CONFERENCE SUMMARY REPORT

2018 AUSTRALASIAN TUBERCULOSIS CONFERENCE
WINDS OF CHANGE: TOOLS FOR TB ELIMINATION

CONTENTS

OVERVIEW OF THE 2018 AUSTRALASIAN TUBERCULOSIS CONFERENCE

Background

The Australasian Tuberculosis Conference series commenced in 2003 and has been held on an intermittent basis during the last 14 years. The 2003 and 2013 conferences were held in Auckland and the 2006 conference was held in Wellington, hosted by Regional Pubic Health. In between these events, Regional Public Health and Auckland Regional Public Health Service have organized three separate study days for nurses and other health professionals working with Tuberculosis to keep up to date with changes in the area.

Regional Public Health was approached to organise and host the 2018 conference in Wellington.

Tuberculosis (TB) remains a cause of high health burden worldwide. TB is ranked as one of the top 10 contributors to mortality worldwide – in 2015, 1.8 million deaths were due to TB. Over 1200 new cases occur in Australia and 300 in New Zealand annually. We are also in a time of change in TB: increasing frequency of multidrug resistance, greater migration from countries with high TB burden, new diagnostic techniques, treatments, and tools for understanding TB epidemiology all create an imperative for building capacity and enhancing skills among the TB control healthcare workforce.

The 2018 Australasian Tuberculosis Conference was therefore considered to be timely.

Conference objective

Continuing professional development of the health workforce involved in all aspects of tuberculosis management: clinical care (investigation, diagnosis, treatment); occupational health; infection control; public health; policy and guideline development; immigration; laboratory science; and research.

Format

The conference was developed as a two day event with plenary and concurrent scientific sessions. Planning for the conference occurred over an eighteen-month period from mid-2017.

Dates and venue

Thursday 30 – Friday 31 August 2018

Museum of New Zealand Te Papa Tongarewa

Delegates

The 2018 Australasian Tuberculosis Conference provided an ideal opportunity to connect practitioners and researchers involved in tuberculosis work.

Based on previous conferences in the series, approximately 120-150 delegates were expected to register for the conference. In past conferences, delegates have come from the following professional groups: clinical doctors, microbiologists, clinical nurses, laboratory scientists, infection control nurses, occupational health staff, public health doctors, public health nurses, government agency policy-makers, and researchers.

The 2018 conference attracted 177 delegates from a range of organisations and work settings including district health boards (DHBs), public health units (PHUs), universities and research centres, other health organisations, hospitals and laboratories and non-health organisations with a strong interest in tuberculosis (e.g. immigration sector). The largest proportions of delegates came from district health boards (44%), public health units (21%), universities or research centres (11%), other health organisations (10%), and hospitals or laboratories (7%).

The conference seemed to appeal to a broad workforce as indicated by registration types (which were based on role/profession). Nurses and allied health professionals (36%) and physicians (32%) made up the majority of delegates. Other delegates comprised “other” occupational groups (15%), academics/researchers (10%), and medical registrars (7%).

To achieve equity of access, registration costs were tiered: health professionals with access to DHB funds for continuing professional development purposes were charged at a higher rate (approx. double) to those of nursing, allied health and academic registrants.

Invited speakers

The 2018 conference brought together key New Zealand and Australian delegates from across the specialist healthcare and academic workforce concerned with tuberculosis control. Our keynote speaker was Dr. Timothy Walker a clinical researcher based at John Radcliffe Hospital and University of Oxford, United Kingdom. Dr. Walker presented on the utilisation of whole genome sequencing. Delegates also heard from leading Australasian experts on current major topics including drug resistance, epidemiology, treatment and field investigations. Most invited speakers had their registration fees waived but were expected to self-fund travel and accommodation costs.

Funding was available to cover travel and accommodation costs for a limited number of invited speakers.

Funding, sponsorship and partnership

Seed funding was provided by Lung Health, on the expectation that the funding would be repaid from conference earnings (income from registration fees) if the Conference returned a profit. A 'break-even' point was budgeted based on conference registrations; Regional Public Health hoped to reach or exceed this point, and the Leadership team approved it to go ahead nevertheless.

A small number of potential sponsors with an interest in supporting this conference were approached with proposed sponsorship levels and corresponding benefits.

The following organisations/agencies provided partnership and sponsorship for the conference:

- The Thoracic Society of Australia and New Zealand, leaders in lung health endorsed and partnered with the Conference.
- Environmental Science and Research: A Crown Research Institute that specialises in science relating to people and communities and strives to keep people safe, healthy and prosperous by delivering solutions for local and central government, industries, and other organisations.
- Regional Public Health: The public health unit working for better health for the Greater Wellington Region, Wairarapa, Hutt Valley and Capital & Coast DHBs, Conference host and organiser.
- New Zealand Ministry of Health: Leading New Zealand's health and disability system.
- QIAGEN: a provider of sample and assay technologies in more than 25 countries.
- Pacific Radiology: medical imaging service provider in New Zealand and Australia.

The 2018 Australasian Tuberculosis Conference was fortunate to receive the level of support and partnership provided by these agencies. The sponsoring and partnership agencies also opened up distribution channels for publicising the event and increased its credibility.

CONFERENCE ORGANISATION

When the idea was proposed, the RPH Leadership Team agreed to support the hosting and organisation of the 2018 Australasian TB conference. RPH also agreed to provide internal resource and to underwrite the event.

In initial discussions, Auckland Regional Public Health Service and the Sub-Regional TB Liaison Group were to be involved with the planning of the conference content and the schedule of speakers and presentations. However, due to staff changes, the following organisational structure emerged:

1. **RPH Conference Organising Committee** comprising key management and staff of the Healthy Environment and Disease Control Group and Business Analytical and Support Unit to manage the operational aspects of the Conference. This included planning, seeking sponsorship, promotion, marketing, design, health and safety, and financial monitoring.

2. **Scientific Committee** comprising members from among the medical fraternity in the Wellington Region to focus on Conference content, identify keynotes and develop Conference themes.

3. **Medical Officer of Health** TB Portfolio Lead, and Communicable Disease **Public Health Nurses** were link people between these committees.

4. **Event Manager** contracted to set up the initial project plan, work with the website developer, co-ordinate logistics and implement committee decisions.

5. Conference organiser **Conference Innovators** contracted for aspects of the conference, in particular to manage registrations, communication, flights and accommodations for speakers, and provision of key practical and logistical support on the two conference days.

The commitment of RPH to use internal capacity and experience to undertake a large part of the event management succeeded in minimising registration costs and improving access and participation for delegates (Financial report appendix 3).

CONFERENCE CONTENT

Theme

“Winds of Change: Tools for TB Elimination” was identified as an aspirational Conference theme that also referenced the windy city of Wellington. The theme also created a sense of purpose and focus for the event, and once identified, featured in all promotional material, blurbs and information flyers.

Further sub-themes emerged as follows:

- New strategies for tuberculosis elimination
- Cross-border issues and latent tuberculosis infection
- Biomedical advances toward tuberculosis elimination
- Clinical tuberculosis topics
- Microbiology and clinical
- Public health topics
- Genomic, diagnostic and strategic directions
- Clinical dimensions
- Drug resistance and public health challenges
- New Zealand tuberculosis guidelines

Abstracts

The call for abstracts generated 25 abstract submissions which were reviewed by a sub-group of the scientific committee. Abstracts were selected for content and to enable the development of coherent parallel break-out sessions.

Conference programme

The scientific committee drafted the conference programme according to themes, speakers and abstract submissions; development of the programme went through multiple iterations.

By definition the Australasian Tuberculosis Conference had a specific disease at its centre, and attempted to cover as many different aspects of this disease as possible. The advantage of this arrangement was that those working in different professional groups were able to hear presentations from outside their normal sphere of interest and to engage in multi-sectoral networking. It was important to balance cutting edge content with core professional development requirements.

The conference bridged global, regional and personal issues. This was exemplified in the opening session, the three speakers in which comprised a patient perspective delivered by the family member of a tuberculosis patient, Ministry of Health Director of Population, Regulation and

Assurance Dr. Stewart Jessamine, and Member of Parliament Louisa Wall who also addressed the conference as a member of the Global TB Caucus: a global network of parliamentarians dedicated to ending tuberculosis.

Conference dinner

122 conference delegates & staff attended the Conference Dinner on 30 August 2019 evening. Twiggy Johnston-Welsh, Regional Public Health Community Liaison and Pacific Sexual Health Advisor, was Master of Ceremonies. Twiggy is currently the Chair of the Pomare Taita Community Trust, a member of the Pomare School Board of Trustees and is on the Northern Ward Community Panel. These positions allow her great insight into the long term wellbeing of all peoples in her community.

Twiggy's community connections were invaluable in providing a rich cultural feast of performance to entertain Conference dinner guests. **Ngā Hau e Whā,** the group of community children from Hutt Valley schools came together to showcase Kapa Haka with a Pacific flavour. These children also took part in Polyfest Hutt Valley in July 2018, an event that brings children from all Iwi and Pacific cultures together to celebrate and learn through dance, song and tradition.

Conference coverage by media

A Media Release about the 2018 Tuberculosis Conference was sent by Regional Public Health to relevant media contacts (Appendix 1).

Maori Television attended Day 1 and interviewed some speakers. They televised some footage of the Conference as part of awareness raising about Tuberculosis and it's incidence among Māori.

http://www.maoritelevision.com/news/regional/experts-ramp-efforts-eliminate-tuberculosis-nz

PROGRAMME

Winds of Change: Tools for TB Elimination

DAY ONE: Thursday 30 August 2018

7:30am	Arrival and registration
8:30am	Mihi: ***Peter Jackson,*** *Kaihautū, Capital & Coast District Health Board* Welcome: ***Dr Craig Thornley,*** *Convenor/Chair, Scientific Committee*
8:45am	Opening addresses: Global TB Caucus: ***Louisa Wall MP****, Member for Manurewa, New Zealand* Patient perspective: ***Keyur Anjaria*** Ministry of Health: ***Stewart Jessamine****, Director Protection, Regulation and Assurance*
9:25am	General session: ***New strategies for TB elimination*** Oceania Room Chair: Lesley Voss
9:25am	What role for technology in eliminating TB? ***Dr Timothy Walker****, Nuffield Department of Medicine, University of Oxford, United Kingdom*
9:55am	Epidemiology and natural history of childhood TB ***Professor Ben Marais****, University of Sydney, Children's Hospital at Westmead Clinical School, Marie Bashir Institute for Infectious Diseases and Biosecurity, Australia*
10:25am	Morning tea
10:55am	General session: ***Cross-border issues and LTBI*** Oceania Room Chair: Ayesha Verrall
10:55am	Prevention and strategic treatment of LTBI – insights from recent research ***Prof Philip Hill****, Co-Director, Centre for International Health, University of Otago, New Zealand*
11:20am	Understanding TB in the Torres Strait; insights from WGS ***Dr Chris Coulter****, Director, Queensland Mycobacterium Reference Laboratory & WHO Collaborating Centre in Tuberculosis Bacteriology, Australia*
11:45am	Immigration NZ migrant screening: outcomes and challenges ***Dr Rob Kofoed****, Immigration New Zealand*
12:05pm	TB control in the Pacific Island Countries – Challenges and Prospects ***Dr Subhash Yadav,*** *World Health Organization, Suva, Fiji*
12:25pm	Lunch
1:20pm	General session: ***Biomedical advances toward TB elimination*** Oceania Room Chair: Kate Grimwade
1:20pm	Tackling drug-resistant tuberculosis by targeting multiple components of mycobacterial bioenergetics ***Professor Greg Cook****, Department of Microbiology & Immunology, University of Otago, New Zealand*
1:45pm	Progress towards development of an improved TB vaccine ***Dr Joanna Kirman****, Department of Microbiology & Immunology, University of Otago, New Zealand*
2:10pm	Early clearance of *Mycobacterium tuberculosis* ***Dr Ayesha Verrall****, Department of Pathology and Molecular Medicine, University of Otago Wellington, New Zealand*
2:35pm	Therapeutic drug monitoring of isoniazid and rifampicin ***Dr Michael Maze****, University of Otago, Christchurch, New Zealand*
2:55pm	Afternoon tea

3:15pm-4:45pm	Concurrent Session: Clinical TB Venue: Oceania Room Chair: Matt Kelly	Concurrent Session: Microbiology and clinical Venue: Rangimarie Room 2 Chair: Juliet Elvy	Concurrent Session: Public Health Venue: Rangimarie Room 1 Chair: Margot McLean
3:15pm	The diagnostic performance of screening algorithms for tuberculosis among HIV-infected prisoners – *Haider Al-Darraji, University of Otago*	Molecular typing of Mycobacterium tuberculosis isolates in New Zealand: an update – *Indira Basu, LabPlus, Auckland DHB*	Navigating Patient Centred Care – *Ellie Brooking, Regional Public Health, Hutt Valley DHB*
3:30pm	Chronic kidney disease and tuberculosis in Auckland – *Jun Suh, Counties Manukau DHB*	The use of whole genome sequencing to characterize Mycobacterium tuberculosis isolates in the context of cross-transmission events – *Sally Roberts, LabPlus, Auckland DHB*	Tele DOT: Directly Observed Therapy for Tuberculosis Using Telehealth – *Lavinia Perumal and Abby Anderson, Auckland Regional Public Health Service, Auckland DHB*
3:45pm	Vitamin D in active Tuberculosis in New Zealand – *Kate Grimwade, Bay of Plenty DHB*	The molecular epidemiology of a MIRU-VNTR linked Mycobacterium tuberculosis cluster in New Zealand – *Veronica Playle, LabPlus, Auckland DHB*	Gaining community insight into Tuberculosis research: A participatory approach – *Anneka Anderson, University of Auckland*
4:00pm	What is the additional yield from obtaining a third induced sputum sample for diagnosing smear negative, culture positive pulmonary tuberculosis – *Matthew Broom, Auckland DHB*	Diagnosis of military TB by opportunistic testing – *Sally Roberts, LabPlus, Auckland DHB*	When treating carcinogenesis awakens phthisis: A public health response to pulmonary Tuberculosis in a New Zealand cancer centre – *James Chancellor, Toi Te Ora, Bay of Plenty DHB*
4:15pm	Delays in the diagnosis and treatment of pulmonary tuberculosis in the Auckland Region- *Michael Plunkett, Auckland DHB*	Mycobacterium Abscessus Pulmonary Disease in an immunocompetent patient: A complex case with a successful early treatment outcome – *Rob McLachlan, Capital & Coast DHB*	Tuberculosis disease in New Zealand: recent epidemiology to inform efforts to eliminate TB in New Zealand – *Jill Sherwood, Institute of Environmental Science and Research Ltd*
4:30pm	Tuberculosis the trouble maker – *Shu Jin Tan, St John of God Midland Public and Private Hospital, Perth, WA*	Audit of the Latent Tuberculosis clinic at Wellington Hospital – *Melissa Tan, Capital & Coast DHB*	The Sharing of Tuberculosis from an Overseas Mission Trip – *Kathleen Smith, Auckland Regional Public Health Service, Auckland DHB*
4:45pm	Conclusion of the day		
6:45-10:00pm	Dinner at Te Marae		

DAY TWO: Friday 31 August 2018

7:00am	**QIAGEN Satellite Sponsored Breakfast Symposium** Introduction to the QuantiFERON TB Gold Plus test and an update on the latest published research ***Dr Jeff Boyle***, Senior Director, Global Technical Lead and Head of Medical and Scientific Affairs for Infection and Immune Diagnostics

8:30am	General session: ***Genomic, diagnostic and strategic directions*** Oceania Room Chair: Tim Blackmore
8:30am	Can WGS alone direct individualised therapy? ***Dr Timothy Walker****, Nuffield Department of Medicine, University of Oxford, United Kingdom*
8:55am	*Mycobacterium tuberculosis* drug susceptibility testing in New Zealand; current and future state of play ***Dr Sally Roberts****, Clinical Head, LabPlus, Auckland District Health Board, New Zealand*
9:15am	Strategic directions towards TB elimination in a low burden country ***Dr Chris Coulter****, Director, Queensland Mycobacterium Reference Laboratory & WHO Collaborating Centre in Tuberculosis Bacteriology, Australia*
9:35am	Genomics informs transmission dynamics and drug resistance of Mycobacterium tuberculosis in Vietnam ***Sarah Dunstan****, Peter Doherty Institute for Infection and Immunity, University of Melbourne*
9:55am	WGS of New Zealand Mycobacterium tuberculosis isolates defines historic dispersal and leads to a strain-specific diagnostic ***Claire Mulholland****, University of Waikato*
10:15am	Morning tea
10:45am	General session: ***Clinical dimensions*** Oceania Room Chair: Michael Maze
10:45am	Management of drug resistant TB in children ***Professor Ben Marais****, University of Sydney, Children's Hospital at Westmead Clinical School, Marie Bashir Institute for Infectious Diseases and Biosecurity, Australia*
11:10am	Interferon Gamma Release Assays Positivity and Conversion Rates in New Nursing and Medical Students in Bandung, Indonesia ***Lika Apriani****, TB-HIV Research Centre Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia*
11:30am	Latent tuberculosis infection (LTBI) – findings from short-course trials ***Professor Philip Hill****, Co-Director, Centre for International Health, University of Otago, New Zealand*
11:55am	Investigating transmission dynamics of tuberculosis for the design of effective interventions in Myanmar: lessons from a high-burden setting ***Htin Lin Aung****, Sir Charles Hercus Research Fellow, University of Otago, Dunedin*
12:15am	Presumed tuberculosis uveitis in non-endemic country for tuberculosis: Case series from a NZ tertiary uveitis clinic ***Joanne Sims****, Ophthalmologist, Auckland DHB*
12:35pm	Lunch
1:30pm	General session: ***Drug-resistance and public health challenges*** Oceania Room Chair: James Taylor
1:30pm	Drug resistant TB in New Zealand ***Dr Mitzi Nisbet****, Infectious Disease & Respiratory Physician, Auckland District Health Board, New Zealand*
1:45pm	Case studies of MDR-TB in New Zealand ***Kate Grimwade***, ***Tim Blackmore*** and ***Chris Lewis***, for the NZ Clinical TB Network – 8 minute case presentations

	Discussion of MDR-TB case studies
2:30am	Multidrug resistant Tuberculosis in Auckland 1989 – 2016 ***Tim Cutfield**, Infectious Diseases Registrar, Auckland DHB*
2:45pm	WGS as a point-of-care technology for the rapid diagnosis of drug-resistant Mycobacterium tuberculosis (Mtb) ***Yang Fong**, Genomics Specialist, Massey University*
3:00pm	Tuberculosis Outbreak in Māori: Challenges to getting well faced by itinerant workers in rural New Zealand ***Naomi Gough**, Medical Officer - Force Health Organisation, New Zealand Army*
3:15pm	Afternoon tea
3:35pm	General session: **New Zealand TB Guidelines** Oceania Room Chair: Caroline McElnay
3:35pm	The New Zealand TB Guidelines, 2018 edition ***Ayesha Verrall and chapter authors**, TB Guidelines writing group*
5:00pm	Summary and close

EVALUATION OF THE CONFERENCE

A brief survey was designed and distributed online through SurveyMonkey. It comprised 12 questions and included five categorical/rating questions and seven open-ended questions. The survey was developed with input from members of the RPH conference committee (including a RPH public health physician).

The survey included questions about the delegates' work interests in tuberculosis, occupational group and work setting, as well as geographic region, in order to contextualise responses and gauge the representativeness of the sample. We asked delegates to identify topics that received good coverage and which received less coverage than desired. Questions were also asked about the conference organisation and atmosphere, inviting delegates to comment on what stood out for them and what could be improved. We also asked delegates to identify what they would do differently as a result of attending the conference, and what else should be considered for future conferences.

This report provides a summary of findings from all questions, with a basic synthesis of findings from the open-ended questions. Full details of responses to the open-ended questions are available in a separate appendix (Appendix 2).

Survey administration

The online link for the survey was promoted to delegates on Day 2 of the conference, and it was sent to delegates' email addresses the same day. The survey was open for 12 days, and re-opened briefly after this timeframe for two delegates who had not had the opportunity to respond to the survey within the 12-day timeframe. A reminder email (including the survey link) was sent to all delegates seven days after the launch of the survey, and this boosted the participation rate considerably. Delegates from a public health unit in New Zealand also emailed positive feedback about the conference to one member of the Regional Public Health conference organising committee.

Participation rate

A strong response rate of 47% was achieved. Ninety-five delegates opened the survey link. Of the 95 "responses", data from 11 delegates were removed from the final dataset because most questions were not completed (this indicates that several people opened the survey link but did not complete the survey). The responses of the remaining 84 delegates were treated as the final dataset. A range of delegates responded to the survey. The strong response rate and mix of delegates who responded adds weight to the findings obtained from this sample of delegates.

Survey findings and discussion

Geographic location of respondents

The geographic location of survey respondents was mainly in New Zealand with 23% (n=19) of respondents working in greater Wellington, and 63% (n=53) from other parts of New Zealand. Some respondents came from Australia (13%) and one other nation (1%).

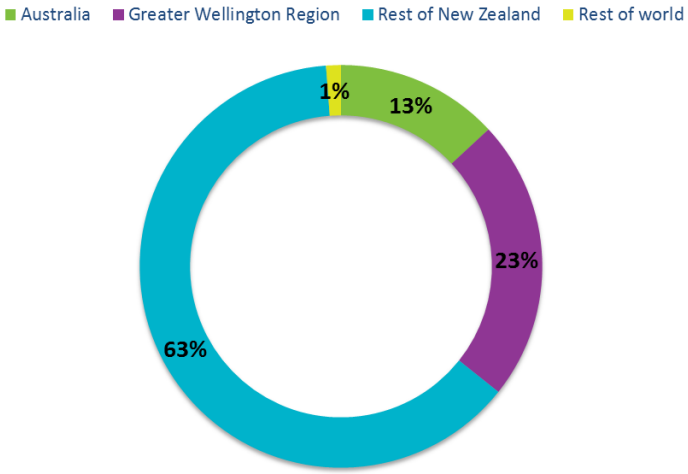

Figure 1: Geographic work locations of the 84 delegates who completed the survey

Work interests in TB

In terms of work interests in TB, more than half of respondents identified the field of public health (56%), and around half indicated clinical care (52%). Many respondents (43%) identified two or more interest areas. Four respondents (5%) selected "other" to describe their interest in TB. The four work and/or interest areas in the "other" category were: international TB control, quality assurance, BCG vaccination programme, and equity. Table 1 provides a complete breakdown.

Table 1: Public health and clinical care were prominent work interests of the 84 respondents

Work interest	Proportion of respondents
Public health	56%
Clinical care	52%
Infection control	25%
Policy & guideline development	23%
Infection control	25%
Research	19%
Immigration	17%
Laboratory science	13%
Occupational health	6%
Other	5%

Note: Percentages sum to greater than 100% because delegates may have multiple work interests

Occupational group and setting

Large proportions of respondents worked in medical (42%) or nursing (30%) sectors, with a large number of respondents having a public health focus (27%). Almost a quarter of the respondents (24%) identified two or more occupational groups or work settings. Five respondents (6%) described "other" interests in TB. These were: occupational health, quality assurance, immigration health screening, management, and regulatory public health. Table 2 below provides full details.

Table 2: Most respondents came from medical, nursing, or public health occupations (total n=84)

Occupational groups and work settings	Proportion of respondents
Medical	42%
Nursing	30%
Public health	27%
Academia/Research	14%
Laboratory	7%
Other	6%
Other clinical care	2%
Allied health	1%

Note: Percentages sum to greater than 100% because delegates may have multiple roles and work settings

Conference organisation, registration, and atmosphere

Respondents were asked to consider the practical features of the conference in terms of submitting abstracts and registering, communication about the conference, the venue, the atmosphere, and the conference dinner. The majority of respondents rated these features as excellent (76%). Smaller groups of respondents rated the practical features of the conference as good (20%), or fair (2%). One respondent did not answer this question.

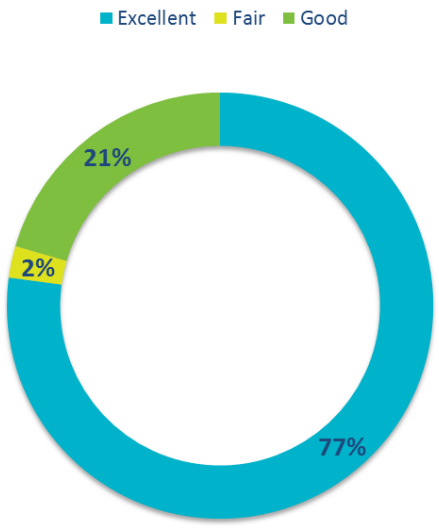

Figure 2: Respondents' ratings of the conference organisation and atmosphere

Respondents' occupational group and work settings were amalgamated into four groups which were broadly based on personal medicine, strategy and evidence, and laboratory science (see Figure 3). Respondents' ratings of conference organisation and atmosphere were stratified according to the four groups. Some respondents identified with more than one occupational group or work setting which means they may be represented more than once in the analysis.

Figure 3: The conference was generally perceived as having excellent organisation

The majority of respondents (74% or above) rated the conference as "excellent", irrespective of occupational group or work setting. The respondents that rated the conference as "good", the lowest recorded rating, fell within the themes Clinical/Patient Focus (23%) or Evidence/Policy/Strategy (19%).

Forty five respondents (54%) provided comments about how the conference could be improved. These comments were categorised into general themes to determine the frequency of each improvement suggestion. Seventeen of these respondents (38%) made comments about conference logistics, suggesting the use of a Twitter handle; having presentation material available at the conference; better sound quality and catering; as well as improved conference table seating (i.e. more comfortable, not in a table formation).

A further 28 of these respondents (62%) made comments about conference organisation and programme design, including fewer plenary sessions; less scientific content; more opportunities to hear about nursing clinical work (and possibly include a nurse-specific forum); more and greater clarity of information when booking accommodation; a confirmation email that an abstract had been received; better time management; more time for Question and Answer sessions; and facilitated discussions with particular interest groups.

Coverage of conference topics

Of the 82 respondents who provided comments about topics that were well-covered, seven respondents expressed that all topics were covered well. Two respondents also commented positively on the wide coverage of topics. Respondents were more likely to provide a comment in response to the question about topics that were well-covered (82 respondents; 98%) than to the

question about topics that were not well-covered (68 respondents; 81%) which suggests that there was general satisfaction with the range of topics.

The topic that received the greatest number of positive comments was whole genome sequencing (WGS) and its various uses as a tool for research, surveillance, and clinical management (including for drug resistance). The next most commented on topics were multi-drug resistant TB (14 respondents) and latent TB infection (9 respondents). Other topics that were considered well-covered were case studies, global TB epidemiology and eradication, research, public health, and laboratory aspects. Individual speakers and sessions were also praised in a small number of comments, however, respondents tended to comment on topics and sessions rather than individual speakers.

In terms of topics that could have had *stronger* coverage, 68 respondents provided comments and 12 respondents perceived that there were no obvious shortcomings. One comment was "I think there was something for everyone depending on your interests – academic/clinical/social impacts." Another comment emailed through from staff at a New Zealand public health unit stated "I thought you got the public health/personal health balance just right." A basic thematic analysis with percentages of respondents is shown in Table 3.

Table 3: Broad topics that were not so well covered (n=59 comments)

Broad topics that respondents felt were not well covered	Proportion of respondents
Public health aspects	10%
Clinical management	9%
Latent TB	9%
Maori, Pacific and indigenous people	7%
Vaccination	7%
Reaching vulnerable groups	7%
Nursing perspectives	7%
Immigration policies	5%
Strategies to reduce health inequalities	5%
New TB guidelines	3%

The low percentages associated with the broad topics listed in Table 3 suggest that no particularly significant gaps were evident to these respondents.

What stood out for respondents

The 75 respondents who answered this question wrote very positive comments about the range of communication activities leading up to the conference, the venue and the food, the calibre of speakers, opportunities for discussion and networking with others interested in TB. Some respondents highlighted a number of conference aspects in their responses suggesting they were very impressed with the quality of the conference and the overall experience. Other respondents made concise statements such as "inclusive approach", "interesting, varied programme", and "it was educationally very dense without much redundancy in the topics". A word cloud highlights how

significant the venue, speakers, and overall conference organisation were in respondents' comments (see Figure 4).

Overall ratings of the conference

Respondents were invited to rate their overall conference experience between 1 (poor) to 6 (outstanding). More than three-quarters of respondents gave the conference a rating of 6 (outstanding: 26%) or 5 (51%). Very few respondents rated the conference a 3 or lower (2%). Three respondents did not provide an answer to this question.

Figure 4: Word cloud highlighting conference aspects that most appealed to respondents

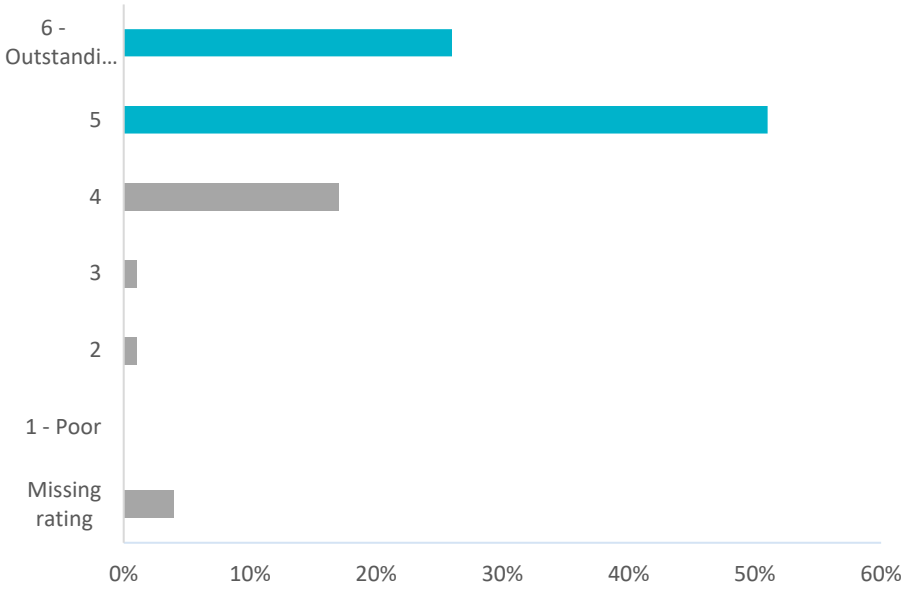

Figure 5: The majority of respondents gave the conference a very positive rating (n=84)

An analysis of overall conference ratings by origin of the respondent indicated some slight differences. When ratings five and six were combined, 91% of Australian respondents (total n=11) assigned one of these ratings, as did 85% of respondents from greater Wellington (total n=19), and 72% of respondents from the rest of New Zealand (total n=53).

What was particularly useful at the conference

Seventy-five respondents (89%) provided a total of 113 comments to this question. A basic thematic analysis with percentages of respondents is shown in Table 4.

Table 4: Networking and learning opportunities were identified as particularly useful (n=113 comments)

Broad themes describing what was particularly useful at the conference	Proportion of respondents
Networking	24%
Learning opportunity	20%
Whole genome sequencing	10%
TB guidelines	7%
National TB situation	6%
Management of MDR TB	5%
New drugs/treatments	5%
Epidemiology	3%
Immigration update	3%
Diagnostics	3%

As shown in Table 4, more than half of the comments indicated how important respondents found the network opportunities (24%), the opportunity to learn new things or more about a topic (20%),

and deeper understanding of whole genome sequencing (10%). Respondents affirmed the importance of a range of topics.

Conference impact

We were particularly interested in what delegates would do differently as a result of attending the conference. The majority of respondents (80%) wrote a response to this question which is heartening, and the tone of comments suggested that attending the conference was highly valuable. Several respondents identified a number of things that they would do differently, monitor, or upskill in. Some comments indicated that respondents experienced increased confidence in topics related to their work as a result of attending the conference. Several comments referred to knowledge gains in terms of TB management, treatment of latent and multi-drug resistant TB, and greater awareness of policy and treatment developments that they could apply in their practice. A basic thematic analysis of responses is provided in Table 5.

Table 5: Broad themes capturing what respondents would do differently (n=60 comments included)

Broad themes of what respondents would do differently	Proportion of respondents
Change in clinical practice	17%
Share learnings	13%
Continue to network	12%
Follow research and trends	10%
Support eradication of TB in NZ	8%
Policy development	7%
Management of MDR TB	7%
Consider impact of new TB guidelines	5%
Advocate for TB control programmes for Māori	5%
Greater confidence in managing TB	3%

Several respondents' comments indicated greater confidence and knowledge gains in terms of TB management, treatment of latent and multi-drug resistant TB, and being aware of policy and treatment developments that they would apply in their practice. Many respondents appreciated the opportunity to meet other people working in TB, and enjoyed gaining knowledge of forums they could join. A few respondents were inspired to think more about the health sector response to Māori and Pacific peoples, and as would be predicted migrant communities.

It was clear that the conference was a motivating and inspiring experience with several respondents describing how they would take knowledge back to colleagues, be more active in producing research and case studies, support policy development and be equipped to respond to policy changes, and ultimately contribute to the elimination of TB.

Respondents' final comments

In the last question of the survey, respondents were invited to provide any other comments about their experience at the conference. Fifty-five respondents made comments, of which nine respondents stated that they had nothing to comment on. A further 22 respondents provided positive feedback about the event. The positive comments described how well organised and useful the conference was, the excellent mix of presentations; and satisfaction with the venue, catering, and evening entertainment. One respondent suggested using "the organisation of this conference as a template for the next."

Ten respondents (18%) suggested topics for inclusion or alternate conference formats in a future conference. These suggestions included:

- Reflections on recent outbreaks of TB in NZ and analysis of how/why they occurred
- New advances in diagnostics, treatments, and vaccines
- Presentations focused on TB and paediatrics
- More content for nurses (which would also bring nurses together to share practice knowledge)
- Emphasising the value of scientific content to inform and change strategy and practice in a rapidly changing landscape
- Supporting migrants to engage with the New Zealand healthcare system to avoid travelling to use their home country's healthcare system
- Update on the elimination of TB in New Zealand
- Clinical vignettes with an expert panel
- Poster abstracts (which would help more people to attend by accessing continuing medical education funds)
- Different streams according to interests, such as scientific, medical, nursing-focused
- Case reports around use of Bedaquiline and Delamid
- Fewer presentations and more discussions and "Question and Answer" sessions.

Six respondents provided comments at the end of the survey about perceived shortcomings of the conference. These tended to focus on logistical and practical issues including the choice of venue, location, seating arrangements and comfort (i.e. uncomfortable chairs, preferring a lecture style seating arrangement to a table arrangement), room temperature (i.e. too cool), the registration process, and the expense of travelling. In particular, one respondent remarked that there was some confusion in the application process where the format obscured the need to tick a box. They and their colleagues missed out on the conference dinner, although they would have liked to have attended.

Lastly, one respondent perceived that although the event was promoted as an Australasian meeting, they noticed no representatives from the Pacific Islands, and only a few Australian representatives.

SUMMARY

The 2018 Australasian Tuberculosis Conference covered all aspects of TB management, clinical care, public health, occupational health, infection control, policy and guideline development, research, immigration issues, and laboratory science. The conference attracted 177 delegates from a range of organisations and work settings. Regional Public Health conducted a conference delegate survey which had a 47% participation rate. A range of delegates from different roles and work settings completed the survey.

Survey respondents fed back that the conference provided good coverage of topics and, in particular, many delegates commented positively on whole genome sequencing and its various uses as a tool for research, surveillance, and clinical management (including for drug resistance). Several respondents were positive about the coverage of multi-drug resistant TB and latent TB infection. The conference content and format was generally well-received. Positive comments were made about the conference atmosphere, calibre of speakers, comprehensiveness of the programme, the venue and food (including catering for special dietary needs), and opportunities to meet others with interests in TB and expand professional networks.

The 2018 Australasian Tuberculosis Conference closed with a resolution calling for a New Zealand Tuberculosis (TB) elimination strategy. The resolution was sent to Hon Minister David Clark.

CONFERENCE RESOLUTION

Department of Pathology
University of Otago Wellington
PO Box 7343, Wellington South 6242

13 September 2018

Hon Dr David Clark
Minister of Health
Parliament buildings
Wellington

Dear Minister,

Re: Call for a New Zealand Tuberculosis (TB) Elimination Strategy

The 2018 Australasian TB Conference was held at Te Papa, Wellington on 30-31st August. It was opened by Louisa Wall, MP for Manurewa and inaugural member of the Asia Pacific TB Caucus. Over one hundred and seventy TB experts attended, including public health physicians, specialist clinicians, nurses and scientists. The conference resolved that the organisers write to you and request the Ministry lead the development of a TB Elimination Strategy, in conjunction with technical experts.

In New York on 26th September the United Nations General Assembly is convening the first-ever high-level meeting on TB. New Zealand will be represented, and we hope that the New Zealand Government will commit to action to eliminate TB in New Zealand.

Currently, Pākehā/European New Zealanders enjoy rates of TB so low that they approach the WHO threshold for "pre-elimination". This public health achievement is evidence that TB elimination in New Zealand is possible with concerted action. A TB elimination strategy would aim to extend these health benefits to Māori, Pacific peoples, migrants and the poor who face a disproportionate burden. From the perspective of our neighbours in the Asia-Pacific region, TB elimination in New Zealand would represent an important proof of concept to help mobilise support for initiatives in their own countries.

The development of new diagnostic technologies and availability of safer preventive treatments mean we now have a realistic opportunity to eliminate TB. Our geographic isolation could mean we become the first country to do so. Ministerial level leadership will help us achieve the cross-agency changes required to realise this.

We would be happy to provide more information in person, and are excited about working constructively with your Ministry towards the goal of eliminating TB in NZ.

Yours sincerely,

Dr Ayesha Verrall

Chair TB guidelines writing group

Dr Craig Thornley

Scientific Committee, 2018 Australasian Tuberculosis Conference