arc

australian respiratory council

prevention and cure of respiratory illness

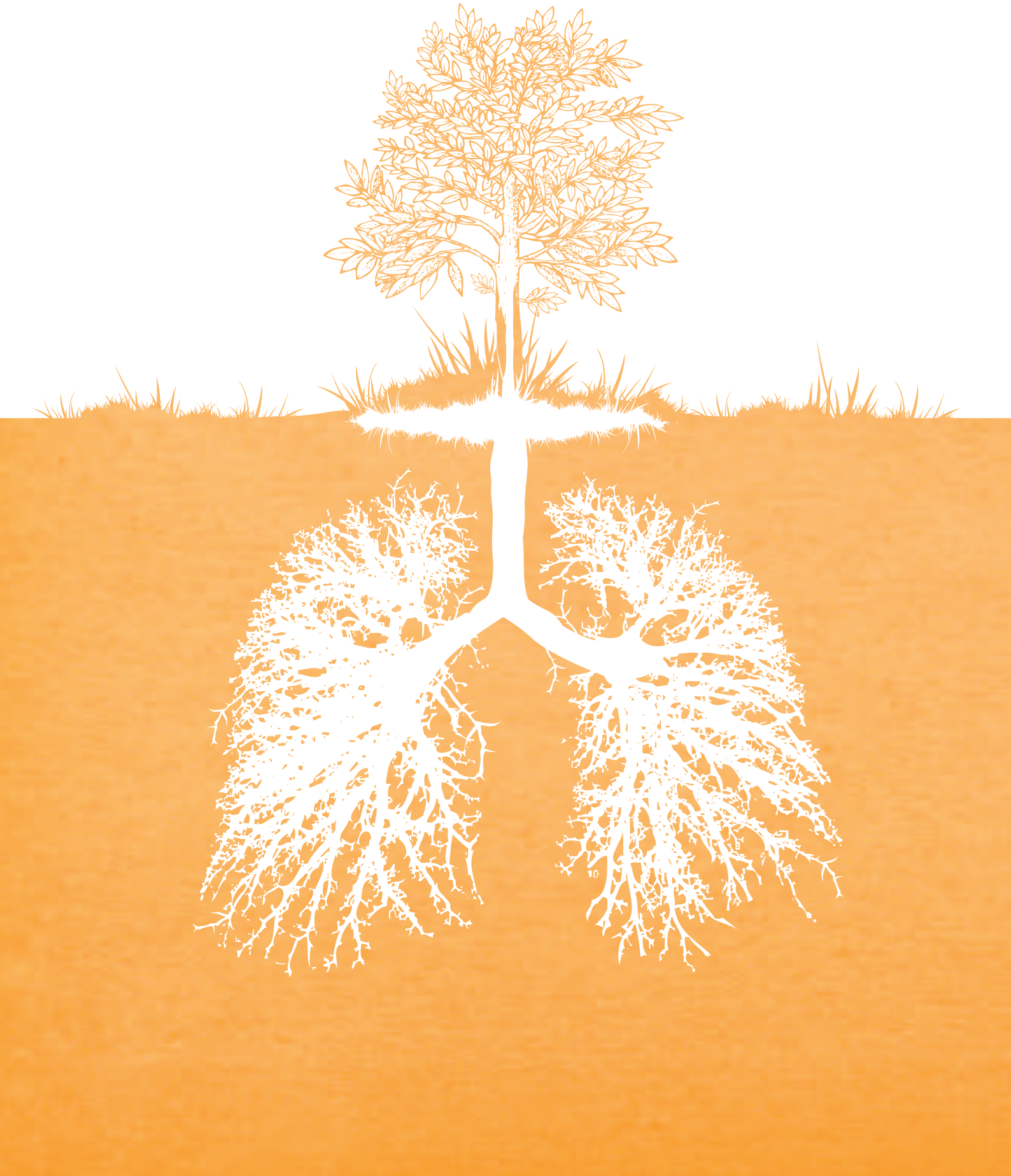
2008 Annual Report

No. 95

arc

australian respiratory council

prevention and cure of respiratory illness



Our Mission

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

Our Patrons

Her Excellency Professor Marie Bashir AC, CVO
Governor of New South Wales.

Sir Nicholas Shehadie AC OBE.

Our Vision

- Continue to build expertise in respiratory health
- Foster innovation in respiratory health research
- Deliver and measure positive impacts to communities and research
- Enhance ARC's role in the country as a unique non-government organisation in the area of lung health
- Advocate to improve respiratory health, particularly in relation to TB and smoking at state, national and international levels

President's Report

David Macintosh

2008 was a year of significant growth for the Australian Respiratory Council. We have strengthened our role in the area of lung health and forged ahead with the foundations for future work and partnerships.

Research

ARCs Harry Windsor Grant Scheme continues to provide Australia-wide research funding. In 2008, three grants were awarded to the following researchers;

- Associate Professor Jenny Alison, University of Sydney, NSW for the project *Optimising mucus clearance with exercise in cystic fibrosis*
- Professor Nicholas Anstey, Menzies School of Health Research, NT for the project *A randomized controlled trial of L-arginine or Vitamin D to improve outcomes in pulmonary tuberculosis*
- Professor Stephen Stick, University of WA, for the project of *Characterisation of airway epithelial cells from young children with cystic fibrosis.*

Detailed reports on each of these research projects follow within the Annual Report.

Dr Ingrid Laing continues as ARCs Ann Woolcock Fellow. Ingrid is in the final year of a four year fellowship and continues her work with children in Papua New Guinea looking at *Genetic influences on causal pathways of acute lower respiratory tract infections in highly susceptible infants.* A detailed report on Ingrid's work follows within the Annual Report.

Ingrid Laing was the first recipient of the Ann Woolcock Fellowship. On behalf of ARC I would like to wish Ingrid all the best for her career and to thank her for being a great ambassador for the fellowship and ARC over the past four years.

ARC's Project work in Australia and Overseas

Continuing to build capacity towards Tuberculosis Prevention and Control

ARC's successful collaboration with the United States Center for Disease Control and Prevention (CDC) continued this year culminating in the joint coordination, facilitation and delivery of the nurses and related workers training at the meeting of the Pacific Island TB Controllers Association (PITCA) in Hawaii.

This is the third year that ARC has been invited to provide faculty for the PITCA meetings and it has once again proven to be a successful activity. This year ARC released the TB Resource Kit which has been a two year project undertaken by Amanda Christensen, Pam Banner and Carol Pozsik on behalf of ARC and the CDC. A detailed report follows within the Annual Report.

Ongoing community TB education in Kiribati

In 2007, ARC successfully funded Wan Smol Bag theatrical group from Vanuatu to produce a play with the Kiribati National TB Control Program team to target school age children with information and education on TB prevention and treatment. The play was subsequently videoed with copies distributed throughout the islands. In 2008 the video became a principal tool in the TB Control Program's school promotional activities.

The success of the first video in boosting the efficacy of the community education program led ARC to fund in early 2008 a second video with the aim of targeting adult viewers with key messages on TB in an entertaining and culturally relevant manner. The video is being produced locally by the Nei Tabera Ni Kai Video Unit and is due for completion and distribution in early 2009.

Reaching out with health information through promotional materials in other languages

Reliable accurate information is not always available in less developed countries; ARC has taken every opportunity to promote its resources, such as the "What is TB?" poster and pamphlet, for translation by countries with a high burden of TB and limited resources.

In 2008 both East Timor and Kiribati requested support with this process and ARC assisted by translating, printing and sending 1000 posters to Caritas Dili for their TB program and 1600 posters to Kiribati to complement their community education program. These posters have been distributed throughout these communities and enthusiastically received.

Working towards smoking reduction in Aboriginal communities in NSW and WA

ARC is currently funding two Aboriginal Tobacco Cessation Projects which already in their first year are having a positive impact.

The NSW Aboriginal Health and Medical Research Unit's (AH&MRC) BREATHE Project which commenced in 2007 is well on its way to meeting its goal of reducing tobacco usage in Aboriginal communities.

In October 2008, twelve NSW Aboriginal Community Controlled Health Services (ACCHS) were randomly allocated as intervention or control sites for the BREATHE project. This meant that chance determined which communities would have access to the services of a tobacco control worker (intervention communities) and which would serve as control communities. Regardless of the status of the community all twelve would benefit from access to scientific data about tobacco usage in their communities.

At the end of 2008 all baseline data had been collected. Approximately 1,100 client surveys, along with data about tobacco control activities and capacity at ACCHSs have been collected and are currently being analysed. With this information the project team, and importantly the participating communities, will know the starting point against which they can measure the impact of the project's activities.

This baseline data is enormously valuable for all the ACCHSs participating in the project – both those randomised to receive the intervention and those who are acting as control Services. It means that Services are better able to identify their tobacco control capacity as well as the community needs.

The six intervention services are currently recruiting their tobacco control workers. In early 2009 training will be undertaken for the tobacco control workers, the training will involve contributions from experts in tobacco control with significant experience in the Indigenous community.

The BREATHE project is being embraced by participating communities. Importantly, there is a sense of anticipation that the results of this important research project could influence activities, funding and policy decisions that will lead to a reduction in tobacco usage among Aboriginal people, thus contributing to closing the gap.

The Aboriginal Health Council of Western Australian (AHCWA) Beyond the Big Smoke Project –co funded by ARC and Healthway is a joint activity with the Kimberly Aboriginal Medical Services Council to provide a state wide Tobacco Control program to Aboriginal communities in Western Australia.

The 'Beyond The Big Smoke' project has two Tobacco Control Officers who cover all the ACCHS across WA. Their role involves helping services develop tobacco control policy for their organisation, building staff skills to yarn about tobacco use (brief intervention) and improving the collection of data about client tobacco use in ACCHS. They also help services identify and support staff (or people within the community) who can act as local 'Tobacco Champions' in each clinic to help build local support capacity for clients and staff trying to quit smoking.

Recently the project developed posters to promote smoking awareness. The project continues in 2009 to expand its activities and reach in the Health Services and communities.

Finances

Financially the 2008 year has been very difficult with a loss of $921,065 compared to $176,860 in the previous 18 month period. Research grants, fellowships and scholarships accounted for $214,750 of this amount with domestic and overseas projects being $498,779 and $127,522 respectively. This expenditure totalling $841,051 has been essential to maintain our commitment to funding in accordance with our organisational objectives.

Our organisation exists to provide for the important work detailed in this annual report and the previous 95 years of our history. Certainly we will have to trim costs and expenditure to reflect the decreased level of investment income in the year ahead however, we will continue to strive to 'make a difference' to peoples' lives.

The Board adopted in July 2008 a revised Fundraising Strategy. The strategy focuses on expanding ARC's fund raising activities to include; direct mail campaigns, an acquisition and bequest program and identification of alternate funding sources to allow ARC to continue its work.

Thank you to Sheila Simpson who contributed to the success of our Christmas fund raising campaign, your generosity in sharing your story with our donors was greatly appreciated.

The Board

On behalf of ARC I would like to thank each of our Directors for their continued contribution to the success of our organisation. The expertise and enthusiasm that each bring to the organisation is invaluable.

Robert Horsell has continued to provide wise counsel and leadership as our Finance Director. Paul Seale continues in his role as Vice President and long standing Board Member. Michael Levy continues to lead ARC's Project Advisory Group and provides guidance and support for our expanding project portfolio. Michael continues to serve as a Board Member and resigned from the Vice President role in 2008 after many years of contribution in this role.

Iven Young continues to guide ARC's Research Committee providing technical expertise and leadership in the administration and awarding of the Harry Windsor Grant Scheme and the Ann Woolcock Fellowship Program.

Peter Gianoutsos was elected as a Vice President this year and has actively taken up this role. Ian Ramsay joined the Board in 2008; we look forward to his future contribution and support.

Staff

2008 was year of significant growth and productivity in our organisation and this can be attributed to the outstanding contribution and expertise of the staff. We have strengthened our role as a unique non government organisation in the area of lung health and forged ahead with the foundations for future work and partnerships.

In 2008, Judy Begnell's role has been expanded to that of Operations Manager. Judy has enthusiastically taken on additional duties and activities that have had an impact on the efficiency and effectiveness of our organisation. In particular, Judy has developed ARCs Fundraising Strategy and plans to implement in 2009 a Bequest Program to provide income to support our work.

Helen Smith and Renee Martin continue to develop ARCs Project Strategy and to provide hands on expertise in community based development, project design and management and resource development. Helen and Renee work to continue to expand ARCs project reach and profile.

Audrey Tonkin continues in her role as ARCs committed and enthusiastic volunteer. Audrey's continued support and assistance is much valued in our organisation.

Amanda Christensen

Amanda Christensen joined our Board of Directors in February 2001 and became actively involved in all aspects of our project work particularly in the Western Pacific.

In April 2008 Amanda took leave of absence from the NSW Health Department and provided leadership and direction as the Executive Director during the past 12 months. Returning to the NSW Health Department in April 2009.

Amanda will surely be missed however, she will continue as a Director and a significant contributor to our future success. NSW Health is fortunate to have such dedicated and competent people as Amanda and I personally thank Amanda for the enormous contribution she has made over the past 12 months as Executive Director and the past 8 years as a Director.

Looking forward to 2009

There are a range of exciting projects planned for 2009 which include: ongoing work in the Pacific with the annual joint CDC/ ARC facilitation of the PITCA meeting planned for October; piloting the TB Resource Kit in the Pacific; and commencing work for the first time in the Asian region with the Cambodian Anti Tuberculosis Association on a project to reach high risk groups for the transmission of TB, specifically the elderly and vulnerable, and factory workers.

Acknowledgements and thanks

Special thanks is extended to Pam Banner who with Amanda Christensen continues to provide a consultancy and training role in collaboration with the CDC for nurses and related workers within the Pacific Region. Pam and Amanda have further developed ARC's role and profile as a specialist provider of training and education within the region.

Thank you to ARCs Committee members who continue to provide support and expertise to guide our organisation. The value that your voluntary contributions make to our organisation is greatly appreciated.

On behalf of ARC I would like to thank all of our donors for their continued and generous financial support in the current difficult economic climate. Without this support from our loyal donors we would not be able to undertake many of the activities identified within this report.

David Macintosh

President

Training and development of nurses and related workers in the Northern Pacific

PITCA Faculty. Left to right: Carol Pozsik, Andy Heetderks, Pam Banner, Phil Talboy and Amanda Christensen

PITCA participants

ARC resource kit

For the third year ARC consultants have been involved in delivering training for nurses and related workers in the Northern Pacific Region. Pam Banner and Amanda Christensen as ARC consultants coordinated and delivered in collaboration with the US Centres for Disease Control and Prevention (CDC) the Pacific Island TB Controllers Association (PITCA) 2008 Nurses and Related Workers TB Training Program held in Hawaii from the 1st – 5th December 2008.

The PITCA Meetings are held by the CDC and are supported by the World Health Organisation, The Secretariat of the Pacific Community, the Francis J Curry Regional TB Centre, US National TB Controllers Association and ARC. Each agency contributes to the meeting to build capacity within the region and to harmonize the activities and approach to TB prevention and control across the Northern Pacific Region.

Twenty seven participants from six countries participated in the nurses and related workers training. The countries that were represented include; Palau, Marshall Islands (Ebeye and Majuro), Guam, Hawaii, American Samoa and The Federated States of Micronesia (Yap, Pohnpei, Kosrae, Chuuk).

Participants were either nurses or DOTS workers with differing levels of experience and knowledge. Many of the participants had attended previous PITCA meetings and training activities. The participants were enthusiastic, eager to learn and extremely interactive.

The program evaluations were positive and importantly, a number of the respondents indicated that they acquired new skills as a result of attending the training that will change the way that they work upon returning to their jurisdiction. A detailed evaluation and recommendations for future training activities has been prepared to guide future training activities.

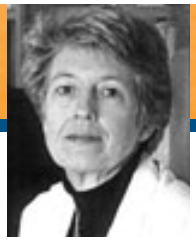
At this meeting ARC launched the TB Resource Kit. The Kit contains training materials as well as educational and promotional resources and is the outcome of ARCs commitment to develop tools that meet the needs of the Pacific TB workers as identified in previous PITCA meetings. The Resource Kit promotes an integrated approach that incorporates health and education to ensure that the health care workers understand not just the cause and the clinical

processes related to TB but are aware of the important linkages between community education and TB prevention and control. The package is available for use by Pacific Island TB Programs to contribute to their capacity to respond to TB within the region.

The Resource Kit is a comprehensive package that combines a training manual, facilitators guide, technical DVD and materials for professional and community education.

Further evaluation of the Resource Kit is required; ARC will convene a Pacific Island reference group to evaluate and refine the resources and plan to pilot and evaluate the kit in one of the Pacific Island TB Programs in 2009.

Investing in the future through research



Ann Woolcock Fellowship

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

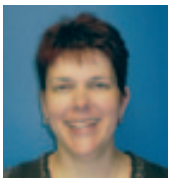
This is a 4 year full time postdoctoral fellowship in biomedical, clinical or public health research Australia based and is valued at approximately $100,000 per year. The Fellowship aims to encourage people of outstanding ability to develop research as a significant component of their career.

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

Ann Woolcock Fellowship

2004 - 2008 The genetic influences on causal pathways of acute lower repiratory tract infections (ALRIs) in highly susceptible infants in PNG.
Dr Ingrid Laing
Telethon Institute for Child Health Research, Perth

2010 - 2013 Characterisation and treatment of innate immune dysfunction in older people with obstructive airway disease.



Dr Jodie Simpson
University of Newcastle

Harry Windsor Research Grants Scheme

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

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

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

These awards are being offered nationally to support research in:

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

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

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

2008 Recipients

2008 Optimising mucus clearance with exercise in cystic fibrosis.
Assoc Professor Jenny Alison and Assoc Professor Peter Bye et al
University of Sydney

2008 A randomised controlled trial of L-arginine or vitamin D to improve outcomes of pulmonary tuberculosis.
Professor Nicholas Anstey
Menzies School of Health Research, Darwin

2008 Characterisation of airway epithelial cells from young children with cystic fibrosis.
Professor Stephen Stick et al
University of WA

Dr Ingrid Laing

Australian Respiratory Council Ann Woolcock Research Fellow,
Telethon Institute for Child Health Research, Perth

Genetic influences on causal pathways of acute lower respiratory tract infections (ALRIs) in highly susceptible infants.

Acute lower respiratory infections (ALRI) are the leading cause of death in children under 5 years of age, excluding neonatal causes (those occurring in the first 4 weeks of life)[1]. Infants from the highlands of Papua New Guinea (PNG) experience early onset of dense upper respiratory tract bacterial carriage leading to one of the highest rates of childhood ALRI incidence in the world[2], with an average incidence of 4.3 episodes in the first 18 months of life, with approximately one third of those being moderate or severe[3].

The PNG Institute of Medical Research, the Telethon Institute for Child Health Research and the School of Paediatrics and Child Health, University of Western Australia have recently completed a randomised controlled trail of the 7-valent pneumococcal-CRM197 conjugate vaccine (PCV - Prevnar®) in a population of infants from PNG. Vaccination with PCV beginning at birth (Neonatal group - 0, 1 and 2 months) or soon after birth (Infant group - 1, 2 and 3 months) was compared with no PCV (Control group). It should be noted that infants from all three groups received the 23-valent pneumococcal polysaccharide vaccine at nine months of age. The children were followed to 18mths of age to determine the number and severity of each episode of ALRI as well as their development of bacterial carriage and innate and adaptive immunity.

Recruitment of 318 infants was completed in November 2007 and the 18mths of follow-up finished in March 2009. Measurement of antibody levels to each of the seven vaccine antigens at birth, 2, 3 and 4mths of age are almost complete. Assays to determine T cell responses in cord blood and at 3 months have been completed[4] and the results from samples collected at 9mths will be completed in May 2009. In December 2008, 193 children had completed the follow-up, 438 ALRI episodes had been recorded of which 169 were moderate or severe and 9 children had died. Overall, study children had an average of 1.63 episodes of ALRI in their first 18months of life, taking into account the amount of time each child had been followed, with each child having had between 0 and 8 ALRIs. It is thought that the lower incidence of ALRI compared with that previously reported[3] was due to several factors including general improvements in health status over the last 20 years, differences in the intensity of study follow-up and recent use of vaccines against pneumococcus and *Haemophilus influenzae*, the predominant bacteria causing ALRIs. No differences in the total number of ALRIs between vaccination groups were apparent. However, infants in the neonatal or infant vaccination groups were on average older when they had their first moderate or severe ALRI compared with infants who did not receive PCV. Overall the average number of moderate or severe ALRIs was 0.62, with one child having had as many as seven over the 18mth follow-up. The immune and vaccine response components of the study will further elucidate the mechanisms by which PCV may have helped to protect the study children from moderate or severe ALRIs.

In June/July 2008, my ARC Ann Woolcock Research Fellowship funded a visit to Goroka, PNG for the purpose of completing the DNA extractions from children's blood samples collected since my visit in 2006. This again necessitated the transport of a large amount of laboratory reagents from Perth to the PNGIMR in Goroka, but with the help of Mildred Lai (photo), I was able to return home with DNA samples from another 217 study children. While in PNG, I was also able to attend a Colloquium celebrating the 40th Anniversary of the PNG Institute of Medical Research. This allowed me to meet with local and international researchers studying the genetic susceptibility of several other infectious diseases common in PNG, including malaria and lymphatic filariasis. After this visit to PNG, DNA samples from 283 of the 318 study children were available for genotyping.

Genotyping of 36 gene sequence variations known to be involved in the development of innate or adaptive immune responses was completed on the 283 DNA in December 2008. As most children had had at least one ALRI, the first phase of statistical analysis assessed the potential contribution of each genetic variation to the age at which they had their first ALRI. Where some evidence of a relationship between a gene and the age of first ALRI was identified, the total number of ALRI's over the follow-up period was also investigated.

Somewhat surprisingly, 3 genetic variations involved in the adaptive immune response were not identified in the first 66 subjects studied and another 8 genetic variations involved in innate immune responses were not found or were extremely rare in the 283 study children. A previous study in PNG found that another 5 innate immune gene variants were also absent/very rare. Previous investigation of these innate immune gene variations (although mostly completed in populations of European origin) suggested that the people in PNG may have

Ingrid Laing and Mildred Lai in the Immunology laboratory at the PNGIMR, extracting DNA from blood samples collected from study children.

lower innate responses to infections than if the gene variants were present. You might think that having a strong immune response to infections would help to protect PNG children from ALRIs. However, other studies have suggested that innate immune gene variants with a stronger immune response may cause more severe malaria or sepsis and death from bacterial infection. Therefore it is possible that the people of PNG do not have a number of innate immune gene variants in order to protect them from more severe ALRI.

The genotyping results did find 9 innate immune and 19 adaptive immune genetic variants in the study children. The results of the statistical analyses showed that variants in 3 innate immune genes and 5 adaptive immune genes had evidence of association with an earlier age of first ALRI and 3 of those were associated with an increased total number of ALRIs. Vaccination group did not affect these results. This is the first immunogenetic analysis of a prospective study of childhood ALRI completed in a population from a developing country. These results show that particular genetic factors, in addition to environmental and socio-economic factors, contribute to the high incidence of ALRI in Papua New Guinea. Furthermore, almost without exception the polymorphisms that show evidence of contributing to increased ALRI susceptibility are more prevalent in African-American and Sub-Sahara African populations than in either Caucasian and PNG populations. This suggests that these polymorphisms may also contribute to the high rates of ALRI found in populations of African origin. The next phase of the statistical analyses will investigate the contribution of these polymorphisms to measures of innate and adaptive immunity in study children at 3 and 9mths of age. Abstracts summarising the results to date have been submitted to the 2009 European Respiratory Society Congress for presentation in September.

Work will continue on the results obtained from this project. However, as my Australian Respiratory Council Ann Woolcock Research Fellowship finished in February, this will be my last annual report. I would like to say what an honour it was to be the first recipient of this fellowship and what a pleasure it has been to work with members of the ARC staff, Research Committee and Board over the last 4 years, particularly Bruce Ramage, David Macintosh, Judy Begnell and more recently Amanda Christensen.

Invited presentation

It was my pleasure to present the first phase of results from my fellowship project at a Special Meeting of Members of the ARC in Sydney last December. The presentation was entitled *"The contribution of immune gene variations to the age of first pneumonia in children from the highlands of Papua New Guinea"*.

Publications

Two journal articles have been published or accepted for publication (1, 2) and a manuscript has been submitted for publication (3), acknowledging the ARC as a source of support.

1. **Laing IA,** de Klerk NH, Turner SW, Judge PK, Hayden CM, Landau LI, Goldblatt J, Le Souëf PN. Cross-sectional and longitudinal association of the secretoglobin 1A1 gene A38G polymorphism with asthma phenotype in the Perth Infant Asthma Follow-up (PIAF) Cohort. Clin Exp Allergy 2009; 39:62-71. (editorial comment *Clin Exp Allergy* 2009; 39:8-11).
2. Hales B, Martin AC, Pearce LJ, Rueter K, Zhang G, Khoo SK, Hayden CM, Bizzintino J, McMinn P, Geelhoed GC, Goldblatt J, Lee W-M, **Laing IA**, LeSouëf PN, Thomas WR. Anti-bacterial and allergen antibody responses in convalescence from asthma exacerbation. *Clinical and Experimental Allergy* – accepted 24th February 2009.
3. Subrata LS, Bizzintino J, Mamessier E, Bosco A, McKenna KL, Wikström ME, Goldblatt J, Sly PD, Hales BJ, Thomas WR, **Laing IA**, Le Souëf PN, Holt PG. Interactions between innate antiviral and atopic immunoinflammatory pathways precipitate and sustain asthma exacerbations in children – *submitted to The Journal of Immunology.*

Publications on work that preceded support from the ARC include:

1. Martin AC, Zhang G, Rueter K, Khoo S-K, Bizzintino J, Hayden CM, Geelhoed GC, Goldblatt J, **Laing IA**, Le Souëf PN. 2-adrenoceptor polymorphisms predict response to 2-agonists in children with acute asthma *J Asthma* 2008; 45:383-8.
2. Ali M, Zhang G, Thomas WR, McLean CJ, Bizzintino JA, **Laing IA**, Martin AC, Goldblatt J, Le Souëf PN, Hayden CM. Investigations into the role of ST2 in acute asthma in children. *Tissue Antigens* 2009; 73:206-12.

Student supervision

Sing Ching Lee
BMedSci (Feb – Nov 2008)
recipient of the Jean Rogerson Undergraduate Studentship, awarded 1st Class Honours.

Joelene Bizzintino
PhD student (Feb 2007 – present)
recipient of an Australian Postgraduate Award.

Prizes and grants

2008
NH&MRC Equipment Grant; "Applied Biosystems 7900HT Fast Real-Time PCR System with 384-well, 96-well and micro-fluidic array adapter and automation unit for plate loading"; $100,000; Jenefer Blackwell, Ursula Kees, Wayne Thomas, Susan Prescott, Peter Richmond, Prue Hart, Peter Dallas, Sarra Jamieson, David Burgner, Anita van den Biggelaar, Selma Wiertsema and Ingrid Laing.

2009
Thoracic Society of Australia and New Zealand /Japanese Respiratory Society Early Career Development Award

2009
Peter Phelan Paediatric Travel Grant

Invitations to serve on committees

Thoracic Society of Australia and New Zealand WA Branch Executive Committee

October 2008 – present

References

1. Rudan I, Tomaskovic L, Boschi-Pinto C, Campbell H. Global estimate of the incidence of clinical pneumonia among children under five years of age. Bull World Health Organ 2004; 82:895-903.
2. Coakley K, Lehmann D, Smith D. The Asaro valley surveillance unit of the Papua New Guinea Institute for Medical Research: methodology, demography and mortality report. Garoka: Papua New Guinea Institute for Medical Research, 1993.
3. Smith TA, Lehmann D, Coakley C, Spooner V, Alpers MP. Relationships between growth and acute lower-respiratory infections in children aged less than 5 y in a highland population of Papua New Guinea. Am J Clin Nutr 1991; 53:963-70.
4. van den Biggelaar AHJ, Richmond PC, Pomat WS, Phuanukoonnon S, Nadal-Sims MA, Devitt CJ, Siba PM, Lehmann D, Holt PG, Neontatal pneumococcal conjugate vaccine immunization primes T cells for preferential Th2 cytokine expression: A randomised controlled trial in Papua New Guinea. Vaccine 2009; 27:1340-7.

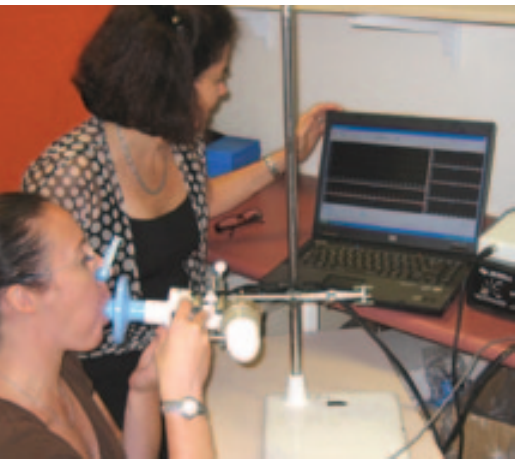
Associate Professor Jennifer Alison, Associate Professor Peter Bye, Professor Craig Mellis, Dr Evangelia Daviskas

University of Sydney

Optimising mucus clearance with exercise in cystic fibrosis

Cystic fibrosis (CF) is a genetically inherited disease affecting 1 in 2500 Australians. Individuals with CF produce large amounts of thick mucus that is not cleared normally from the lungs, resulting in chronic infection and progressive lung damage. As lung damage is the major determinant of prognosis, it is essential to research techniques to prevent retained mucus. With improved management, more people with CF are living to adulthood and participating in societal roles, with 64% of CF adults in paid employment, 40% in a formal or informal marriage relationship and 13% have children[1]. However, the time-demands of adult life conflict with time needed for optimal disease management (up to three hours per day for chest physiotherapy and other treatment regimens). Thus, adults with CF often perform suboptimal treatment, adversely impacting on prognosis.

In order to reduce treatment time and complexity, interventions that have multiple benefits are required. Exercise is potentially one such intervention. Higher levels of exercise capacity in individuals with CF are associated with greater survival[2] and improved quality of life[3]. There is some evidence from studies in diseases such as chronic bronchitis that exercise may also aid mucus clearance[4]. If exercise is effective in aiding mucus clearance in CF, this would reduce treatment time as exercise could be substituted for other mucus clearance interventions such as chest physiotherapy, while reaping the known benefits of exercise on physical fitness, quality of life, reduced breathlessness and improved survival. As yet, there is no definitive evidence that exercise helps to clear mucus from the lungs of people with CF.



This study is examining the mechanisms by which exercise could enhance the clearance of mucus such as changing the physical properties of mucus and enhancing the movement of mucus from the lungs due to the airflow generated during exercise. The study is a cross-over, randomised, controlled, repeated-measures, single-blind, design in which the effects of exercise on mucus rheology and airflow are compared with those of chest physiotherapy using the Flutter device and control.

Preliminary data from a related study[5] from our group in adult subjects with CF has demonstrated that exercise significantly decreases the viscoelasticity of mucus, improves the ease of expectoration of mucus and that respiratory flow rates increase significantly during both treadmill and cycle exercise. These findings are being extended in the current study to examine more specifically the comparative effects of exercise with chest physiotherapy (Flutter device) on respiratory flow rates and mucus rheology. In the current study treadmill exercise is being examined as it equates more closely with regular walking exercise. This project will, for the first time, provide an evidence-based rationale for exercise as a potential major therapy to clear mucus in comparison to chest physiotherapy. Evidence for the value of exercise as a treatment, with the dual advantages of mucus clearance and the broader effects of exercise on quality of life and survival will be gained.

1. Cystic Fibrosis Australia. Cystic Fibrosis in Australia 2003: Annual report from the Australian Cystic Fibrosis Data Registry. Sydney: *Cystic Fibrosis Australia*; 2006.
2. Nixon PA, Orenstein DM, Kelsey SF, et al. The prognostic value of exercise testing in patients with cystic fibrosis. *N Engl J Med* 1992;327(25):1785-8.
3. Orenstein DM, Nixon PA, Ross EA, et al. The quality of well-being in cystic fibrosis. *Chest* 1989;95(2):344-7.
4. Oldenburg FA, Jr., Dolovich MB, Montgomery JM, et al. Effects of postural drainage, exercise, and cough on mucus clearance in chronic bronchitis. *Am Rev Respir Dis* 1979;120(4):739-45.
5. Dwyer T, Alison J, McKeough Z, Daviskas E, Bye P. Exercise aids airway clearance by increasing respiratory flow rates and decreasing mucus viscoelasticity in CF. *Ped Pulmonol* 2008; A513, 386.

Professor Stephen Stick et al

University of WA

Characterisation of airway epithelial cells from young children with cystic fibrosis

The team. Back row: Prof. Stephen Stick, Balarka Banarjee (PhD student), Dr Anthony Kicic

Front row: Dr. Erica Sutanto, Clara Foo (PhD student), Kak Ming-Lee (RA)

Hypotheses:

A. CF AEC contribute to airway inflammation early in life in response to infective and non-infective stimuli

B. The inflammatory responses to viral infection can be modified by simple anti-inflammatory agents

Aims:

1. To determine proinflammatory gene and protein expression in primary cultures of AEC from young patients with CF and healthy controls following infection with human rhinovirus (HRV) and compare results with those obtained following mechanical wounding.
2. To determine the effects of anti-inflammatory medications on proinflammatory gene and protein expression in primary cultures of AEC from patients with CF and healthy controls following infection/injury.

Background

Airway epithelial cells (AECs) provide an effective barrier to prevent microorganisms and pollutants from entering the body. These cells are also capable of modulating their microenvironment by secreting cytokines and a range of mediators in response to different stimuli. In cystic fibrosis (CF) sufferers, airway clearance is dysregulated and there is persistent inflammation and bacterial infection leading to pulmonary infection and lung damage. Viral infection is a potential stimulus for early airway inflammation with human rhinovirus (HRV) one of the most predominate viral pathogens. Thus, this study aimed to investigate what role CF AEC play in initiating and exacerbating inflammation upon RV infection. *In this one year funded study we elected to focus on comparing responses between CF and healthy primary epithelial cells.*

Results

Increased IL-8 and IL-6 production post RV exposures

The results demonstrated that non-stimulated CF AECs produced low basal levels both IL-8 and IL-6. Upon RV1b exposure however, significantly higher levels of IL-8 and IL-6 were produced by the cells compared to healthy cells ($p<0.034$) with the amount of cytokines being produced increased with viral exposure time. Maximal levels of IL-8 and IL-6 were observed at the highest viral particles (RV1b 25, Fig. 1) 48 hours post exposure. Interestingly, there were minimal inflammatory responses observed in both cohorts following RV14 exposure. In addition, there was no significant difference between both cohorts in the production of cytokines following RV14 exposure ($p<0.077$).

Conclusions and discussions:

We have demonstrated the propensity of CF epithelium to respond in an exaggerated way to RV infection with regard to pro-inflammatory cytokine production (data being prepared for publication). Therefore, this supports the hypothesis that RV infection early in life can act as a trigger for a vicious cycle of inflammation that ultimately leads to airway damage. Furthermore, our preliminary data suggest that this response is particularly enhanced in cells from patients homozygous for type II CFTR mutations. This raise the prospect that correction of CFTR function could ameliorate the response to virus infection and thus be a candidate for therapy. In a collaboration with a Pharmaceutical company (Biofocus) and the CF Foundation Therapeutics Inc. we are now testing a number of target compounds some of which restore CFTR function in our primary cells from CF patients measured using a halide reporter assay. The next step is to determine whether restoration of CFTR function using these protein targets reduces the pro-inflammatory cytokine responses to RV infection.

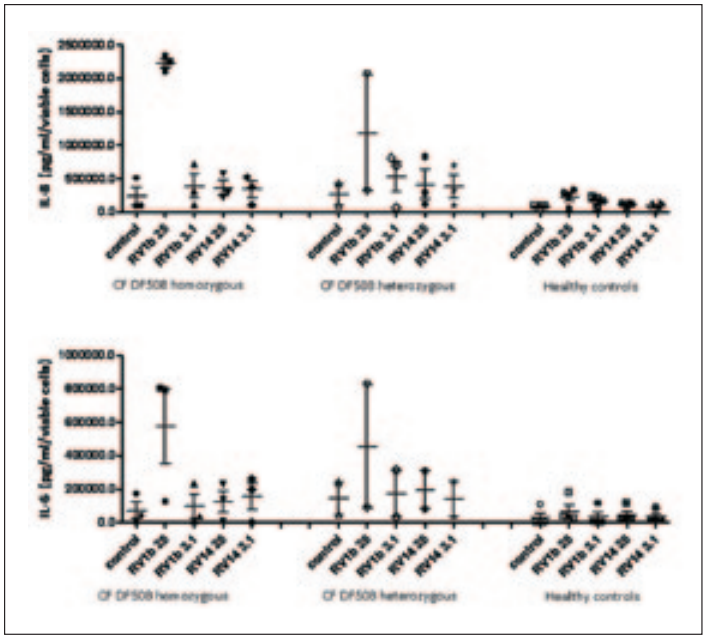


Figure 1: IL-8 and IL-6 productions in CF and healthy AECs 48 hours post exposure to different serotype and concentration of human rhinovirus.

Professor Nicholas Anstey

Menzies School of Health Research, Darwin

A randomised controlled trial of L-arginine or vitamin D to improve outcomes in pulmonary tuberculosis

Figure 1: Study participant taking his TB medications ('directly observed therapy') at the study site (Timika TB clinic)

We are conducting field tuberculosis (TB) research in Indonesia with the goal of achieving better TB treatment outcomes through simple and cost-effective interventions. Seed funding received from the Australian Respiratory Council enabled the commencement of a large randomised controlled trial of adjunctive therapy in pulmonary TB tuberculosis (TB) in June 2008. The study is being conducted at the TB Clinic in Timika, Papua, Indonesia as part of the health research collaboration between Darwin's Menzies School of Health Research and the Indonesian Ministry of Health. In the first 8 months of the study (to February 2009), 100 smear positive pulmonary TB patients were enrolled (22% of our target enrolments).

Arginine-nitric oxide (NO) and Vitamin D-cathelicidin comprise two major pathways which mediate mycobacterial killing in human macrophages. To date, there have been no well-designed, adequately powered randomised controlled trials (RCT) of vitamin D or L-arginine in TB. Further, the relationship between exhaled NO, TB disease severity and L-arginine requires elucidation. Our study will be well powered to address these research questions.

Methods Summary

Adults are eligible for enrolment in the study if they provide written informed consent, have new smear positive pulmonary TB, are not pregnant, do not have hypercalcaemia, and agree to remain in Timika for treatment for the full 6 months.

Figure 2: Study design (2x2 factorial RCT):

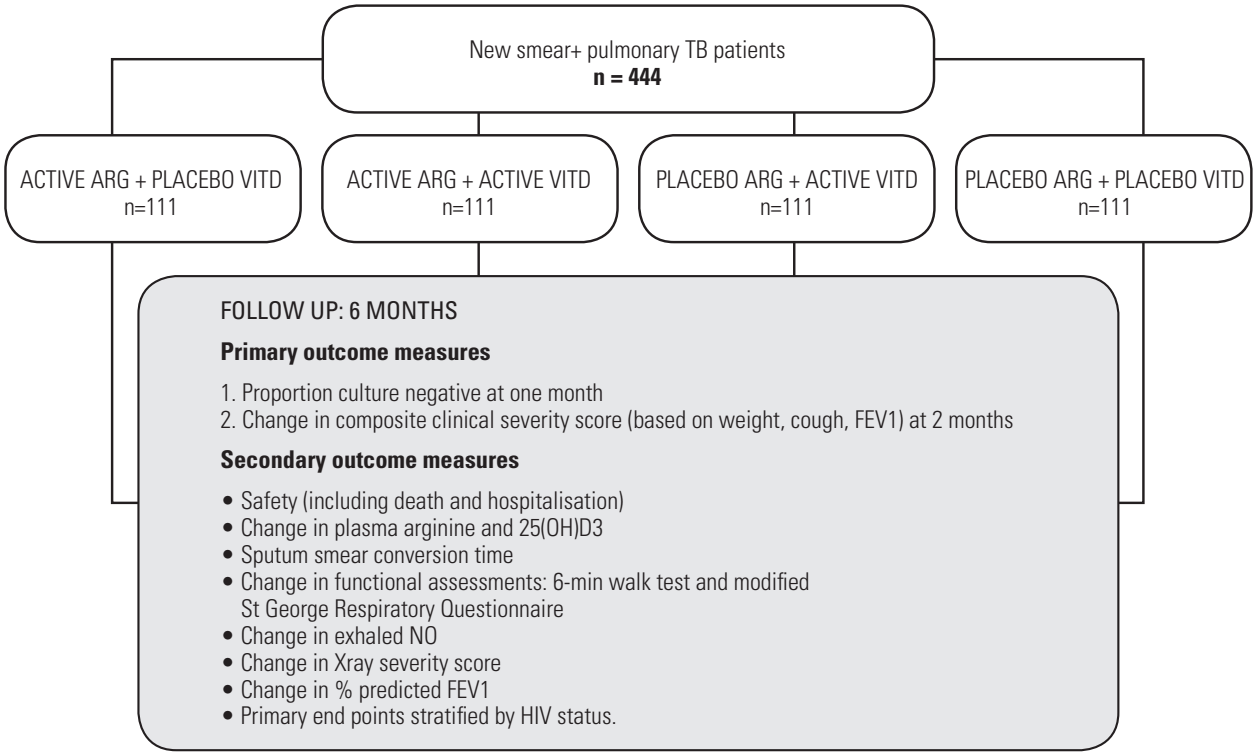
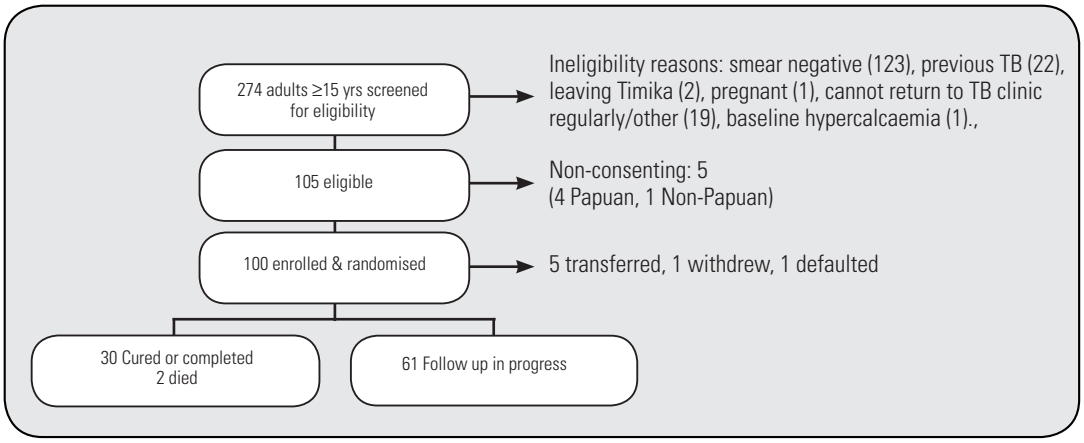


Figure 3a: Measuring exhaled nitric oxide (eNO) using portable Niox Mino®. Subject inhales through the NO scrubber, then exhales at a set flow rate to determine eNO.

Figure 4b: Pulmonary function testing using portable spirometer using Microloop®. Research assistants are given training in optimal test performance.

Figure 5: Research personnel at the Timika TB clinic, under the World TB Day slogan 'I can stop TB' (*Saya akan STOP TB*)

Figure 6: Eligibility screening, enrolments, follow-up to February 2009



Preliminary Results

We have successfully enrolled and randomised 100 patients with pulmonary TB between June 2008 and February 25 2009 (Figure 6).

Safety

Hypercalcaemia: Of the first 70 patients followed up for ≥1 month, 13 (18.6%) had asymptomatic, transient hypercalcaemia, (11 mild, 2 moderate). None have required treatment. This is no greater than the likelihood of hypercalcaemia in TB patients who have not received vitamin D in other studies.[1-4]

Serious adverse events (SAE): We have recorded 4 SAE (2 death [HIV-TB co-infection], 2 hospitalisations [1 HIV-TB co-infection]). In each instance the Data Safety Monitoring Committee noted the association between the SAE and the study medications to be unlikely, and provided a timely report to the relevant institutional ethics committees. It is too early to provide an accurate mortality rate estimate, and comparisons need to account for changing HIV-TB co-infection prevalence, but it appears to be low and consistent thus far with our previous longitudinal observational studies of TB patients at the same site in 2003/04 (2.6%) (unpublished data).

Feasibility: staffing and infrastructure at our field site is excellent for project requirements. All aspects of the protocol including the volume/frequency of blood tests, adherence to extra medications and the follow up schedule have been adhered to without difficulty by almost all study subjects to date.

Figure 7: Laboratory staff provide training in cellular studies to local research colleagues

Primary end point

Over 200 sputum specimens have been submitted for culture to UI's Microbiology laboratory, and a final culture report issued for over 150. The proportions remaining culture positive at 1 (63%) and 2 (32.5%) months are high, as predicted, making the study well-powered to demonstrate any improvements from the interventions.

Drug resistance has been detected in 7% of baseline cultures for whom susceptibility results are available (5% monoresistance, 1% isoniazid and streptomycin and 1% MDR).

HIV results and treatment

In total, 25.8% of Papuans and 9.4% of Non-Papuans with TB tested for HIV have been found to be HIV positive (overall 17.5%), contrasting with our previously reported HIV-TB co-infection rates in Timika of 5% in 2004.PK16 We ensure that study participants diagnosed with HIV receive appropriate care according to local treatment guidelines. All patients are offered post-test counselling, engagement with the clinic support groups, commencement of co-trimoxazole, and referral for antiretroviral (ARV) commencement. This is started ~8 weeks after TB treatment initiation (WHO guidelines recommend ARV commencement after 8 weeks if CD4 200-350).[5]

Table: Proposed timeline for the continuation of the project

Jan 2010 - Jun 2011	Ongoing recruitment and follow up of patients in Timika. TB culture continues; arginine, vitamin D and other assays.
July – Dec 2011	Patient follow-up and laboratory work continues.
July 2011- Jun 2012	Completion of laboratory work in Darwin and data analysis
Jun 2012-Dec 2012	Data analysis; Dissemination of results: Timika workshop, report to Ministry of Health and publications.

Outcomes and significance

TB is a disease of the highest global public health significance. Even relatively small individual gains would translate into major public health gains in a disease with such high prevalence globally.

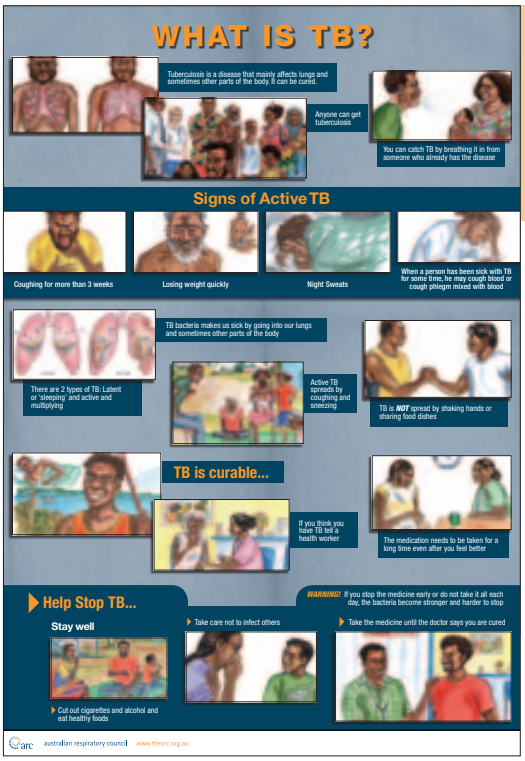
Our trial has the potential to demonstrate significant clinical and public health benefits. If L-arginine increases exhaled NO and is associated with improved outcomes, this will also provide mechanistic evidence for the effect, and also a readily measurable pulmonary immunological correlate of treatment outcome, useful in future clinical studies in TB. As well as examining the effects of supplementation, demonstration of an inverse relationship between baseline pulmonary NO production/L-arginine and disease severity will provide further supportive data for a disease protective effect of L-arginine and NO in TB.

Due to our close links with national policy makers in Indonesia, we are confident that as with our Timika studies to date, the study findings can be translated into policy and practice. Our study will be eligible for inclusion by the Cochrane Infectious Diseases Collaborative Review Group, and will have implications for Australian, Indonesian and global TB treatment policy.

References

1. Fuss M, Karmali R, Pepersack T, et al. Are tuberculous patients at a great risk from hypercalcemia? Q J Med 1988;69(259):869-78.
2. Liam CK, Lim KH, Srinivas P, Poi PJ. Hypercalcaemia in patients with newly diagnosed tuberculosis in Malaysia. Int J Tuberc Lung Dis 1998;2(10):818-23.
3. Nursyam EW, Amin Z, Rumende CM. The effect of vitamin D as supplementary treatment in patients with moderately advanced pulmonary tuberculous lesion. Acta Med Indones 2006;38(1):3-5.
4. Roussos A, Lagogianni I, Gonis A, et al. Hypercalcaemia in Greek patients with tuberculosis before the initiation of anti-tuberculosis treatment. Respir Med 2001;95(3):187-90.
5. World Health Organisation. Antiretroviral therapy for HIV infection in adults and adolescents: Recommendations for a public health approach. WHO, Geneva, 2006.
6. World Health Organization. Anti-tuberculosis Drug Resistance in the World Fourth Global Report. The WHO/IUATLD Global Project on Anti-tuberculosis Drug Resistance Surveillance, 2002-2007: WHO/HTM/TB/2008.394, 2008.

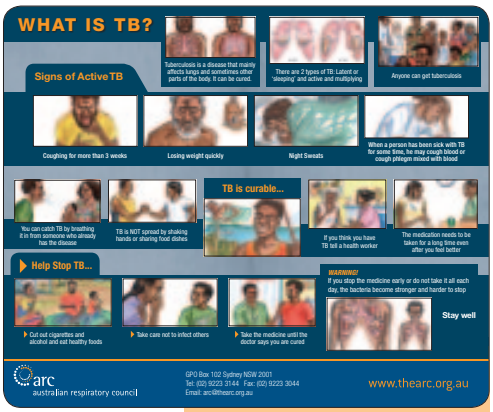
Resources



What is TB? Poster
The poster can be used in clinics, schools, community halls or any public place for community education. The pictures convey important messages about TB prevention and control.

Available in: english, i-kiribati, tetum

What is TB? Flipchart and Pamphlet
What is TB? is a flipchart and pamphlet that have been developed for use by health workers as an educational tool when working with patients and their families or the community



What is TB? Mouse pad

Drama Training DVD
Provides health promotion messages through dance, storytelling and drama

No Charge No Undressing
Is a publication about the story of TB treatment in the 20th century in Australia and, more particularly, in NSW by an organisation established by concerned citizens

TB Resource Kit
The Kit is a comprehensive package that combines a training manual, facilitators guide, technical DVD and materials for professional and community education

Board of Directors

AMANDA CHRISTENSEN

Dip Nursing

NSW TB Program Manager 1997-; various positions in public health for eighteen years including tuberculosis control for thirteen years. Appointed to the Board in 2001. Worked as the ARC Executive Director from April 2008 to current time.

CLINICAL ASSOCIATE PROFESSOR PETER GIANOUTSOS

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

Senior Consultant Thoracic Physician (VMO) Dept of Thoracic Medicine RPAH 1971-; Member TSANZ, ATS, ACCP, BTS, ALF, MLS(NSW); Chairman RPA Medical Board 1989-1991; Member of Medical Board of NSW 1978-1982; Chairman UMPS Medical Experts Panel 2002 –2007. Member of Board of Directors UMP 2000-2002. Appointed to the Board in 2006. Vice President 2008.

ROBERT HORSELL

CPA

Partner, R E Horsell & Co Public Accountants 1978-; Director, Cricket Australia 1997-2004, 2005- 2008; Chairman, Cricket NSW 1997-2008; Director, Bradman Foundation 1999-2005. Appointed to the Board in 1999; Chair of Finance Committee.

PROFESSOR MICHAEL LEVY

MBBS, MPH, FAFPHM

Director, Corrections Health Program, ACT Health, Canberra. Conjoint appointments with the Australian National University, University of Sydney and Monash University; Medical Officer Global Tuberculosis Program, World Health Organization Geneva 1995-1997; Convenor of the First National Tuberculosis Conference (Public Health Association of Australia),1994. Short-term Consultant for Tuberculosis Control in Kiribati, Burma, Papua New Guinea, China and the Philippines. Appointed to the Board in 1998; Vice President 2001-2008.

CLINICAL PROFESSOR IVEN YOUNG

BSc (Med), MBBS, PhD FRACP

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

DAVID MACINTOSH

BBS (UTS), FCA

Chairman, Payce Consolidated Limited 1992-; Director, Payce Consolidated 1990-; Managing Director, Paynter Dixon Construction Group 2001-; Director of numerous private companies; twenty eight years of senior management and director level in the transport and construction industries in Australia and Europe; Member of Board of Governors and Chairman of the Finance Committee, Woolcock Institute of Medical Research; Member of the President's Council, The Children's Hospital at Westmead; Director, The Australian Lung Foundation; Chairman, The Macintosh Foundation, Macintosh Chair of Paediatric Respiratory Medicine - Endowed Chair 29 November 2005 in perpetuity; actively involved in the Surf Life Saving movement for over thirty nine years; Life Member and Vice-President, Long Reef Surf Life Saving Club Inc.; Distinguished Service Member and Chairman of the Expenditure Review Committee, Collaroy Surf Life Saving Club Inc. Appointed to the Board in 1997; President.

IAN W. RAMSAY

LL.B

Solicitor, Supreme Court of NSW; member, Law Society of NSW; member, Australian Institute of Company Directors; General Manager and Board Director, WorkCover NSW (1988-1997); Chairman, Dust Disease Board of NSW (1988-1997); Member, National Occupational Health and Safety Commission (1988-1997); Chairman, Sporting Injuries Committee (1988-1997); Member, Joint Coal Board Health and Safety Trust (1993-1997). Appointed to the Board in 2008.

PROFESSOR J PAUL SEALE

MBBS, PhD, FRACP

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

Projects Advisory Group

Dr Colin Butler
Research Fellow in Epidemiology, National Centre for Epidemiology and Population Health, Canberra

Dr Vicki Krause
Director, Centre for Disease Control, Northern Territory Heath Services

Professor Michael Levy (Chair)
Director, Corrections Health Program, ACT Health

David Macintosh
ARC President (ex officio)

Dr Graeme Maguire
Specialist Physician, Cairns Hospital, Dept of Medicine, Qld Health; Associate Professor of Medicine, James Cook University School of Medicine.

Sheila Simpson RN
TB Nurse, Liverpool Health Service

Professor Richard Taylor
Professor of International Health, School of Population Health (SPH), Faculty of Health Sciences, University of Queensland;Director, Australian Centre for International, Tropical Health (ACITH).

Dr Justin Waring
Consultant Physician, Respiratory and Tuberculosis Medicine, Perth Chest Clinic and Royal Perth Hospital

Roger Williams
Chief Operating Officer
NSW Aboriginal Health & Medical Research Council

Research Committee

Professor Carol Armour
Professor of Pharmacy, University of Sydney; Pro Vice Chancellor for Research, Sydney University; Member of National Asthma Expert Advisory Committee.

Professor Peter Gibson
Staff Specialist, Respiratory Medicine Unit John Hunter Hospital

Professor Michael Levy
Director, Corrections Health Program, ACT Health. Chair ARC Projects Advisory Group

David Macintosh
ARC President (ex officio)

Clinical Professor Iven Young (chair)
Head, Department of Respiratory and Sleep Medicine, Royal Prince Alfred Hospital

Professor Judith Black
Professor Pharmacology, School of Medical Services, University of Sydney

arc
australian respiratory council
prevention and cure of respiratory illness

After Robert Koch identified the bacterial origins of tuberculosis (TB) in 1882, concerned citizens in many countries formed associations to deal with the scourge of "consumption" as it was popularly known.

Milestones

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

1912
Australia's first anti-TB dispensary opens in Sydney

1947
Subscriptions from rural areas fund acquisition of the first mobile x-ray unit

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

1957
Our service expands offshore with a TB survey in Nauru

1982
Mobile vans are handed over to NSW Health

1986
The first grants are made for respiratory medicine research and overseas TB control programs

2002
Laboratory skills training programs begin in Pacific Region

2006
Our name changes from Community Health and Tuberculosis Australia to Australian Respiratory Council, reflecting our wider focus on lung health

2008
Development of a TB resource kit for professional and community education and two Indigenous tobacco control projects funded

2009
With your support our work continues

Vision:
A global community free of respiratory disease

Mission:
The Australian Respiratory Council is an Australian Non Government Organisation that:

- Fosters innovative research to promote respiratory health
- Improves lung health in communities with an emphasis on disadvantaged groups
- Respects relationships with and contributions of stakeholders and staff
- Delivers sustainable solutions through partnerships

arc
australian respiratory council
prevention and cure of respiratory illness

Activities

Research Grants

Since 1990, ARC has provided 2.7 million dollars to support research in TB and respiratory diseases due to other infections or respiratory diseases related to tobacco use

Fellowships

ARC offers a 4 year Fellowship to provide training in biomedical, clinical or public health research relevant to TB, respiratory diseases due to other infections, or respiratory diseases related to tobacco use

Laboratory Technician Training

Conducted laboratory technician training in Cook Islands, Kiribati, Samoa and Tonga to build capacity in the detection of TB

Nurse Training

Building capacity within the Pacific TB Programs by providing training for nurses and related workers in TB prevention strategies and control

Tobacco Control Projects

In 2007, $700,000 was committed to fund the implementation of two innovative Indigenous tobacco control projects in NSW and WA

Resources

Development and production of community health promotional posters, flipcharts, pamphlets and videos in English and other languages is an ongoing dynamic process. These are currently being used in the Pacific Islands and East Timor

TB Training Modules have been completed as a holistic approach for nurse training in the Pacific and Asian Regions

Community Education

A communication and drama training workshop for TB Community DOTS Workers in Kiribati was held in 2008. The resultant video addressing stigma and compliance in young people is an important tool in Kiribati's school health education program

Future Projects

Exciting projects planned for 2009 include; continuation of nurse training in Pacific Region, piloting the TB Resource kit in the Federated States of Micronesia and working with the Cambodian Anti TB Association on a project to reach vulnerable groups at high risk of TB

arc
australian respiratory council
prevention and cure of respiratory illness

giving a breath of hope is simple

About ARC

A long and proud history in public health
Since 1912, ARC and its predecessors have been contributing to respiratory health in Australia and neighbouring countries. Today, as a self-funding, not-for-profit organisation, ARC operates an extensive research program and undertakes project work in Australia and overseas.

While our name has changed over the years, our commitment to improving respiratory health at both national and international levels remains constant.

The ARC Mission
To develop and support innovative and effective approaches to research and development in lung health, and in particular, Tuberculosis (TB) Control and to improve lung health in communities, with an emphasis on disadvantaged groups.

The ARC Vision
- To continue to build expertise in respiratory health
- To foster innovation in respiratory health research
- To deliver and measure positive impacts on communities and research
- To enhance ARC's role in the country as a unique, non-government organisation in the area of lung health
- To advocate to improve respiratory health, particularly in relation to TB and smoking at State, National and International levels.

Project Work

ARC offers financial support and technical advice to Australian and international projects, with a focus on capacity building and health promotion activities aimed at reducing the rates of TB and other respiratory diseases, including those related to tobacco use. Examples are:

- Training for nurses in the Northern Pacific in the use of a case management framework for TB control
- Provision of technical support to develop laboratory capacity across the Pacific Region
- Implementation of a Community Theatre project in Kiribati
- Development of TB health promotion resources and training materials for use within the Pacific Island Countries and Territories
- Training in community education and mobilisation strategies

In response to the ongoing high incidence of smoking in Aboriginal communities and its associated morbidity, $700,000 worth of project funding has been allocated to two tobacco cessation programs.

The first of these is The Aboriginal Health & Medical Research Council of New South Wales Tobacco Control Project, an innovative two-year project that trials new approaches to a smoking cessation and tobacco control program. The project will contribute to a reduction of tobacco-related respiratory illness in Aboriginal communities, as well as to the evidence base that informs tobacco control policy and practice for Aboriginal communities.

ARC is also providing funding to the Aboriginal Health Council of Western Australia, enabling them to implement a range of strategies to impact positively on smoking behaviour among staff and user populations of Aboriginal Community Controlled Health Services.

Research Grants and Fellowships

ARC funds respiratory health research
Each year, ARC funds research that is relevant to TB, respiratory diseases due to other infections, and respiratory diseases related to tobacco use. Support is provided through the Harry Windsor Research Grants Scheme.

Since the 1990s, ARC has provided in excess of $2.5 million in research funding to address a range of issues, including:

- New strategies for TB vaccination
- Rehabilitation for people with Chronic Obstructive Pulmonary Disease (COPD)
- Infant lower-respiratory tract infections
- Aboriginal child public health.

ARC also awards the Ann Woolcock Fellowship which is offered for four years in order to provide full-time training in biomedical, clinical or public health research. It is valued at up to $400,000 over a four year period.

ARC continues to support Australian scientists in their efforts to find innovative ways to prevent and treat serious respiratory diseases.

Working With ARC

ARC continues to undertake projects and build partnerships with agencies providing respiratory health and TB Prevention and Control Services.

Please contact ARC to discuss potential projects and partnerships.

help arc

Membership
You can become a member of ARC and help make a difference in respiratory health. As a member, you will receive an information package and regular newsletters on ARC's activities. Check the ARC website for more details.

contact arc

Australian Respiratory Council
GPO Box 102
Sydney NSW 2001
Australia

Level 4, 16 O'Connell Street
Sydney NSW 2000

Tel: (61) 2 9223 3144
Fax: (61) 2 9223 3044
www.thearc.org.au
arc@thearc.org.au

ARC is the Australian Constituent Member of the International Union against Tuberculosis and Lung Disease

www.thearc.org.au

2008 Financials

Directors' Report

For the year ended 31 December 2008

The Directors present their report together with the financial report of the Australian Respiratory Council for the year ended 31 December 2008 and the Auditor's report thereon.

Directors

The Directors at any time during or since the end of the financial period are:
Amanda Julie Christensen
Peter Gianoutsos
Robert Eric Horsell
Michael Herbert Levy
David Hugh Macintosh
Ian William Ramsay
John Paul Seale
Iven Hunter Young

Company particulars

The Australian Respiratory Council, incorporated and domiciled in Australia, is a public company limited by guarantee.

Company Secretary

Judy Begnell was appointed to the position of Company Secretary in 2008.

Principal Activity

The principal activity of the Company during the financial period was the provision of funds for the prevention and cure of respiratory illness. There was no significant change in the nature of this activity during the financial period.

Review and Results of Operations

The Company continued to engage in its principal activity during the financial period. The Loss of the Company for the year ended 31 December 2008 was $921,065 (18 months to 31 December 2007 loss: $176,860).

Dividends

No dividends have been paid or declared since the end of the previous year, and no dividends were previously recommended as the Constitution of the Company prohibits their payment.

State of Affairs

No other significant changes in the state of affairs of the Company occurred during the financial period.

No significant change in the nature of these activities occurred during the year.

Events Subsequent to Balance Date

There has not arisen in the interval between the end of the financial period and the date of this report any item, transaction or event of a material and unusual nature likely, in the opinion of the Directors of the Company to significantly affect the operations of the Company, the results of those operations, or the state of affairs of the Company in future financial years.

Likely Developments

The Company will continue to pursue its principal activities at a surplus. It is not expected that the results in future years will be adversely affected by the continuation of these operations.

Further disclosure of information regarding likely developments in the operations of the Company in future financial years and the expected results of those operations is likely to result in unreasonable prejudice to the Company. Accordingly, this information has not been disclosed in this report.

Environmental Regulations

The Company's operations are not subject to any significant environmental regulations under Australian Law.

Insurance of Officers

During the financial period, the Company has paid premiums in respect of Directors' and Officers' liability insurance contracts for the 12-month period ended 31 December 2008, and since the financial period, the Company has paid or agreed to pay on behalf of the Company, premiums in respect of such insurance contracts for the 12-month period ended 31 December 2009. Such insurance contracts insure against certain liability (subject to specific exclusions) persons who are or have been Directors or Executive Officers of the Company.

The Directors have not included details of the nature of liabilities covered or the amount of the premium paid in respect of the Directors' and Officers' liability insurance contracts, as such disclosure is prohibited under the terms of the contracts.

Particulars of Directors

Amanda Christensen Dip Nursing.
Appointed to the Board on 22 February 2001
Interest in contracts: Nil

Clinical Associate Professor Peter Gianoutsos MB CHB FRACP FACCP.
Appointed to the Board on 15 May 2006. Vice President.
Interest in contracts: Nil

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

Professor Michael Levy MBBS MPH FAFPHM.
Appointed to the Board on 21 May 1998. Vice President.
Interest in contracts: Nil

David Macintosh BBS, FCA.
Appointed to the Board on 19 June 1997. President.
Interest in contracts: Nil

Ian Ramsay LLB
Appointed to be the Board on 27 November 2008
Interest in contracts: Nil

Professor J Paul Seale MBBS PhD FRACP.
Appointed to the Board on 19 June 1997. Vice President.
Interest in contracts: Nil

Clinical Associate Professor Iven Young BSc(Med), MBBS, PhD, FRACP.
Appointed to the Board on 6 August 1998.
Interest in contracts: Nil

Directors' Meetings

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
Amanda Christensen	5	5
Peter Gianoutsos	5	3
Robert Horsell	5	5
Michael Levy	5	3
David Macintosh	5	5
Ian Ramsay	1	1
John Paul Seale	5	5
Iven Young	5	3

Directors' Declaration

The Directors of the Company declare that:

1. The financial statements and notes are in accordance with the Corporations Act 2001:
   (i) comply with Accounting Standards and the Corporations Regulations 2001; and
   (ii) give a true and fair view of the financial position as at 31 December 2008 and performance for the year ended on that date of the Company;
2. In the Directors' opinion there are reasonable grounds to believe that the Company will be able to pay its debts as and when they become due and payable.

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

David Macintosh
Director

Sydney, 6 April 2009

Income Statement

For the year ended 31 December 2008

	Note	2008 $	18-Month period 2007 $
Revenue	2	149,662	1,051,859
Depreciation, amortisation and impairments	3	(4,849)	(12,827)
Research grants, fellowships and scholarships		(214,750)	(199,325)
Investment expenses		(37,870)	(39,425)
Consultancy fees		(26,515)	(73,636)
Employee costs		(298,390)	(330,641)
Other expenses		(488,353)	(572,865)
Loss before income tax		**(921,065)**	**(176,860)**
Income tax expense relating to Ordinary activities	1	-	-
Loss attributable to members	**15**	**(921,065)**	**(176,860)**

The accompanying notes form part of these financial statements

Balance Sheet

As at 31 December 2008

	Note	2008 $	2007 $
ASSETS			
Current Asset			
Cash and cash equivalents	5	349,892	325,620
Trade and other receivables	6	77,759	9,360
Other current assets	7	16,105	4,667
Total Current Assets		443,756	339,647
Non-Current Assets			
Financial assets	8	3,458,787	6,217,752
Property, plant and equipment	9	80,176	62,500
Investment property	10	1,650,000	1,650,000
Total Non-Current Assets		5,188,963	7,930,252
TOTAL ASSETS		**5,632,719**	**8,269,899**
LIABILITIES			
Current Liabilities			
Trade and other payables	11	100,560	51,461
Short term provisions	12	15,019	13,486
Total Current Liabilities		115,579	64,947
TOTAL LIABILITIES		115,579	64,947
NET ASSETS		**5,517,140**	**8,204,952**
EQUITY			
Reserves	13	714,242	3,316,735
Retained earnings	15	4,802,898	4,888,217
TOTAL EQUITY		**5,517,140**	**8,204,952**

Statement of Changes in Equity

For the year ended 31 December 2008

	Capital profits Reserves $	Asset Revaluation Reserves $	Retained Earnings/ accumulated losses) $	Total $
Balance at 1 January 2007	2,411,980	1,177,620	5,065,077	8,654,677
Profit/(Loss) attributable to members	-	-	(176,860)	(176,860)
Revaluation decrement	-	(272,865)	-	(272,865)
Balance at 31 December 2007	**2,411,980**	**904,755**	**4,888,217**	**8,204,952**
Profit/(Loss) attributable to members	-	-	(921,065)	(921,065)
Revaluation decrement	-	(2,109,680)	-	(2,109,680)
Transfers to and from reserves	-	(492,813)	835,746	342,933
Balance at 31 December 2008	**2,411,980**	**(1,697,738)**	**4,802,898**	**5,517,140**

Cash Flow Statement

For the year ended 31 December 2008

	Note	2008 $	18-Month period 2007 $
Cash Flows From Operating Activities			
Receipts from customers		210,184	258,392
Payments to suppliers and employees		(1,119,689)	(1,276,963)
Interest received		27,303	35,553
Distributions received		339,889	691,496
Refund of franking credits		-	57,057
Net cash provided by (used in) operating activities	18	(542,313)	(234,465)
Cash Flows From Investing Activities			
Proceeds from sale of property, plant and equipment and investments		1,782,813	2,412,967
Acquisition of property, plant and equipment		(24,407)	(63,885)
Payment for investments		(1,191,821)	(2,532,919)
Net cash provided by (used in) investing activities		566,585	(183,837)
Net Increase/(Decrease) in Cash Held		24,272	(418,302)
Cash at beginning of financial year		325,620	743,922
Cash at end of financial year	18	349,892	325,620

The accompanying notes form part of these financial statements

Notes to and forming part of the accounts

For the year ended 31 December 2008

1. Statement of Significant Accounting Policies

Basis of Preparation

The financial report is a general purpose financial report that has been prepared in accordance with Australian Accounting Standards, Australian Accounting Interpretations, other authoritative pronouncements of the Australian Accounting Standards Board and the Corporations Act 2001.

Australian Accounting Standards set out accounting policies that the AASB has concluded would result in a financial report containing relevant and reliable information about transactions, events and conditions to which they apply. Compliance with Australian Accounting Standards ensures that the financial statements and notes also comply with International Financial Reporting Standards. Material accounting policies adopted in the preparation of this financial report are presented below. They have been consistently applied unless otherwise stated.

Australian Respiratory Council is a Company limited by guarantee, incorporated and domiciled in Australia.

The financial report has been prepared on an accruals basis and is based on historical costs, modified, where applicable, by the measurement at fair value of selected non-current assets, financial assets and financial liabilities.

The following is a summary of the material accounting policies adopted by the Company in the preparation of the financial report. The accounting policies have been consistently applied, unless otherwise stated.

Revenue

Revenues are recognised at fair value of the consideration received net of the amount of goods and services tax (GST) payable to the taxation authority. Exchanges of goods or services of the same nature and value without any cash consideration are not recognised as revenues.

Interest revenue is recognised on a proportional basis taking into account the interest rates applicable to the financial assets.

Revenue from investment properties is recognised on an accruals basis in accordance with lease agreements.

Dividend revenue is recognised net of any franking credits. Revenue from dividends is recognised when received.

Income from other sources is recognised when the fee in respect of other products or services provided is receivable.

Income Tax

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

Property, Plant and Equipment

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

Plant and Equipment

Plant and equipment are measured on the cost basis less, where applicable, depreciation and impairment losses. The carrying amount of plant and equipment is reviewed annually by the Company to ensure it is not in excess of the recoverable amount from these assets. The recoverable amount is assessed on the basis of the expected net cash flows that will be received from the assets employment and subsequent disposal. The expected net cash flows have been discounted to their present values in determining recoverable amounts.

Depreciation

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

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

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

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at each balance sheet date.

An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount.

Gains and losses on disposals are determined by comparing proceeds with the carrying amount. These gains and losses are included in the income statement. When revalued assets are sold, amounts included in the revaluation reserve relating to that asset are transferred to retained earnings.

Impairment of Assets

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

Employee Benefits

Provision is made for the Company's liability for employee benefits arising from services rendered by employees to balance date. Employee benefits expected to be settled within one year together with benefits arising from wages and

salaries, annual leave and sick leave which will be settled after one year, have been measured at the amounts expected to be paid when the liability is settled plus related on-costs. Other employee benefits payable later than one year have been measured at the present value of the estimated future cash outflows to be made for those benefits.

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

Goods and Services Tax (GST)

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

Cash and Cash Equivalents

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

Comparative Figures

The financial report is for the year ended 31 December 2008. The comparative is for the 18 months ended 31 December 2007. Where required by Accounting Standards comparative figures have been adjusted to conform with changes in presentation for the current financial year.

Financial Instruments

Recognition and initial measurement

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

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

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

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

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

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

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

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

Critical Accounting Estimates and Judgments

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

Key Estimates - Impairment

The Company assesses impairment at each reporting date by evaluating conditions specific to the Company that may lead to impairment of assets. Where an impairment trigger exists, the recoverable amount of the assets is determined. Value in use calculations performed in assessing recoverable amounts incorporated a number of key estimates.

Key Judgments - Provision for Impairment of Receivables

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

Notes to the Financial Statements

For the year ended 31 December 2008

	2008 $	18-Month period 2007 $
2. Revenue		
Operating Activities		
Net profit/(loss) on sale of investments	(403,108)	65,544
Rental revenue for property investment	40,857	38,290
Interest received	27,303	35,553
Fund distributions from investments	339,889	691,496
Legacies & donations	-	2,100
Member subscriptions	1,364	4,136
Refund of franking credits	27,345	57,057
Appeals	73,249	136,257
Sundry income received	42,763	21,426
Total Revenue	**149,662**	**1,051,859**
3. Profit From Ordinary Activities		
Expenses		
Depreciation of Non-Current Assets:		
Plant and equipment	4,849	12,826
4. Auditor's Remuneration		
Remuneration of the Auditor of the Company for:		
- Auditing the Financial Report	9,500	11,000
- Other services	-	4,000
Total	**9,500**	**15,000**
5. Cash and Cash Equivalents		
Cash on hand	818	870
Cash at bank	349,074	324,750
Total	**349,892**	**325,620**
6. Trade and Other Receivables		
Trade debtors	13,260	9,360
Other debtors	64,499	-
Total	**77,759**	**9,360**

	2008 $	18-Month period 2007 $

7. Other Current Assets

Prepayments	16,105	4,667

8. Financial Assets

Non Current		
Listed shares - at fair value	1,670,083	3,331,651
Managed funds - at fair value	1,788,704	2,886,101
Total financial assets	**3,458,787**	**6,217,752**

9. Property, Plant & Equipment

Non Current		
Plant & equipment at cost	143,770	143,640
Less: accumulated depreciation and impairment	(63,594)	(81,140)
Total property, plant and equipment	**80,176**	**62,500**

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	62,500	62,500
Additions	24,407	24,407
Disposals	(1,882)	(1,882)
Depreciation expense	(4,849)	(4,849)
Carrying amount at the end of year	**80,176**	**80,176**

10. Investment Property

Non Current		
Investment property - at fair value	1,650,000	1,650,000
Total	**1,650,000**	**1,650,000**

11 Trade and Other Payables

Unsecured liabilities		
Trade payables	74,689	14,896
Sundry payables and accrued expenses	25,871	36,565
Total	**100,560**	**51,461**

	2008 $	18-Month period 2007 $
12. Provisions		
Provision for annual leave	15,019	13,486
Number of employees		
Number of employees at year end	3	3
13. Reserves		
Capital profits reserve	2,411,980	2,411,980
Asset revaluation reserve	(1,697,738)	904,755
Total	**714,242**	**3,316,735**
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	904,755	1,177,620
Revaluation increment(decrement)	(2,109,680)	(272,864)
Transfers	(492,813)	-
Balance at end of year	**(1,697,738)**	**904,755**

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 2008 the number of members was 52 (2007:60).

15. Retained Earnings

Accumulated profit/(loss) at the beginning of the financial year	4,888,217	5,065,077
Net profit attributable to members of the company	(921,065)	(176,860)
Transfers to and from reserves	835,746	-
Accumulated profit at the end of the financial year	4,802,898	4,888,217

16. Financial Instruments

(a) Interest Rate Risk

The Company's exposure to interest rate risk, which is the risk that a financial instruments value will fluctuate as a result of changes in market interest rates and the effective weighted average interest rates on classes of financial assets and financial liabilities, is as follows:

	Weighted average effective interest rate		Floating interest rate		Non interest bearing		Total	
	2008 %	2007 %	2008 %	2007 %	2008 %	2007 %	2008 %	2007 %
Financial Assets:								
Cash and cash equivalents	8.10	10.92	349,074	324,750	818	870	349,892	325,620
Receivables	-	-	-	-	13,260	9,360	13,260	9,360
Other financial assets	8.08	-	250,000	-	3,208,787	6,217,752	3,458,787	6,217,752
Total Financial Assets	-	-	599,074	324,750	3,222,865	6,227,982	3,821,939	6,552,732
Financial Liabilities:								
Payables	-	-	-		100,560	51,461	100,560	51,461
Total Financial Liabilities	-	-	-	-	100,560	51,461	100,560	51,461

(b) Net Fair Values of Financial Assets and Liabilities

The carrying amounts approximate the fair values of financial assets and liabilities.

(c) Credit Risk

The credit risk on financial assets of the company which has been recognised on the Balance Sheet is the carrying amount.

17. Key Management Personnel Disclosures for Non-Disclosing Entities

Names and positions held of the Company key management personnel in office at any time during the financial year are:

Key Management Personnel

Non Executive Directors
Peter Gianoutsos
Robert Eric Horsell
Michael Herbert Levy
David Hugh Macintosh
Ian William Ramsay
John Paul Seale
Iven Hunter Young

Executive Director
Amanda Julie Christensen

Compensation paid, payable, or otherwise provided to the Non Executive Directors of the Company during the year ended was $Nil (2007 :$Nil).

Compensation paid, payable or provided to other key management personnel for the year ended totalled $114,368 (2007:$152,500). This comprised short term benefits.

	2008 $	18-Month period 2007 $

18. 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	349,892	325,620

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

Net income/loss for the period	(921,065)	(176,860)
Cash flows excluded from profit attributable to operating activities	-	-
Non cash flows in profit	-	-
Depreciation	4,849	12,826
Net gain/(loss) on disposal of investments	403,108	-
Changes in assets and liabilities, net of the effects of purchase and disposal of subsidiaries		
(Increase)/decrease in trade and term receivables	(68,399)	(9,360)
(Increase)/decrease in prepayments	(11,438)	15,569
Increase/(decrease) in trade payables and accruals	49,099	(76,640)
Increase/(decrease) in provision for employee benefits	1,533	-
Net cash inflow/(outflow) from operating activities	(542,313)	(234,465)

19: 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	73,249	136,301
Less: Total direct costs of fundraising	22,293	59,924
Net surplus from fundraising activities	**50,956**	**76,377**

(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	30%	44%
Net surplus from fundraising/gross income from fundraising	70%	56%
Total cost of services/total expenditure	100%	100%
Total cost of services/total income received	30%	44%

Auditor's Independence Declaration Under Section 307C of the Corporations ACT 2001

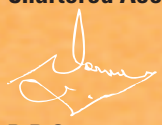
To the Directors of Australian Respiratory Council

I declare that, to the best of my knowledge and belief, during the year ended 31 December 2008 there have been:

i. no contraventions of the auditor independence requirements as set out in the Corporations Act 2001 in relation to the audit; and

ii. no contraventions of any applicable code of professional conduct in relation to the audit.

BRYAN RUSH & COMPANY
Chartered Accountants



D R Conroy
Principal

Sydney
6 April 2009

Independent Auditor's Report

To the Members of Australian Respiratory Council

Report on the Financial Report

We have audited the accompanying financial report of Australian Respiratory Council, which comprises the balance sheet as at 31 December 2008 and the income statement, statement of changes in equity and cash flow statement for the year ended on that date, a summary of significant accounting policies and other explanatory notes and the Directors' declaration.

Directors' Responsibility for the Financial Report

The Directors of the Company are responsible for the preparation and fair presentation of the financial report in accordance with Australian Accounting Standards (including the Australian Accounting Interpretations) and the Corporations Act 2001. This responsibility includes establishing and maintaining internal control relevant to the preparation and fair presentation of the financial report that is free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances. In Note 1, the Directors also state, in accordance with Accounting Standard AASB 101: 'Presentation of Financial Statements', that compliance with the Australian equivalents to International Financial Reporting Standards (IFRS) ensures that the financial report, comprising the financial statements and notes, complies with IFRS.

Auditor's Responsibility

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

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

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

Independence

In conducting our audit, we have complied with the independence requirements of the Corporations Act 2001. We confirm that the independence declaration required by the Corporations Act 2001, was provided to the Directors of the Company on 6 April 2009.

The financial report of Australian Respiratory Council as at 31 December 2007, was audited by another auditor, whose report dated 20 March 2008, expressed an unqualified audit opinion on those statements. We were unable to obtain audit evidence regarding the comparatives.

Auditor's Opinion

In our opinion,

(a) the financial report of Australian Respiratory Council is in accordance with the Corporations Act 2001, including:

- i giving a true and fair view of the Company's financial position as at 31 December 2008 of their performance for the year ended on that date; and
- ii. complying with Australian Accounting Standards (including the Australian Accounting Interpretations) and the Corporations Regulations 2001.

(b) the financial report also complies with International financial Reporting Standards as disclosed in Note 1.

BRYAN RUSH & COMPANY
Chartered Accountants

D R Conroy
Principal

Sydney
6 April 2009

Summary Financial Report
Income Statement

ARC's Income Statement for the 18-month period ended 31 December 2008

	2008 $	2007 $
REVENUE		
Donation and Gifts - monetary & non-monetary	73,249	136,157
Legacies and bequests	-	2,100
Grants		
AusAid	-	-
Other Australian	-	-
Other overseas	16,231	-
Investment Income	32,286	887,890
Other Income	27,896	25,712
Total Revenue	**149,662**	**1,051,859**
EXPENSES		
Overseas Projects		
Funds to overseas projects	18,351	92,842
Other project costs	109,171	-
Domestic projects	498,779	363,641
Community education	3,509	2,000
Fundraising Costs		
Public	22,293	59,924
Government, multilateral and private	-	-
Administration	418,624	710,312
Total Expenses	**1,070,727**	**1,228,719**
Excess of revenue over expenses (shortfall) from continuing operations	(921,065)	(176,860)

Summary Financial Report

ARC's Table of Cash Movements for Designated Purposes for the year ended 31 December 2008

	Cash available at the beginning of the financial period $	Cash raised during the financial period $	Cash disbursed during the financial period $	Cash available at the end of the financial period $
Australia Research Grants & Fellowships	-	73,249	(218,761)	(145,512)
Australian Projects	-	-	(280,018)	(280,018)
International Projects	-	-	(127,522)	(127,522)
Community Education	-	-	(3,509)	(3,509)
Other Purposes	325,620	2,286,940	(1,706,107)	906,453
Total	**325,620**	**2,360,189**	**(2,335,917)**	**349,892**

Note

In the year ended 31 December 2008, the Board allocated an amount for Australian research grants and fellowships. The shortfall in cash reserves is compensated by cash raised from investment activities.

Statement of Changes in Equity

For the year ended 31 December 2008

	Capital profit Reserves $	Asset Revaluation Reserves $	Retained Earnings/ (accumulated losses) $	Total $
Balance at 1 January 2007	2,411,980	1,177,620	5,065,077	8,654,677
Excess of revenue over expense	-	-	(176,860)	(176,860)
Revaluation decrement	-	(272,865)	-	(272,865)
Balance at 31 December 2007	**2,411,980**	**904,755**	**4,888,217**	**8,204,952**
Excess of revenue over expense	-	-	(921,065)	(921,065)
Revaluation decrement	-	(2,109,680)	-	(2,109,680)
Transfers to and from reserves		(492,813)	835,746	342,933
Balance at 31 December 2008	**2,411,980**	**(1,697,738)**	**4,802,898**	**5,517,140**

Our wish...

Breathing is something that most people take for granted. But did you know that each year some three million babies around the world succumb quietly to the respiratory infections that close down lung function.

- Respiratory disease is one of the largest killers in Australia and diseases such as pneumonia and influenza may threaten any of us.
- TB alone kills two million people around the world year after year.

We wish to help find solutions.

ARC has been working for the prevention and cure of respiratory infections such as tuberculosis since the beginning of last century.

to help find solutions for deadly respiratory illness...

and to help the sick find breath

Please support our efforts and send a donation.

Your contribution, no matter the size, will make a significant contribution to the lives of sufferers of lung disease both here and across the Pacific.

Australian Respiratory Council
GPO Box 102, Sydney NSW 2001

Phone: 02 9223 3144
Fax: 02 9223 3044
Email: arc@thearc.org.au

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

Australian Respiratory Council (ARC) is a Constituent Member of the International Union Against Tuberculosis and Lung Disease (IUATLD). The Union has as its mission the prevention and control of tuberculosis and lung disease, as well as related health problems, on a world wide basis, with a particular emphasis on low income countries.

Australian Respiratory Council ABN 11 883 368 767
GPO Box 102 Sydney NSW 2001
Tel 02 9223 3144 Fax 02 9223 3044
Email arc@thearc.org.au Website www.thearc.org.au