. pneumoniae* invasion of the pleura using targeted mutation of selected bacterial surface proteins and transposon mutagenesis screens, and inhibitors of intracellular pathways and/or surface receptors. 3) Determine effects of capsular serotype and strain background on pleural invasion using transwell and animal models we developed.

PROGRESS: The COVID-19 lockdown of research labs both in Australia and the UK (where our collaborators are) did impact on the progress, as

well as the exchange of samples, initially expected to be routine.

To date we have acquired 24 clinical strains of S. pneumoniae isolated from pleural infections (with ongoing collection through the local pathology service) and several knock-out mutants (eg ΔPly, Δcps, Δlgt, ΔPspA, ΔPsaA, ΔPspC) with the requisite parent strains. Phenotypic testing and MALDI-TOF biotyper analyses have been conducted to characterise and confirm the identities of the strains. We have a range of primary cultured and immortalized benign and malignant mesothelial cells that allowed us to begin exploring the interactions between the bacteria and various cell lines.

To study the potential of *S. pneumoniae* strains to induce death in mesothelial monolayers, we have adapted a previously published flow cytometry method (https://doi.org/10.1371/journal.pone. 0178151) for cell viability to allow for high throughput screening and accurate quantification of cell numbers. In brief, confluent monolayers of MET5A human mesothelial cells are exposed to low doses (10^4 CFU/mL ≈ MOI 1) or high doses (10^7 CFU/mL ≈ MOI 1000) of suspensions of *S. pneumoniae*, allowed to incubate with the bacteria for biologically relevant timepoints (4 hours, or 8 hours – determined experimentally), stained with fluorescent viability dye, and assayed by flow cytometry.

Across the strains tested to date (including a control ATCC strain and other clinical strains from humans – Figure 1) we have seen significant reproducible, dose-, strain- and time-dependent different in cell killing: in general, more bacteria kill more cells in more time, however there are strains that display significantly lower cell killing at early time point. This points to a supportable hypothesis of multiple modalities of early cell killing that will be further investigated by screening the knockout mutants, and by assaying cytokine release following challenge.

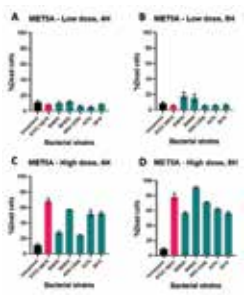


Figure 1 – Lethality of mesothelial cells (Met5A) in the presence of various S. pneumoniae strains including an ATCC reference strain (red) and several clinical strains cultured from patients with invasive pneumococcal infection (green) *after 4 and 8 hours of incubation with low (104 CFU/mL ≈ MOI 1) and high doses (107 CFU/mL ≈ MOI 1000) of the bacteria.*

In parallel, further work in Professor Brown's laboratory has identified additional mutant strains with perturbed interactions with host cells. Mutation of two gene loci involved in bacterial adaptation during infection (the Δ*proABC* and Δ*fhs* mutant strains, Figure 2) markedly affected bacterial interactions with epithelial cells (Figure 3). Both mutations reduced bacterial adhesion / associated to the cell surface but did not prevent internalization / microinvasion of the cells. However, the mutations prevented bacterial egress and hence transmigration across the epithelial cell layer. These data demonstrate mutations of specific *S. pneumoniae* genes can prevent invasion across cellular barriers (such as the mesothelium) and therefore can be used to elucidate the mechanisms of transmigration and act as targets for anti-transmigration therapies or vaccines.

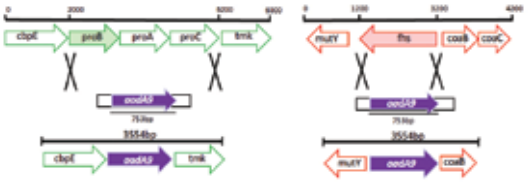


Figure 2: *Design of ΔproABC (left) and Δfhs (right) whole gene replacement mutants, made using overlap extension PCR to replace the target genes (proABC operon and fhs) with a kanamycin resistance cassette (aadA9). Mutant identities were confirmed by PCR and sequencing.*

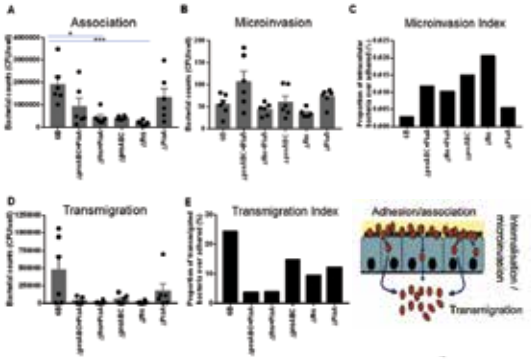


Figure 3: *Adhesion/association (A), internalization/microinvasion (B) and transmigration (D) of the ΔproABC and Δfhs mutant strains (single mutations or in combination with ΔpiaA) compared to wild-type 6B strain with Detroit epithelial transwell monolayers. (C) shows the ratio of adhesion to internalisation, showing the mutants are more readily internalised. (E) shows the ratio of adhesion to transmigration, showing the mutants are considerably less likely to cross the epithelial barrier. Bottom right panel is a schematic of the transwell model showing each site of S. pneumoniae interaction with the cell layer. Experiments performed by Dr Caroline Weight, UCL.*

EXPECTED OUTCOME & SIGNIFICANCE: The data generated from this near-miss grant will help strengthen this proposal which has been resubmitted to NHMRC Ideas Grant Round in May 2021.

For the long-term goal of this project, identification of potential therapeutic targets on host/bacterial factors to stop microbial invasion of the pleura will present opportunities for ultimate translation into bedside testing which our team has strong expertise on. The final goal will be a therapy that can be administered to patients with pneumonia prophylactically before they develop empyema, particularly for patients with clinical features known to be associated with high likelihood of developing empyema, e.g. more severe pneumonia, peripheral lung involvement and pleuritic chest pain etc.

RESEARCH GRANT FEEDBACK



Annual Report of the Australasian Clinical Tuberculosis Network (ACTnet)



Professor Greg Fox

Associate Professor Justin Denholm

The **Australasian Clinical Tuberculosis Network** is a network of clinicians and researchers in Australia and New Zealand who aim to conduct high quality multicentre clinical research. The focus of ACTnet is development of new evidence to support TB elimination in Australia and beyond. The Australian Respiratory Council is the principal partner organisation of ACTnet.

The aims of ACTnet are to be met through 3 main activities

1. Education to clinicians/ researchers and public health professionals
2. Conceiving and implementing research projects particularly those that allow for collaboration between different health services within Australia and New Zealand
3. Establishing collaborative networks of researchers (SIGs) in key areas which facilitates discussion at a high level of expertise.

One of the goals of ACTnet is to develop networks of established and emerging researchers in TB in Australia and New Zealand. In order to develop productive working relationships, ACTnet is in the process of establishing formal special interest groups in the following areas:

1. Epidemiology/data collection
2. TB microbiology/ diagnostics
3. Clinical trials/ international health
4. Mycobacterial therapy pharmacokinetics

It is envisioned that these groups will meet virtually quarterly to discuss ongoing and proposed research activities. There would be opportunities for these SIGs to meet physically at conferences when feasible.

Membership: Our current membership number is 65. We have a larger number of people who follow ACTnet through twitter/social media. It is planned to increase our membership by increasing circulation of the TBPod podcast, sharing information about our activities widely (including to TSANZ, ASID and the TB CRE) and through our research networks across all states and territories.

Current research activities

In 2019 & 2020, ACTnet conducted several multicentre studies that sought to characterize the burden of tuberculosis in Australia. Among our current projects are:

1. **The effect of weekly rifapentine and isoniazid (3HP), compared to 4 months of daily rifampicin (4RIF) upon adherence with treatment for latent TB infection**

This multi-centre prospective, open-label, randomised trial is comparing treatment adherence among patients taking two alternative effective regimens for LTBI. The study is comparing the treatment completion of new weekly 12 dose regimen of rifapentine / isoniazid (3HP), and daily self-administered rifampicin for 4 months (4RIF). The 3HP regimen is be monitored via SMS or phone call, while the 4RIF is self-monitored with a standard clinic follow up. The proposed method may provide an opportunity to improve overall treatment. The study will also evaluate the feasibility of scaling up these regimens and explore their cost-effectiveness and patient acceptability. The study is underway at eight TB clinics across Sydney, and 210 LTBI patients planned to participate. Findings of this study will strengthen TB services across Sydney through a transition to new shorter regimens that prevent TB. The study will be completed by 2022.

2. **Evaluating the 'cascade of care' for off-shore migrant screening for latent tuberculosis infection (LTBI): a platform for evidence-based approaches to TB elimination in Australia**

This research project aimed to evaluate the implementation and costs of the new Department of Home Affairs policy to screen all children between 2 and 10 years who migrate to Australia from TB endemic countries (> 40 per 100,000) for latent tuberculosis infection (LTBI). This retrospective cohort study included children eligible for the Australian Child LTBI screening in the first year of implementation. Data for this study have been obtained from NSW, Victoria, South Australia, Queensland and the Northern Territory.

3. Tuberculosis risk in Australia: An epidemiological assessment of tuberculosis risk factors

This research project aimed to better characterize the epidemiological profile, risk factors and management of TB patients to improve targeting and delivery of interventions necessary to achieve the elimination of TB in Australia. Dr Kerri Viney (ANU) led this study. Data collection has been completed from Victoria, Northern Territory and Western Australia. The findings will be submitted for publication by September 2020.

Proposed research activities

In the year ahead, we propose to formalise and streamline our approach to endorsing projects under the ACTnet banner. In particular, we have developed an application form for proposed research activities undertaken across Australia to be considered part of ACTnet activities. This is anticipated to benefit researchers looking to enhance collaborative projects across our region by providing a formal mechanism to indicate that their project is supported by the broader TB research community across Australia and New Zealand.

We have developed a form to be considered by the broader committee at its next meeting. It is hoped that this will be a useful mechanism for stimulating consideration of research collaborations, particularly within the format of the Special Interest Groups proposed above.

Future research projects that will be considered through this mechanism include:

- Treatment of extrapulmonary immunological manifestations of TB (e.g. ocular)
- Pharmacodynamic studies of anti-tuberculous agents
- A registry of TB reactivation episodes in contacts
- Collation of MDR-TB treatment outcomes

Links to the European tbNET

Professor Greg Fox, Chair of ACTnet, attended the annual tbNET research meeting in October 2019. Held in Madrid, Spain ahead of the annual European Respiratory Society Meeting, the tbNET meeting provided an opportunity to build links between the two societies. Australian researchers have been invited to participate in tbNET activities, with future research collaborations planned.

A new ACTnet Podcast

ACTnet and the TB Forum have recently launched The TBPod. The TBPod is a podcast designed for clinicians and policy makers caring for patients with tuberculosis. The TBPod consists of conversations with expert clinicians, researchers, policy makers and advocates about their work in the field of tuberculosis. The available episodes include latent tuberculosis infection with A/ Prof Justin Denholm and Dr James Trauer, patient support and tuberculosis treatment adherence with Dr Kerry Viney and Mr Neil Heron and post-tuberculosis lung disease with Dr Anthony Byrne. The "TBPod" episodes are published monthly and can be found on Itunes and the ACTnet website.

ACTnet thanks the Australian Respiratory Council for its continuing support. Membership to ACTnet is free. Please see our website www.actnet.org.au for further information.

actnet
australasian clinical tuberculosis network

SUPPORTERS OF ARC



BREATH OF LIFE

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

One of the most important ways that ARC's loyal donors are helping ARC's work is by including a bequest to ARC in their Will. Bequests left to ARC are made from people from all walks of life, not just the wealthy. Even a modest gift can be life-changing for someone in need. When you choose to leave a gift in your Will, it benefits the whole community.

Your Will allows you to express support for your fundamental values and can have an impact on the health and well being of future generations – not only by the inheritance you leave to your family and friends but also the gift you can leave for the well-being of the community through ARC. After you have made provision for your family and friends in your Will, you may like to consider the ARC as a worthy recipient.

Such a gift to ARC would ensure that your name would always be remembered. By informing us of your intended bequest, ARC will be able to acknowledge you as a member of The Breath of Life group. The Breath of Life is a group of people who have told us that they plan to leave at least part of their estate to ARC. Through the Breath of Life group ARC can recognise the generosity and honour the contribution of its members. There is no obligation to becoming a member of The Breath of Life other than letting us know that you intend leaving a bequest in your Will.

A bequest can be of any size and can be given as cash, property or shares. All gifts large or small are important and greatly appreciated. All gifts make a difference.

Whatever amount you bequeath to ARC, be assured that it will be an enduring tribute to your generosity and concern for the welfare of your fellow man. Your bequest ensures the personal link and "journey' you have had with ARC over many years continues into the future.

Your Bequest will allow ARC to continue to offer the quality of service you have come to expect from us - reducing the incidence and impact of tuberculosis and respiratory disease in Australia and the Indo-Pacific Region.

If you would like to consider leaving a Bequest to ARC, please contact us for a copy of our Bequest booklet, "Your Security, Your Future".



ADVOCACY

WORLD TB DAY 2020

Each year, we commemorate World Tuberculosis (TB) Day on March 24 to raise public awareness about the devastating health, social and economic consequences of TB, and to step up efforts to end the global TB epidemic. The date marks the day in 1882 when Dr Robert Koch announced that he had discovered the bacterium that causes TB, which opened the way towards diagnosing and curing this disease.



This year, one in four people in the world has latent TB infection, meaning they are at risk of developing active TB infection at some point in their lives. Each year, 10 million people fall ill with TB disease, mostly in impoverished countries, and approximately 1.5 million die due to this preventable and treatable infectious disease. Being airborne, TB is a global health security threat. In 2018, at the United Nations High-Level Meeting (UNHLM) on TB, world leaders committed to taking specific actions against the disease to reach targeted milestones by the end of 2022.

Since March 2020, the COVID-19 pandemic has severely disrupted TB care and treatment services in low and middle-income countries, stalling and reversing years of progress made against TB. In 2020, COVID-19 became the most common cause of death globally, from an infectious disease, however, in low- and middle-income countries, TB deaths remain far higher than those from COVID-19. As the number of people vaccinated against COVID-19 grows, the number of COVID-19 deaths decrease while TB will continue to kill around 4,000 people every day.

The theme of World TB Day 2020 'It's time' builds on the UNHLM recommendations and puts the emphasis on the urgency to act on the commitments made by global leaders to:



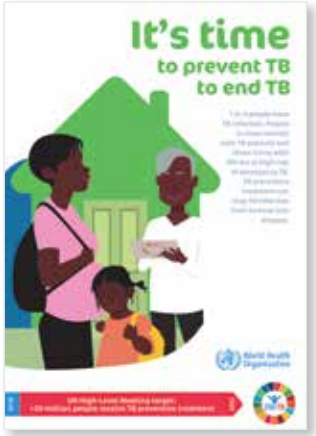
- Scale up access to prevention and treatment for TB
- Build accountability
- Ensure sufficient and sustainable financing including funding for research and development for new diagnostics and treatment for TB
- Promote an end to stigma and discrimination associated with TB, and
- Promote an equitable, rights-based and people-centered TB response.

The World Health Organization (WHO) has launched a joint initiative "Find. Treat. All. #EndTB" with the Global Fund and Stop TB Partnership, with the aim of accelerating the TB response and ensuring access to care, in line with WHO's overall drive towards Universal Health Coverage.

In 2020 on World TB Day, the call is for governments, affected communities, civil society organisations, health-care providers, and national/international partners to unite forces under the banner "Find. Treat. All. #EndTB" to ensure no one is left behind in the fight to END TB.

It's time for action! It's time to End TB.







ARC SHEILA SIMPSON OAM NURSING EDUCATION SCHOLARSHIP



Building Nursing Capacity in Australia

Sheila Simpson OAM

To support elimination efforts in Australia, ARC has been working in partnership with Western Sydney University, School of Nursing and Midwifery and the National TB Program stakeholders to develop and implement the Graduate Diploma/Masters in Nursing (TB Management).

The course, represents a significant educational opportunity for developing nursing workforce capacity within the Australian TB Program. The ARC is committed to supporting capacity building for the Australian TB Program through the development of specialist nurses.

To support future students ARC initiated, in 2020, a program to award up to three scholarships each year to enable nurses to undertake the speciality units within the Graduate Diploma/ Master in Nursing (TB Management). The scholarships have been named in recognition of the outstanding contribution of Sheila Simpson OAM, to the work of ARC, her clinical leadership and mentoring of the nursing workforce within the speciality area of TB, over four and a half decades.

The inaugural scholarships were awarded to Cathy McKenna, Amy Peachy and Sherri Towle. Each of the recipients successfully completed the Public Health Management of TB. A profile and feedback from the scholarship recipients is provided below.

Amy Peachey



Amy works for the Victorian Tuberculosis Program, Melbourne Health. Amy was inspired to pursue a career in public health when working in remote Aboriginal communities in the Northern Territory. Amy's Masters of Public Health (MPH) in 2012 and experience across other public health settings have led to her current (dream) role, as a Clinical Nurse Consultant (CNC) with the Victorian TB Program (VTP).

Amy advises that in her role within the VTP, she contributes to the management, control and prevention of TB. Amy and her colleagues engage and support patients with TB, often for many months, to promote treatment adherence and enhance patient outcomes. They are the liaison between patients and clinical services, and work collaboratively with their treating teams in the hospitals and in outpatient infectious disease clinics. They assist patients in the community, conduct contact tracing, and provide education to individuals and their families diagnosed with TB. Through this process they work to assist with, and overcome, barriers to treatment.

Amy advises that as one of the newest members of the VTP team, she is very excited to have embarked upon course this year and hopes to learn as much as she can about this vital area of public health. Amy believes that the TB specific training provided in the course will further develop and enhance her practice, allowing her to gain the knowledge and skills to provide current, evidence based, high quality care for patients with TB, their families and their communities.

Completing this unit has allowed Amy to develop networks with other nurses completing the course, to gain a better understanding of how TB programs in other states and territories operate, and how best to collaborate with each other in the future. Amy advises she is inspired by the career-long, extraordinary contribution of Sheila Simpson OAM, and hopes to work in and be a part of the TB field for many years to come.

Cathy McKenna



TB Nursing has been Cathy's professional specialty for 25 years, starting at the Wollongong Chest Clinic, NSW in 1988. Cathy's career has been focused in rural and remote communities providing TB care and prevention work mostly to diverse cultural communities in some interesting social environments.

Cathy's current role includes providing nursing consultancy for the communities and health professionals of Southern NSW and Murrumbidgee Local Health Districts. As the District Coordinator, responsibilities include ensuring the key principles of the National and State TB Programs are

implemented with consideration given to the cultural diversity and issues of service access addressed equitably for all consumers. This advocacy role is important in a low TB incidence country such as Australia to ensure we continue to aim for TB elimination.

Another important component of Cathy's work is workforce development. This includes training and education of staff to ensure they understand the Global TB Program and how it works at the grass-roots level. Cathy also works to ensure that staff are competent to undertake the clinical skills required to diagnose and manage TB care with a client centred perspective.

As the recipient of this award, Cathy advises that she can continue to learn, this enhanced knowledge gives Cathy " confidence to tackle the dwindling political commitment to support the national TB program in Australia and at a local level. If this is not sustained, global TB elimination goals will not be met".

Cathy advises that "the learning opportunity has re-invigorated her passion to advocate at local levels for others to better understand ongoing TB client needs, maintain knowledge and skills of those working both in District TB services and engage other health professionals and non-government partners in collaboration to improve service delivery. Into the future Cathie hopes to also apply her learnings in the Western Pacific Region by sharing knowledge and skills to support regional goals of TB and drug resistant TB elimination".

Sherri Towle



Sherri has 18 years' experience in the speciality area of TB, Sherri commenced TB training as a registered nurse in the TB clinic at Wollongong Hospital, which has led to her current role as the District TB/Staff Vaccination Clinical Nurse Consultant for the Illawarra Shoalhaven Local Health District (ISLHD).

Sherri is an advocate for the people she manages and supports through her work. Sherri advises that the " the patients are my priority, placing their welfare first, and enabling them to live their life while managing their TB diagnosis and treatment".

Sherri is a professional leader in the domain of TB, empowering and promoting research, providing education to healthcare professionals while building collaborative partnerships within the local health district. Sherri enjoys the challenge of providing a solution-driven problem-solving approach in a complex health system. By exceptional role modelling, motivation and mentoring, Sherri hopes through education, support and skill development to inspire a new generation of health professionals to consider a career in Tuberculosis management.

Sherri was successful in securing the ARC Sheila Simpson OAM Nursing Education Scholarship 2020, this award will enable Sherri to achieve her academic goals and empower her professional development by supporting her tertiary studies and contribute to Australia TB elimination agenda.

Following the completion of this unique tertiary opportunity, Sherri advises that she will be able to implement strategies learned, adapt to the changing health environment with innovative ideas, provide clinical teaching techniques with clinical context and to apply best-practice principles in the care and management of people with TB.

For further information about the ARC Sheila Simpson OAM Scholarships please go to the following link: https://www.thearc.org.au/scholarships/shelia-simpson-oam

PROJECT REPORT

Feedback on ARC Project Activities

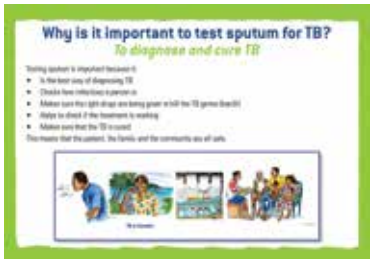
Pacific Island TB Nurses Network Meetings

Each month the ARC Nurse Consultants meet online with the National TB Program (NTP) Staff of the US Affiliated Pacific Islands (USAPI) and the Division of TB Elimination at the US Centers for Disease Control (CDC) to present cases, discuss clinical issues, undertake educational activities and progress the development of NTP tools and resources. The monthly meetings are coordinated by ARC and hosted by the CDC. Each of the countries within the USAPI actively participate in the meetings and present cases for clinical discussion and review. The number of people attending the meetings within the countries increased over the year which is pleasing as the network continues to expand.

The ARC Nurse Consultants Group provide ongoing technical support, educational sessions and mentoring for the nurses and outreach workers of the USAPI TB Programs. The CDC provide funding for ARC to undertake these activities and support for the USAPIs.

Development of Information, Education and Communication Resources – TB Sputum Toolkit

Work continued on the development of the Sputum Toolkit for the TB Programs of the Northern Pacific this year. Collecting good quality specimens is essential for the diagnosis of people with TB and for monitoring a response to treatment and cure. The ARC Nurse Consultants Group has been working with the nurses from the USAPI and the CDC to develop the Toolkit.





The toolkit is made up of a series of resources that combined support clinical practice, training for health care workers and patient education. The resources include: a flipchart; health care worker training resources; guidelines and policies; competency standards and skill sets for nurses and a patient education resource.

In-country field testing and evaluation of the toolkit was to be completed in 2020, however, redeployment of USAPI staff to pandemic preparedness activities meant that there was a delay in completing the field testing in some of the countries. Work on the toolkit will be finalised in the first quarter of 2021.

Development of the Graduate Diploma/Master of Nursing (TB Management) Course

In 2020, ARC collaborated with the Western Sydney University, School of Nursing and Midwifery to develop and implement the Graduate Diploma/Master of Nursing (TB Management) Course. The course, the first of its kind internationally is seen as an important opportunity to further develop the speciality of TB nursing within Australia and enhance national efforts towards TB elimination. Nurses comprise the largest proportion of the Australian TB Program workforce, they are at the forefront of TB services and activities in Australia. Investing in education and skills development will enable TB Nurses of the future to further develop and implement effective TB programs. A strong training pathway will attract new nurses to the role and set the national TB program up for the future.

Kerrie Shaw was seconded to ARC to work on developing the three specialist units for the course: the Clinical Management of TB, the Public Health Management of TB and Care of People with TB units of study. ARC acknowledges Kerrie's expertise and outstanding contribution to the development and implementation of the course through academic writing and providing support for the students through the teaching team. Kerrie was assisted in this role by the ARC Nurse Consultants Group and a National Jurisdictional Reference Group.

In 2020, two of the three specialist units were available to students with four students completing the Clinical Management of TB unit of study and six students completing the Public Health management of TB unit of study. In 2021, all three units will be available for enrolment, there are currently 15 students enrolled in the Clinical Management of TB unit and 24 students enrolled in the Care and People with TB. The third unit, the Public Health Management of TB will be offered in mid-2021 with enrolments yet to commence.

In the coming year, ARC will meet with Western Sydney University, School of Nursing and Midwifery and other stakeholders to discuss opportunities to explore and scope the potential to offer the course internationally, and further develop workshops/stand alone courses that will increase access to tertiary learning in the speciality area of TB. Students from Australia and the Indo-Pacific Region are currently enrolled in the course. There is, however, capacity to identify opportunities to create a pathway and pipeline for nursing education that links other training and education activities that ARC is undertaking in the pacific into an academic framework.

Funding to support the one-off course development costs were contributed from ARC and the Ministries of Health/Health Departments from New South Wales, Queensland, South Australia, Victoria and Western Australia.

Homeless and Vulnerable Grant

Over the past two years, ARC with the financial support of the Bowlers Club of NSW Ltd has implemented a project to support homeless and vulnerable people with TB within the Greater Sydney metropolitan

area. Through this project ARC is able to provide funding for people experiencing financial hardship, which was particularly important this year as the impact of the COVID-19 pandemic was felt by many in the community.



In 2020, ARC was pleased to be able to provide eight grants to six people affected by TB. The financial support was used to contribute to the costs associated with accommodation, food and transport (to attend medical appointments). The grants recognise the benefits to individuals and community of caring for our most vulnerable during a difficult period in their life.

Homelessness in Australia is a significant social issue, that can have a long-term impact on individuals and families. Homelessness is complex issue, with each person having a different pathway into homelessness, it is often the end point of a series of life events and crisis. Homeless people often have a poor general health status, coexistent substance and mental health issues, limited financial resources and support networks in the community.

The initial management of the homeless with TB is through admission to hospital. For others, homelessness or housing difficulties may arise as a consequence of TB. Some individuals whose disease is considered infectious or who may be unwell, may also require hospitalisation for extended periods of time. This may have consequences for their employment and subsequently render them unemployed and homeless. Increases in the cost of living in Sydney and the casualisation of the workforce further contributes to this trend for people affected by TB.

Difficulties can also arise when the person is to be discharged from hospital to complete treatment in the community. The path to cure from TB is long and slow, people require treatment for six to twenty-four months. Discharging people to live in unstable settings is extremely problematic with many people defaulting from treatment and becoming lost to follow up. This poses a threat to the individual for reactivation of disease, development of drug resistant TB or death, and for the community this scenario can lead to ongoing transmission of TB. Providing ongoing care and support within this context is extremely challenging for both the individual and those that care for them, including the health care team.

The ARC is pleased to be able to continue to work in partnership with The Bowlers Club of NSW Ltd on this project as support for homeless and vulnerable people with TB is an important issue. It is planned in future years to extend the project nationally to provide much needed support for homeless and vulnerable people across Australia.

IMPACT OF COVID ON ARC'S PROJECT ACTIVITIES

Annual Pacific Island TB Controllers Association (PITCA) Annual Training Activity - Due to travel restrictions between Australia and the Pacific the annual PITCA Training activity to be held in American Samoa in 2020 was cancelled. The ARC Nurse Consultants Group continued, however, to work with the CDC to support the National TB Programs of the northern pacific through the monthly PITBNN meetings and activities. It is planned to resume the annual PITCA training activity in an online capacity in 2021.

Active Case Finding in Chuuk, Federated States of Micronesia – Chuuk, in the Federated States of Micronesia, has amongst the highest rates and burden of TB in the pacific. It has been identified that current screening and management strategies within Chuuk are not effectively progressing the TB elimination agenda.

Based on the success of the Active Case Finding Project undertaken in the Marshall Islands in 2017-2019, a project team lead by Dr Richard Brostrom from the CDC Hawaii in collaboration with the Federated States of Micronesia, Ministry of Health planned to undertake an Active Case Finding activity for the island population of Chuuk. The ARC Nurse Consultant Group were to travel to Chuuk to work with the Ministry of Health and CDC to develop and deliver in-country training for the screening teams, work with the local teams to identify new TB cases and people with latent TB infection and implement case management practices. This work has been delated due to the pandemic and travel restrictions within the pacific. The project is rescheduled to commence in 2021 when travel restrictions cease.

Cough and Premature Death in the Solomons Islands – ARC awarded funding in 2020 to Dr Anthony Byrne, a Respiratory Physician from St Vincent's Hospital, Sydney to travel to Gizo, in the Solomon Islands to undertake a lung health project. The project aimed to increase case finding for people with TB and improve the quality of life of people in the Western province of the Solomon Islands through increased access to respiratory diagnostics and specialist medical treatment for coughing related illness.

Lower respiratory tract infections remain the single biggest cause of premature death in the Solomon Islands. The timely recognition of symptoms such as cough and fever by the patient (or caregiver), access to medical review followed by appropriate investigations and prompt treatment with antibiotics is critical to preventing these deaths. Unfortunately, cough is a common symptom and doctors are not available in many areas of the Solomon's Islands. Diagnostic tests are often not available or are difficult to access in a timely manner. There are also non-infectious causes of cough such as asthma and COPD, which were also in the top eight conditions that caused the most disability in the Solomon Islands.

Dr Byrne and his team will travel to the Solomon Islands when the pandemic travel restrictions are lifted to undertake the project.

SOLOMON ISLANDS PROJECT

Community-based tuberculosis (TB) case finding and treatment support: working with Baru Conservation Alliance rangers in the remote mountain areas of East Kwaio.

Report submitted by Tommy Esau and Associate Professor Peter Massey

TB remains at unacceptable rates in the East Kwaio area of Solomon Islands. At the Atoifi Adventist Hospital (AAH) approximately 10-15 people are treated for TB each year. In a population of 10,000 this equates to 100-150 cases/100,000 pop. There are many more undiagnosed cases known to occur in mountain areas and distant villages.

The TB program at AAH is part of the National TB Program but due to remoteness, access issues, cultural issues and historical health settings TB remains uncontrolled. The Baru Conservation Alliance (BCA) is a well-respected community agency supporting remote villages and families to maintain the conservation value of the area. BCA has a holistic approach to care for plants, animals and people who live within mountain conservation areas. BCA has conducted a number of important conservation projects with international partners. BCA has a well-trained, capable and willing ranger workforce. The rangers have identified TB as an ongoing threat to the people who live within and manage the conservation areas.

The aims of the project are to:

- To increase TB awareness, case detection rates, and TB treatment completion to reduce transmission of TB in the remote mountain areas of East Kwaio.
- To develop a sustainable enhanced system of TB case detection and treatment support in partnership between BCA conservation rangers in East Kwaio and the TB Program of Atoifi Adventist Hospital (AAH), Malaita, Solomon Islands with the support of Australian public health experts.

Consultation and Awareness

In May and June 2020 the Baru Conservation Alliance met with each tribe in the conservation areas in the mountains to talk about the challenges of TB, the long standing burden of disease in east Kwaio and how the Rangers will work with Baru and the Atoifi hospital to address these issues.



Main points discussed:

- TB remains at unacceptable rates in the East Kwaio area of Solomon Islands.
- TB is a disease that can be easily spread; however, it can be cured
- How the Rangers work can help work with Baru and the hospital to help support TB work in the conservation areas
- TB Ranger workshop was held at Gala
- Select eight rangers from four conservation areas, one male and one female from each area.

In August 2020 a two-day workshop was held in very remote and traditional villages in the central mountains of Malaita. The Baru had organised a two-way training with the rangers learning about TB and the TB Program. There were 12 participants including six rangers from the four conservation areas, a TB nurse from Atoifi hospital Gideon Fatalaea, a student nurse Solomon, members from Baru and Peter Massey linking in via zoom from Australia.

In the first two days training the rangers learnt about TB, the challenges for TB Services and the hospital in delivering services, how to identify a person with TB, what to look for – 5 signs and symptoms and 5 options/actions to do when you know someone has TB using practical ways taught by Dr Peter Massey.

We also used the previous TB videos developed by previous project as awareness during the workshop. The training was very practical and appropriate for the local rangers. In fact many of them did not attend formal school, but the way it was taught was amazing – Using their 10 fingers as their textbook.



Figure 1: Gideon Fatalaea Atoifi Hospital TB nurse during the training at Gala in east Kwaio and Dr Peter Massey from the background connecting via zoom from Australia

Signs and Symptoms – using five fingers

First five fingers represents the five signs and symptoms to look including – loss in body weight, coughing with more than two weeks including blood, night sweat, laziness and not thriving for children etc.

Five actions/options

1. Doing nothing even when you identify the patient has signs and symptoms
2. Observation for 1-2 weeks
3. Calling the TB nurse from the hospital for confirmation
4. Helping the patient to the hospital
5. TB nurse or Dr go to see the patient with the Rangers.

The first two days is working with the rangers to learn about TB, signs and symptoms, case finding, and what to do or how to respond.



Figure 2: Rangers and participants doing practical activities about the signs and symptoms of TB during the training or workshop at Gala

The other two days of the training is learning and establishing a system how Rangers can work with Baru conservation Allaince through the TB coordinator Mr Esau Kekeubata and working with TB nurse Gideon Fatalaea from Atoifi hosptial.

Outcomes from the workshop

- The workshop or training was a very successful despite Covid-19 and the travel ban. We were able to facilitate the training via zoom meeting

SOLOMON ISLANDS PROJECT

- Baru to oversee and coordinate the project
- TB coordinator Mr Esau Kekeubata appointed
- Identify Eight rangers (four females and four males) to work in the in the four conservation areas
- Rangers will work through Gideon TB nurse from Atoifi Hospital and the Atoifi hospital systems
- Develop TB flip charts for the rangers to use as their guide. The charts have signs/symptoms and actions points translated into Kwaio languge
- Weekly update with rangers every Friday with Esau TB coordinator
- Phone credits for Rangers every week for report and weekly update with Esau and Gideon
- Rangers sent monthly written reports for Baru activities and budget.

Activities and outcomes

- After the training, the rangers went on to do more awareness and consultations for the tribes in the four conservation areas
- Rangers work 3 days per week to do case findings in the four conservation areas
- From August to November rangers have collected a total number of 40 specimens as part of case finding activities
- Rangers also assist and take TB patients to the hospital for more TB testing and x-rays
- The first positive TB case from ranger Sale in November after two months of hard work. This is exciting news and the patient is now on TB treatment and monitored by the rangers in the mountains
- Rangers are happy that this is a good system and is working well, they can help support their people to reduce the burden of TB in their tribal lands and families
- Now we have developed a system of TB case detection and treatment support with Baru conservation Alliance, the Rangers and TB Program of Atoifi Adventist hospital.



Figure 3: TB Ranger – Sale giving tablets to his first TB patient

In November, the Baru team and rangers met with Atoifi Adventist hospital Administration to set a system for the TB program. The Baru team gave a presentation about their work, strategic plans and how it links with the TB Ranger Program. Sale Fuiberi, the TB Ranger from Aifasu shared his experience as a ranger working on the TB project. His story has inspired everyone about his knowledge about TB and his commitment to help his people to finish TB in the mountains. After the presentation the Atoifi staff, especially Lab team are now clear and would like to support the TB Ranger Program in the future. The TB Program really helps the hospital because, rangers have done the big work. Now the CEO, Director of Nursing, the TB nurse and lab team are clear about the BARU work and the rangers work and would like to support the program, they see it as a good model for working with community and tribal rangers.



Figure 4: TB Ranger Sale and TB nurse from Atoifi Hospital sharing stories and challenges about their TB work to Atoifi Staff



Figure 5: Atoifi Adventist hospital staff, and members listening to BARU team and Rangers during the presentation

Challenges

- Covid-19 travel restriction, international partners could not visit us in the Solomon Islands
- Internet connection
- Relocation of BARU base from Gala island in east Kwaio to Auki the capital of Malaita province
- Distance for the rangers to walk between villages
- Distance for rangers to get sputum bottle from the hospital to the hamlets and back
- Weather - rain, flood and wind caused big challenges for rangers to walk to the hospital with specimens. If the specimens don't arrive on the same day, they are spoiled and need to re-collected again
- Systems and mechanisms at the hospital were not clear at first, so some of the sputums specimens were destroyed. However, after the presentation things are clear and systems are now in place.

Next steps

- Continue to do awareness about TB using the previous TB videos previous funded by ARC
- BARU to continue support the work of Rangers in their TB work
- Rangers to continue with their work visiting families in the conservation area and talk with them about TB check for symptoms and support families with TB



Figure 6: A Female TB ranger Fiiringi talking with a suspected patient

- Continue to build the network with the hospital
- TB rangers continue support patients on TB treatment
- Extend the developed system of TB case detection and treatment support with Baru conservation Alliance, Rangers, TB program of Atoifi Adventist hospital, Malaita province and Solomon Islands
- Reflection and evaluation workshops
- Successful stories and lesson learnt from the rangers that can be in a narrative stories and small videos.

PEARL PROJECT

The Australian Respiratory Council partners in the Pathway to the Elimination of Antibiotic Resistant and Latent Tuberculosis in the Pacific (PEARL) Study

The Australian Government through the Medical Research Futures Fund Global Health Initiatives Grant Scheme awarded $ 4.25 million in funding over four years (commencing in 2020) to support research around the diagnosis, prevention and treatment of drug resistant tuberculosis (DR-TB) in Pacific Island Countries.

The funding is for research that will enhance knowledge and develop tools to combat threats to national health security posed by the regional and global challenges of DR TB. The research is to be undertaken in collaboration with researchers from pacific countries to promote capacity building to ensure the risks associated with TB can be managed on both sides of the border, in Australia and overseas.

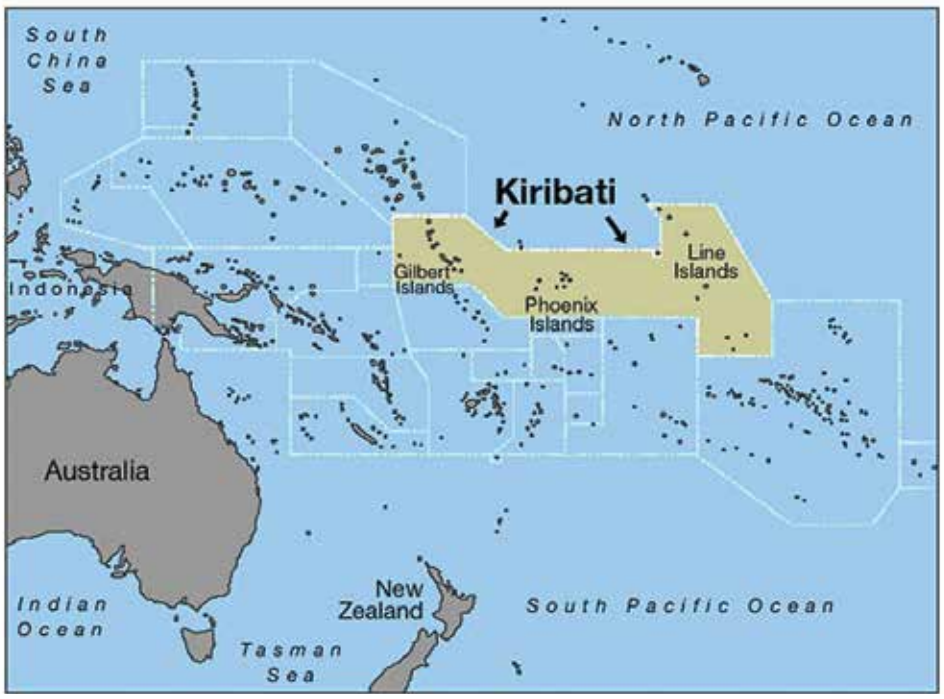
The ARC will partner in the project with a team of translation–oriented researchers and capacity building experts led by Professor Ben Marais. The project team includes: the NHMRC TB Centre of Research Excellence, Sydney University, Monash University, the World Health Organisation (WHO) Collaborating Centre for Nursing, Midwifery and Health Development and the South Pacific Chief Nursing & Midwifery Officers Alliance at the University of Technology Sydney, the Australian National University, and the WHO Western Pacific Region Office END TB & Leprosy Unit. The people of Kiribati have expressed a political and societal commitment for efforts that contribute to the control and progression towards elimination for TB and Leprosy within their country.

Background

The emergence and spread of antibiotic resistant strains of TB is a major concern globally. Within the Pacific, TB and Leprosy hotspots such as Kiribati pose a particular challenge and threat. The incidence of TB and Leprosy in Tarawa (the main population centre in Kiribati) is amongst the highest globally, combined with the dominance of TB disease in young adults, the population density and ongoing transmission of TB and Leprosy, the potential for amplification of TB, DR TB and Leprosy is a public health concern.

The overarching objective of the study is to mitigate the threat posed by DR-TB in the Pacific, by enhancing knowledge and testing new strategies to combat both diseases. The Pathway to the Elimination of Antibiotic Resistant and Latent tuberculosis in the Pacific (PEARL) study, proposes an integrated body of work that will provide a pathway towards DR-TB prevention, TB and Leprosy elimination in the Pacific.

Every person aged 3 & older in a population of more than 60, 000 people in South Tarawa, Kiribati will be offered screening for TB & Leprosy . A series of mobile clinics will be set up in the community for people to access. The screening sites will move around Tarawa over a three-year period to reach maximum numbers of people. A team of local staff will be employed to work in collaboration with the study team to undertake the screening activities.





People with active TB will be referred for TB treatment, and those with TB infection will be treated with preventative therapy to diminish the pool of people at risk of developing active TB in the future. Single dose preventive therapy will be given to people to prevent people developing Leprosy.

Community engagement and participation in the screening is critical to the success of the program and the goal TB and leprosy elimination. Activities to engage the government, community leaders, health services and population will be undertaken throughout the study.

The ARC will lead the component of the study relating to building workforce capability through training and education for TB/DR-TB control and elimination in Kiribati, and more broadly within the Pacific. This will be achieved through a program of training and mentoring. The work undertaken by ARC will build on exiting expertise and activities within the pacific to deliver in-country training and clinical mentoring in Kiribati and the Pacific more broadly.

ARC will develop and deliver training for the National TB & Leprosy Program to build knowledge, skills and capacity in the care and management of both TB and Leprosy. A specialised training program, resources, tools and protocols will also be developed and implemented for the Study Team.

The ARC will work with the UTS WHO Collaborating Centre of Nursing and Midwifery to develop a pipeline and pathway for nursing education for tthe Pacific in the specialty area of TB Nursing.

The project will strengthen collaborative partnerships between Australia and Pacific Island Countries. The training and mentoring program will establish better surveillance and care networks across the Pacific to prevent the emergence and spread of DR-TB, while the intervention and modelling data will have direct impact on practice and policy. Overall, the project will strengthen regional Health Security by reducing the threat of DR-TB and Leprosy in the Pacific and play a catalytic role in regional TB and Leprosy elimination efforts.



HISTORY OF FUNDING FOR RESEARCH AND PROJECT ACTIVITIES 1999–2020

SCHOLARSHIPS, FELLOWSHIPS

A HISTORY 2001 – 2020

ARC Research Support Grants (Commenced 2020)

Date	Recipient	Subject	Award
2020	Professor Gary Lee *Institute for Respiratory Health, University of Western Australia*	Mechanisms of Streptococcus pneumoniae mesothelial cell invasion	$20,000
2020	Associate Professor Katharina Ronacher *Mater Research Institute, The University of Queensland*	Pre-clinical validation of a novel target for host-directed therapy for the treatment of TB	$20,000
2020	Dr Hannah Moore *Telethon Kids Institute, WA*	Understanding the true burden of paediatric respiratory syncytial virus in order to optimise prevention programs	$20,000

ARC Harry Windsor Medical Research Grants (2001 - 2019)

Date	Recipient	Subject	Award
2019	Warwick Britton *Centenary Institute, University of Sydney, NSW*	Protecting the lungs against TB by pulmonary delivery of a novel TB Service.	$20,000
2019	Chris Degeling *University of Wollongong, NSW*	TB elimination: a qualitative investigation of the perspectives of South Asian migrant communities in the Illawarra.	$20,000
2019	Justin Denholm *University of Melbourne, VIC*	Evaluating the impact of LTBI treatment strategies in Australia	$20,000
2018	Paul King *Monash Medical Centre and Monash University, VIC*	Influenza A virus (IAV) infection induces the formation of phagocytic extracellular traps, which contribute to the pathogenesis of exacerbations of COPD	$50,000
2018	Cynthia Whitchurch *University of Technology Sydney, NSW*	Understanding the immunology of Pseudomonas aeruginosa lung infection.	$50,000
2017	Michael Berk *Deakin University, VIC*	Can we reduce tobacco smoking using N-acetylcysteine as a cessation treatment	$50,000
2017	Greg Fox *University of Sydney, NSW*	New digital strategies to enhance tuberculosis treatment adherence in Vietnam	$50,000
2016	Graeme Zosky *University of Tasmania, TAS*	Iron laden particulate matter enhances bacterial growth in the lung	$50,000
2016	Paul Foster *University of Newcastle, NSW*	Understanding the role of the newly discovered 2D4 T helper(TH) - 22 cell subset in models of respiratory infection and inflammation	$50,000
2016	Ian Yang *University of Queensland, QLD*	Using the lung microbiome to predict responses to continuous antibiotics in COPD	$50,000
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

RESEARCH GRANTS

A HISTORY 2000 – 2020

Date	Recipient	Subject	Award
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, VIC*	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
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, 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, QLD*	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, WA*	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
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, NT*	Improved hygiene measures for reduced infection in Australian Aboriginal Children: a randomised controlled trial	$48,424

RESEARCH GRANTS

Date	Recipient	Subject	Award
2002	Evangelia Daviskas, Sandra Anderson & Iven Young *Royal Prince Alfred Hospital, Sydney, NSW*	Effect of mannitol on the clearance of mucus in patients with COPD	$38,593
2001	Amanda Baker and Vaughan Carr *University of Newcastle, NSW*	Randomised controlled trial of a smoking cessation intervention among people with a mental illness	$63,370
2001	Terence Amis and John Wheatley *Westmead Hospital, NSW*	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, NSW*	Preventing infant exposure to tobacco smoke: evaluation of an early childhood intervention	$53,006

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

PROJECTS

A HISTORY 1999 – 2020

ARC Project Awards (1999 - Present)

Date	Recipient/Project	Award
2020	Solomon Islands Cough and Premature Death in the Solomon Islands	$18,000
2020	Chuuk, Federated States of Micronesia Active Case Finding for TB	$17,000
2020	East Kwaio, Solomon Islands Community based TB case finding and treatment support	$10,000
2018-2020	Australia Homeless and vulnerable with TB	$14,992
2018	The Safe Working Practices Laboratory Handbook - a Global Resource	$13,500
2018-2020	Pacific Island TB Network Sputum Quality project	$10,000
2017	Marshall Islands Funding A1c kits for the screening activity on Ebeye Island	$5,264
2017-2018	Papua New Guinea Economic evaluation of patient costs associated with tuberculosis and care in Papua New Guinea.	$25,000
2015-2020	Australia Establishing a framework for nursing education in Australia	$70,000
2013-2016	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	Australia 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
2011-2018	Vietnam MECOR Course - Level 1, Level 2 and Level 3 workshops	$90,000
2010	Secretariat of Pacific Community Evaluation of the effectiveness of the Community Component of the Kiribati Quality TB Epidemic Control Project	$4,800
2010	Australia 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

PROJECTS

Date	Recipient/Project	Award
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
2008-2009	Federated States of Micronesia (Chuuk) Support of a tutor and education materials for children for MDRTB	$5,537
2007-2009	Australia 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	Australia 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
2006-2020	PITCA - Pacific Island TB Controllers Association Training of nurses and related workers in the Northern Pacific	$177,628
2006	Kiribati 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 - 2005	TB laboratory Training Tonga, Samoa, Kiribati and the Cook Islands	$189,231
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

2020 FINANCIALS AND ACFID SUMMARY FINANCIALS

DIRECTORS' REPORT

Your Directors present their report on the Company for the financial year ended 31 December 2020.

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

David Macintosh AM
BBS (UTS), FCA
Appointed to the Board 19 June 1997. President
Interest 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

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

Christopher Turner
B.Comm Dip FS Assoc Fin FPA
Appointed to the Board 22nd May 2017. Finance Director
Interest in contracts: Nil

Professor Iven Young AM
BSc(Med), MBBS,PhD,FRACP
Appointed to the Board 6 August 1998. Chair ARC Research Committee
Interest in contracts: Nil
Resigned: 31 December 2020

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

Kerrie Shaw
Registered Nurse
Appointed to the Board 4 February 2013. Chair ARC Project Group
Interest in contracts: Nil

Professor Gregory Fox
BSc(Med) MBBS (Hons) FRACP PhD MIPH
Appointed to the Board 22 May 2017
Interest in contracts: Nil

Jean Santos
BSCS IT
Appointed to the Board on 27 May 2019
Interests in contracts: Nil

Amanda Christensen AM
Registered Nurse
Appointed to the Board on 22 January 2001. Executive Director
Interests in contracts: Nil

Meetings of Directors

The number of Directors' meetings held during the financial period and the number of meetings attended by each Director were:

Name of Director	Number Held while in Office	Number attended
David Macintosh AM	4	4
Peter Gianoutsos	4	3
Robyn Johnson	4	4
Christopher Turner	4	4
Iven Hunter Young AM	4	4
Ian Ramsay	4	3
Kerrie Shaw	4	4
Gregory Fox	4	4
Jean Santos	4	3
Amanda Christensen AM	4	4

DIRECTORS' REPORT

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
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
ii. to improve lung health in communities, with an emphasis on disadvantaged groups.

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

iii. the Board strives to attract sustainable partnerships.
iv. the Board undertakes fundraising.
v. 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 2020 the collective liability of members was $25 (2019:$25)

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:

Christopher Turner
Director
Sydney, 2nd May 2021

Amanda Christensen
Executive Director
Sydney, 2nd May 2021

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 2020 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.

CONROY AUDIT AND ADVISORY

D R Conroy FCA
Principal
Auditor No: 2251
Sydney, 9th April 2021

STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME
For the Year Ended 31 December 2020

	Note	2020 $	2019 $
Revenue	2	583,307	760,968
Depreciation and amortisation expense	3	(6,216)	(3,826)
Research grants, fellowships and scholarships		(70,000)	(91,421)
Education & scholarships		(2,250)	-
Project funding		(100,549)	(63,659)
Investment expense		(18,636)	(18,636)
Employee benefits expense		(264,318)	(215,467)
Other expenses		(100,067)	(218,900)
Profit/(Loss) before income tax		21,271	149,059
Income tax expense	1	-	-
Profit/(Loss) for the year		21,271	149,059
Other comprehensive income after tax:			
Net gain on revaluation of investment property		-	-
Net gain /(Loss) on revaluation of financial assets		56,224	136,455
Other comprehensive income for the year net of tax		56,224	136,455
Total comprehensive income for the year		77,495	285,514

The accompanying notes form part of these financial statements

STATEMENT OF FINANCIAL POSITION
As At 31 December 2020

	Note	2020 $	2019 $
ASSETS			
Current Assets			
Cash and cash equivalents	5	394,611	480,330
Trade and other receivables	6	26,850	17,909
Other current assets	7	7,883	5,910
Total Current Assets		**429,344**	**504,149**
Non-Current Assets			
Financial assets	8	1,680,525	1,595,217
Property, plant and equipment	9	45,596	44,202
Investment property	10	3,000,000	3,000,000
Total Non-Current Assets		**4,726,121**	**4,639,419**
TOTAL ASSETS		**5,155,465**	**5,143,568**
LIABILITIES			
Current Liabilities			
Trade and other payables	11	67,766	134,855
Employee Entitlements	12	58,277	56,786
Total Current Liabilities		**126,043**	**191,641**
TOTAL LIABILITIES		**126,043**	**191,641**
NET ASSETS		**5,029,422**	**4,951,927**
EQUITY			
Reserves	13	4,367,651	4,311,427
Retained earnings		661,771	640,500
TOTAL EQUITY		**5,029,422**	**4,951,927**

The accompanying notes form part of these financial statements

STATEMENT OF CHANGES IN EQUITY
For The Year Ended 31 December 2020

	Capital Profits Reserves $	Asset Revaluation Reserves $	Retained Earnings/ (Accumulated Losses) $	Total $
Balance at 1 January 2019	2,411,980	1,762,992	491,441	4,666,413
Profit/(Loss) attributable to members	-	-	149,059	149,059
Total comprehensive income for the year	-	136,455	-	136,455
Transfers on sale of assets	-	-	-	-
Balance at 31 December 2019	**2,411,980**	**1,899,447**	**640,500**	**4,951,927**
Profit/(Loss) attributable to members	-	-	21,271	21,271
Total comprehensive income for the year	-	56,224	-	56,224
Balance at 31 December 2020	**2,411,980**	**1,955,671**	**661,771**	**5,029,422**

STATEMENT OF CASH FLOWS
For The Year Ended 31 December 2020

	Note	2020 $	2019 $
Cash Flows From Operating Activities			
Receipts from customers		564,123	732,782
Payments to suppliers and employees		(632,543)	(542,777)
Interest received		406	817
Distributions received		52,187	54,962
Net cash provided by (used in) operating activities	17(b)	**(15,827)**	**245,784**
Cash Flows From Investing Activities			
Proceeds from sale of available-for-sale investments		308,246	474,146
Payment for property, plant and equipment		(7,610)	-
Payment for available-for-sale investments		(370,528)	(399,043)
Net cash provided by (used in) investing activities		**(69,892)**	**75,103**
Net Increase/(Decrease) in Cash Held		(85,719)	320,887
Cash at beginning of financial year		480,330	159,443
Cash at end of financial year	17(a)	**394,611**	**480,330**

The accompanying notes form part of these financial statements

NOTES TO AND FORMING PART OF THE ACCOUNTS
For The Year Ended 31 December 2020

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Reporting entity

Australian Respiratory Council applies Australian Accounting Standards – Reduced Disclosure Requirements as set out in AASB 1053: Application of Tiers of Australian Accounting Standards.

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 Australian Charities and Not-for-profits Commission Act 2012. 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 accrual 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.

Accounting Policies

Income Tax

No provision for income tax has been raised as the entity is exempt from income tax under DIV 50 of the Income Tax Assessment Act 1997.

Inventories

Inventories are measured at the lower of cost and net realisable value.

Investment Property

Investment property is property held either to earn rental income or for capital appreciation or for both, but not for sale in the ordinary course of business use in the production or supply of goods or services or for administrative purposes. Investment property is measured at cost on initial recognition and improvements have been depreciated over their useful life.

When the use of a property changes such that it is reclassified as property, plant and equipment, its fair value at the date of reclassification becomes its cost for subsequent accounting.

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.

Gains and losses on disposals are determined by comparing proceeds with the carrying amount. These gains and losses are included in the statement of profit or loss.

Impairment of non-financial assets

Non-financial assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount.

Recoverable amount is the higher of an asset's fair value less costs of disposal and value-in-use. The value-in-use is the present value of the estimated future cash flows relating to the asset using a pre-tax discount rate specific to the asset or cash-generating unit to which the asset belongs. Assets that do not have independent cash flows are grouped together to form a cash-generating unit.

Leases

At inception of a contract, the entity assesses if the contract contains or is a lease. If there is a lease present, a right-of-use asset and a corresponding lease liability is recognised by the entity where the entity is a lessee. However all contracts that are classified as short-term leases (lease with remaining lease term of 12 months or less) and leases of low-value assets are recognised as an operating expense on a straight-line basis over the term of the lease.

Initially the lease liability is measured at the present value of the lease payments still to be paid at the commencement date. The lease payments are discounted at the interest rate implicit in the lease. If this rate cannot be readily determined, the entity uses the incremental borrowing rate.

Lease payments included in the measurement of the lease liability are as follows:

NOTES TO AND FORMING PART OF THE ACCOUNTS
For The Year Ended 31 December 2020

– fixed lease payments less any lease incentives;

– variable lease payments that depend on an index or rate, initially measured using the index or rate at the commencement date;

– the amount expected to be payable by the lessee under residual value guarantees;

– the exercise price of purchase options, if the lessee is reasonably certain to exercise the options;

– lease payments under extension options, if the lessee is reasonably certain to exercise the options; and

– payments of penalties for terminating the lease, if the lease term reflects the exercise of an option to terminate the lease.

The right-of-use assets comprise the initial measurement of the corresponding lease liability as mentioned above, any lease payments made at or before the commencement date, as well as any initial direct costs. The subsequent measurement of the right-of-use assets is at cost less accumulated depreciation and impairment losses.

Right-of-use assets are depreciated over the lease term or useful life of the underlying asset, whichever is the shortest.Where a lease transfers ownership of the underlying asset or the cost of the right-of-use asset reflects that the entity anticipates to exercise a purchase option, the specific asset is depreciated over the useful life of the underlying asset.

Trade and other payables
These amounts represent liabilities for goods and services provided to the company prior to the end of the financial year and which are unpaid. Due to their short-term nature they are measured at amortised cost and are not discounted. The amounts are unsecured and are usually paid within 30 days of recognition.

Employee Benefits
Short-term employee benefits
Liabilities for wages and salaries, including non-monetary benefits, annual leave and long service leave expected to be settled wholly within 12 months of the reporting date are measured at the amounts expected to be paid when the liabilities are settled.

Other long-term employee benefits
The liability for annual leave and long service leave not expected to be settled within 12 months of the reporting date are measured at the present value of expected future payments to be made in respect of services provided by employees up to the reporting date using the projected unit credit method. Consideration is given to expected future wage and salary levels, experience of employee departures and periods of service. Expected future payments are discounted using market yields at the reporting date on national government bonds with terms to maturity and currency that match, as closely as possible, the estimated future cash outflows.

Revenue recognition
The company recognises revenue as follows:

Revenue from contracts with customers
Revenue is recognised at an amount that reflects the consideration to which the company is expected to be entitled in exchange for transferring goods or services to a customer. For each contract with a customer, the company: identifies the contract with a customer; identifies the performance obligations in the contract; determines the transaction price which takes into account estimates of variable consideration and the time value of money; allocates the transaction price to the separate performance obligations on the basis of the relative stand-alone selling price of each distinct good or service to be delivered; and recognises revenue when or as each performance obligation is satisfied in a manner that depicts the transfer to the customer of the goods or services promised.

Variable consideration within the transaction price, if any, reflects concessions provided to the customer such as discounts, rebates and refunds, any potential bonuses receivable from the customer and any other contingent events. Such estimates are determined using either the 'expected value' or 'most likely amount' method. The measurement of variable consideration is subject to a constraining principle whereby revenue will only be recognised to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognised will not occur. The measurement constraint continues until the uncertainty associated with the variable consideration is subsequently resolved. Amounts received that are subject to the constraining principle are recognised as a refund liability.

Sales revenue
Interest revenue
Interest revenue is recognised as interest accrues using the effective interest method. This is a method of calculating the amortised cost of a financial asset and allocating the interest income over the relevant period using the effective interest rate, which is the rate that exactly discounts estimated future cash receipts through the expected life of the financial asset to the net carrying amount of the financial asset.

Donations
Donations are recognised when received.

NOTES TO AND FORMING PART OF THE ACCOUNTS
For The Year Ended 31 December 2020

Grants
Grant revenue is recognised in profit or loss when the company satisfies the performance obligations stated within the funding agreements.If conditions are attached to the grant which must be satisfied before the company is eligible to retain the contribution, the grant will be recognised in the statement of financial position as a liability until those conditions are satisfied.

Other revenue
Other revenue is recognised when it is received or when the right to receive payment is established.

Current and non-current classification
Assets and liabilities are presented in the statement of financial position based on current and non-current classification.

An asset is classified as current when: it is either expected to be realised or intended to be sold or consumed in the company's normal operating cycle; it is held primarily for the purpose of trading; it is expected to be realised within 12 months after the reporting period; or the asset is cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least 12 months after the reporting period. All other assets are classified as non-current.

A liability is classified as current when: it is either expected to be settled in the company's normal operating cycle; it is held primarily for the purpose of trading; it is due to be settled within 12 months after the reporting period; or there is no unconditional right to defer the settlement of the liability for at least 12 months after the reporting period. All other liabilities are classified as non-current.

Deferred tax assets and liabilities are always classified as non-current.

Cash and cash equivalents
Cash and cash equivalents includes cash on hand, deposits held at call with financial institutions, other short-term, highly liquid investments with original maturities of three months or less that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.

Trade and other receivables
Other receivables are recognised at amortised cost, less any allowance for expected credit losses.

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.

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.

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.

Classification and subsequent measurement

1. Financial assets at fair value through profit or loss
   Financial assets are classified at fair value through the profit or loss when they are held for trading for the purpose of profit or loss in the short term profit taking. Realised and unrealised gains and losses arising from changes in fair value are included in profit or loss in the period in which they arise.

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.

NOTES TO AND FORMING PART OF THE ACCOUNTS
For The Year Ended 31 December 2020

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

Fair value measurement
When an asset or liability, financial or non-financial, is measured at fair value for recognition or disclosure purposes, the fair value is based on the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date; and assumes that the transaction will take place either: in the principal market; or in the absence of a principal market, in the most advantageous market.

Fair value is measured using the assumptions that market participants would use when pricing the asset or liability, assuming they act in their economic best interests. For non-financial assets, the fair value measurement is based on its highest and best use. Valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, are used, maximising the use of relevant observable inputs and minimising the use of unobservable inputs.

Critical Accounting Estimates Judgments and Assumptions
The preparation of the financial statements requires management to make judgements, estimates and assumptions that affect the reported amounts in the financial statements. Management continually evaluates its judgements and estimates in relation to assets, liabilities, contingent liabilities, revenue and expenses. Management bases its judgements, estimates and assumptions on historical experience and on other various factors, including expectations of future events, management believes to be reasonable under the circumstances. The resulting accounting judgements and estimates will seldom equal the related actual results. The judgements, estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities (refer to the respective notes) within the next financial year are discussed below.

Estimation of useful lives of assets
The company determines the estimated useful lives and related depreciation and amortisation charges for its property, plant and equipment and finite life intangible assets. The useful lives could change significantly as a result of technical innovations or some other event. The depreciation and amortisation charge will increase where the useful lives are less than previously estimated lives, or technically obsolete or non-strategic assets that have been abandoned or sold will be written off or written down.

Impairment of non-financial assets other than goodwill and other indefinite life intangible assets
The company assesses impairment of non-financial assets other than goodwill and other indefinite life intangible assets at each reporting date by evaluating conditions specific to the company and to the particular asset that may lead to impairment. If an impairment trigger exists, the recoverable amount of the asset is determined. This involves fair value less costs of disposal or value-in-use calculations, which incorporate a number of key estimates and assumptions.

Employee benefits provision
As discussed in note 1, the liability for employee benefits expected to be settled more than 12 months from the reporting date are recognised and measured at the present value of the estimated future cash flows to be made in respect of all employees at the reporting date. In determining the present value of the liability, estimates of attrition rates and pay increases through promotion and inflation have been taken into account.

The Notes to the Financial Statements
The notes present information that is relevant to an understanding of the material items contained in the financial statements.
The notes give prominence to areas that are considered to be most relevant to an understanding of the statement of financial position and the profit or loss and other comprehensive income and statement of changes in equity and cashflows and are cross referenced to those statements.

NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended 31 December 2020

	2020 $	2019 $
2. Revenue		
Operating Activities		
Appeals	54,530	51,930
Net profit/(loss) on sale of investments	(33,198)	(32,715)
Rental revenue for property investment	213,624	220,285
Interest received	406	817
Fund distributions from investments	52,187	49,439
Legacies & donations	45,640	350,227
Member subscriptions	750	1,250
Miscellaneous income	787	1,660
Refund of franking credits	-	84
Covid 19 Relief - Jobkeeper	77,400	-
Covid 19 Relief - Cash Boost	51,463	-
Sundry income	119,718	117,991
Total Revenue	583,307	760,968
3. Profit From Ordinary Activities		
Expenses		
Depreciation of Non-Current Assets:		
Plant and equipment	6,216	3,826
4. Auditor's Remuneration		
Remuneration of the Auditor of the Company for:		
- Auditing the Financial Report	14,900	14,600
5. Cash and Cash Equivalents		
Cash at bank	394,611	480,330
	394,611	480,330
6. Trade and Other Receivables		
Trade debtors	26,850	17,909
	26,850	17,909
7. Other Current Assets		
Prepayments	7,883	5,910

NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended 31 December 2020

	2020 $	2019 $
8. Financial Assets		
Non Current		
Managed funds - at fair value	1,680,525	1,595,217
Total financial assets	**1,680,525**	**1,595,217**
9. Property, Plant & Equipment		
Non Current		
Plant & equipment at cost	128,034	120,424
Less: accumulated depreciation and impairment	(82,438)	(76,222)
Total property, plant and equipment	**45,596**	**44,202**

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	44,202	44,202
Additions	7,610	7,610
Disposals	-	-
Depreciation expense	(6,216)	(6,216)
Carrying amount at the end of year	45,596	45,596

10. Investment Property		
Non Current		
Investment property - at fair value Directors' valuation	3,000,000	3,000,000
Total	**3,000,000**	**3,000,000**

Investment Property Revaluations

At 31 December 2020, the property has been recorded at Directors valuation which is based on an independent registered valuers report from WK Wotton & Partners Mr Wayne Wotton and Mr Brett Allan Davis, Certified Practice Valuer API Member No: 68007 and 68956 repectively dated 22 November 2017.

NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended 31 December 2020

		2019 $	2019 $
11.	**Trade and Other Payables**		
	Unsecured liabilities		
	Trade payables	6,200	2,808
	Sundry payables and accrued expenses	61,566	132,047
	Total	**67,766**	**134,855**
12.	**Employee Entitlements**		
	Provision for annual leave	33,214	36,384
	Provision for long service leave	25,063	20,402
	Total	**58,277**	**56,786**
	Number of employees		
	Number of employees at year end	3	2
13.	**Reserves**		
	Capital profits reserve	2,411,980	2,411,980
	Asset revaluation reserve	1,955,671	1,899,447
	Total	4,367,651	4,311,427
	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	1,899,447	1,762,992
	Revaluation increment/(decrement)	56,224	136,455
	Transfers	-	-
	Balance at end of year	**1,955,671**	**1,899,447**

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 2020 the number of members was 25 (2019:25).

NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended 31 December 2020

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:

	2020 $	2019 $
Financial assets		
Cash and cash equivalents	394,611	480,330
Trade and other receivables	26,850	17,909
Other current assets	7,883	5,910
Financial assets at fair value through profit or loss	1,680,525	1,595,217
Total financial assets	**2,109,869**	**2,099,366**
Financial liabilities at amortised cost:		
– trade and other payables	67,766	134,855
Total financial liabilities	**67,766**	**134,855**

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 entity, directly or indirectly, including any Director (whether executive or otherwise) of that entity is considered key management personnel.

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

	2020 $	2019 $
Key management personnel compensation	229,684	173,588

NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended 31 December 2020

	2020 $	2019 $

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	**394,611**	**480,330**

(b) Reconciliation of Cash Flow from Operations with Profit after Income Tax

Net income/loss for the period	21,271	149,059
Cash flows excluded from profit attributable to operating activities		
Non cash flows in profit		
Depreciation	6,216	3,826
Net (gain)/loss on disposal of investments	33,198	32,715
Changes in assets and liabilities, net of the effects of purchase and disposal of subsidiaries		
(Increase)/decrease in trade and term receivables	(8,941)	49,605
(Increase)/decrease in prepayments	(1,973)	2,098
Increase/(decrease) in trade payables and accruals	(67,089)	11,483
Increase/(decrease) in provision for employee benefits	1,491	(3,002)
Net cash inflow/(outflow) from operating activities	**(15,827)**	**245,784**

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	100,170	402,157
Less: Total direct costs of fundraising	18,871	25,396
Net surplus from fundraising activities	**81,299**	**376,761**

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

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

(c) Fundraising appeals conducted during the financial period

Appeals only.

(d) Comparisons

Total cost of fundraising/gross income from fundraising	19%	6%
Net surplus from fundraising/gross income from fundraising	81%	94%
Total cost of services/total expenditure	100%	100%
Total cost of services/total income received	19%	6%

SUMMARY FINANCIAL REPORT - INCOME STATEMENT
For The Year Ended 31 December 2020

	2020 $	2019 $
REVENUE		
Donation and Gifts - Monetary & Non monetary	65,649	70,694
Bequests and Legacies	34,521	331,463
Grants		
Other Australian	81,796	55,000
Other overseas	37,922	62,863
Investment Income	233,019	237,910
Other Income	130,400	3,038
TOTAL REVENUE	**583,307**	**760,968**
EXPENDITURE		
International Aid and Development		
International programs		
Funds to international projects	19,576	49,292
Program Support Costs	66,210	60,466
Community education	16,815	4,873
Fundraising Costs		
Public	18,871	25,396
Accountability and Administration	219,243	242,285
Non - Monetary Expenditure	-	-
Total International Aid and Development Programs Expenditure	**340,715**	**382,312**
Domestic projects	142,461	147,916
Investment Expenditure	49,829	60,252
Other Expenses	29,051	21,429
TOTAL EXPENDITURE	**562,056**	**611,909**
EXCESS/(SHORTFALL) OF REVENUE OVER EXPENDITURE	21,251	149,059
Net gain/(loss) on revaluation of financial assets and investment property	56,244	136,455
EXCESS/(SHORTFALL) OF REVENUE OVER EXPENDITURE	77,495	285,514

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. For further information on the Code please refer to the ACFID website "www.acfid.asn.au".

SUMMARY FINANCIAL REPORT - BALANCE SHEET
As At 31 December 2020

	2020 $	2019 $
ASSETS		
Current Assets		
Cash and cash equivalents	394,611	480,330
Trade and other receivables	26,850	17,909
Other current assets	7,883	5,910
Total Current Assets	**429,344**	**504,149**
Non-Current Assets		
Financial assets	1,680,525	1,595,217
Property, plant and equipment	45,596	44,202
Investment property	3,000,000	3,000,000
Total Non-Current Assets	**4,726,121**	**4,639,419**
TOTAL ASSETS	**5,155,465**	**5,143,568**
LIABILITIES		
Current Liabilities		
Trade and other payables	67,766	134,855
Provisions	58,277	56,786
Total Current Liabilities	**126,043**	**191,641**
TOTAL LIABILITIES	**126,043**	**191,641**
NET ASSETS	**5,029,422**	**4,951,927**
EQUITY		
Reserves	4,367,651	4,311,427
Retained earnings	661,771	640,500
TOTAL EQUITY	**5,029,422**	**4,951,927**

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. For further information on the Code please refer to the ACFID website "www.acfid.asn.au".

SUMMARY OF FINANCIAL REPORT
STATEMENT OF CHANGES IN EQUITY
For The Year Ended 31 December 2020

	Capital profits Reserves $	Asset Revaluation Reserves $	Retained Earnings/ (accumulated losses) $	Total $
Balance at 1 January 2019	2,411,980	1,762,992	491,441	4,666,413
Excess of revenue over expense	-	-	149,059	149,059
Total comprehensive income for the year	-	136,455	-	136,455
Transfers on sale of assets	-	-	-	-
Balance at 31 December 2019	2,411,980	1,899,447	640,500	4,951,927
Excess of revenue over expense	-	-	21,271	21,271
Total comprehensive income for the year	-	56,224	-	56,224
Transfers on sale of assets	-	-	-	-
Balance at 31 December 2020	**2,411,980**	**1,955,671**	**661,771**	**5,029,422**

The above disclosures are prepared in accordance with the requirements set out in the ACFID Code of Conduct.
For further information on the Code please refer to the ACFID website "www.acfid.asn.au".

DIRECTORS' DECLARATION

The directors of the registered entity declare that, in the directors' opinion:

1. The financial statements and notes, as set out on pages 31 to 45, are in accordance with the Australian Charities and Not-for-profits Commission Act 2012 and:
   - **i.** comply with Australian Accounting Standards – Reduced Disclosure Requirements; and
   - **ii.** give a true and fair view of the financial position of the registered entity as at 31 December 2020 and of its performance for the year ended on that date.
2. There are reasonable grounds to believe that the registered entity will be able to pay its debts as and when they become due and payable.

This declaration is signed in accordance with subs 60.15(2) of the Australian Charities and Not-for-profits Commission Regulation 2013.



Christopher Turner
Director
Sydney, 2nd May 2021



Amanda Christensen
Executive Director
Sydney, 2nd May 2021

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 Audit of the Financial Report Opinion

We have audited the financial report of Australian Respiratory Council (the registered entity), which comprises the statement of financial position as at 31 December 2020, the statement of profit or loss and other 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

In our opinion, the accompanying financial report of Australian Respiratory Council has been prepared in accordance with Div 60 of the Australian Charities and Not-for-profits Commission Act 2012, including:

i. giving a true and fair view of the registered entity's financial position as at 31 December 2020 and of its financial performance for the year then ended; and

ii. complying with Australian Accounting Standards – Reduced Disclosure Requirements and the Australian Charities and Not-for-profits Commission Regulation 2013, and the Corporations Regulations 2001;

We have also audited the summary financial reports of Australian Respiratory Council which in our opinion are in accordance with the requirements set out in the ACFID Code of Conduct. For further information on the Code please refer to the ACFID website "www.acfid.asn.au".

Basis for Opinion

We conducted our audit in accordance with Australian Auditing Standards. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Report section of our report. We are independent of the registered entity in accordance with the ethical requirements of the Accounting Professional and Ethical Standards Board's APES 110: Code of Ethics for Professional Accountants (the Code) that are relevant to our audit of the financial report in Australia. We have also fulfilled our other ethical responsibilities in accordance with the Code.

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

Information Other than the Financial Report and Auditor's Report Thereon

The directors are responsible for the other information. The other information comprises the information included in the registered entity's annual report for the year ended 31 December 2020, but does not include the financial report and our auditor's report thereon. Our opinion on the financial report does not cover the other information and accordingly we do not express any form of assurance conclusion thereon. In connection with our audit of the financial report, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial report or our knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Directors for the Financial Report

The directors of the registered entity 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 Australian Charities and Not-for-profits Commission Act 2012 and for such internal control as the directors determine is necessary to enable the preparation of the financial report that gives a true and fair view and is free from material misstatement, whether due to fraud or error.

In preparing the financial report, the directors are responsible for assessing the registered entity's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of the Financial Report

Our objectives are to obtain reasonable assurance about whether the financial report as a whole is free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Australian Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they

INDEPENDENT AUDITOR REPORT
To The Members of the Australian Respiratory Council

could reasonably be expected to influence the economic decisions of users taken on the basis of this financial report.

As part of an audit in accordance with the Australian Auditing Standards, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit 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 company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.

Conclude on the appropriateness of the directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial report or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial report, including the disclosures, and whether the financial report represents the underlying transactions and events in a manner that achieves fair presentation.

We communicate with the directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.



D R Conroy FCA
Principal
Auditor No: 2251
Sydney, 9th April 2021

Conroy Audit & Advisory

CONROY AUDIT & ADVISORY
Chartered Accountants

Level 2 154 Elizabeth Street Sydney NSW 2000
Telephone: 02 9267 9227
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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

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 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

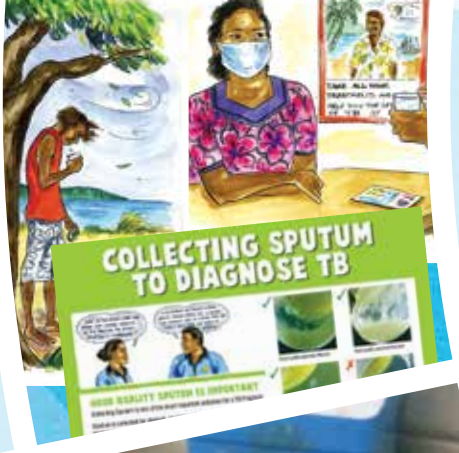
2015 ARC hosted the 5th Conference of The Union Asia Pacific Region, held in Sydney, Australia

2016 Launch of "Funding the Discovery of New Knowledge"- a compilation of reports from Harry Windsor grant recipients 1986 -2015

2018 ARC contributes to the work of The Union Asia Pacific Region and The Union Nurses and Allied Professionals Sub-Section

2019 ARC continues to develop the Post Graduate Diploma / Masters of Nursing (TB Management)

2020 ARC is an implementation partner in the PEARL Project, working to eliminate TB & Leprosy in Kiribati





arc
australian respiratory council
prevention and cure of respiratory illness

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