

e-TB Nurses of Aus

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Newsletter No. 2 - 2013

Whichever way one may look at it: late for the last edition or early for the next, I hope you enjoy the brief July 2013 publication of the newsletter!!

My apologies for the delay in this newsletter but there has been a lot happening in this neck of the woods not to say that it is no different to anywhere else. The Queensland TB Services have been in the midst of separating the statewide role from the former Queensland TB Control Centre in Brisbane and transitioning the clinical services for south-east Queensland to the umbrella of Infection Management Services of the Metro South Hospital and Health Services. Effective from 1 July 2013, the TB unit began a new era in the history of TB in Queensland and is now known as the Metro South Clinical TB Service. On the positive side, there have been a vast amount of extraordinary achievements over the last 6 months in completely overhauling the TB services in SE Qld and preparing for a more efficient machine for the future. However, on the human side, it has been a very difficult, traumatic, stressful, emotional, sad and exhausting 12 months for all staff since the change to the service was first mooted. There is much to be said about the affects of change on staff and herein lies another potential publication!. Our previous website is now defunct and we will appear within other websites of Metro South and Department of Health. Therefore, the newsletters will now only appear on the Australian Respiratory Council (ARC) website to whom we are very grateful for sharing their cyberspace.

Just a reminder that the Australasian TB Conference is on in Auckland 27-29 Nov 2013 – be sure to register now.

Enjoy.....and until next time, look after each other.

Annmaree Nicholls (co-editor) and
Carmel Cochrane (Editor)

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www.thearc.org.au

Jill Miller, Programme Supervisor,
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www.arphs.govt.nz

State TB Services Internet sites:

VIC:	http://www.health.vic.gov.au/ideas/bluebook
ACT:	http://www.health.act.gov.au/c/health?a=da&did=10009573&pid=1207892937
SA:	http://www.rah.sa.gov.au/thoracic/about/
WA:	http://www.health.wa.gov.au/services/detail.cfm?Unit_ID=519
NSW:	http://www.health.nsw.gov.au/publichealth/infectious/tb/index.asp
NT:	http://www.health.nt.gov.au/Centre_for_Disease_Control/Tuberculosis_and_Leprosy/index.aspx
TAS:	http://www.dhhs.tas.gov.au
QLD:	http://www.health.qld.gov.au/chrisp/tuberculosis/about_TB.asp

Upcoming Conferences

44th Union World Conference on Lung Health, 30 Oct – 3 Nov 2013, Paris, France

Australasian TB conference, 27 – 29 Nov 2013 at Hilton Hotel Auckland

www.tbconference.co.nz

Clinical Nurse Manager, Communicable Disease Control, Perth, Western Australia Closed: 11 July 2013:
<http://search.jobs.wa.gov.au/page.php?pageID=160&windowUID=0&AdvertID=151013>

Positions in Brisbane to be advertised soon:

- Several Clinical Nurse positions
- Clinical Nurse Consultant

Job Vacancies

Change of contact numbers for Brisbane TB Services

TB services in Queensland have undergone some changes in alignment with the National Health reform. There are a few structural processes that have changed as of 1 July 2013 that may affect you.

The Queensland Tuberculosis Control Centre now known as the **Metro South Clinical TB Service (MSCTBS)** remains in the same location on the Princess Alexandra Hospital campus. For the last 63 years, the unit provided a state-wide function in terms of triaging and distributing information to TB services throughout Queensland. As of July 1, the statewide functions have been transferred to the Department of Health. Therefore we request that any contact you need to make with regards to Queensland-based residents/patients be done through the relevant TB Control Unit, rather than through the Metro South Clinical TB Service.

As part of the transition, our telephone system has been changed thus new numbers:

Main enquiries no. **07 3176 4141**
 Primary fax number **07 3176 4194**

The following postcode and address list may assist you with locating the right TB Control Unit in Qld.

Tuberculosis Control Unit	Postcode Range	Address's for Tuberculosis Control Unit within Queensland
Metro South (Brisbane)	4000-4347; 4410 4499-4601; 4605 4620-4676	Metro South Clinical TB Services Locked Bag 66, Coorparoo D.C, 4151
Toowoomba	4341-4343; 4350-4498; 4606-4615	Toowoomba Chest Clinic, Kobi House Toowoomba Hospital Private Mail Bag 2 Pechey St, Toowoomba, 4350
Rockhampton	4677-4803 (except 4740, 4741)	Rockhampton Chest Clinic Rockhampton Base Hospital Canning St, Rockhampton 4700
Townsville	4804-4861; 4740-4741	Townsville Respiratory & Sleep Unit Townsville General Hospital PO Box 670, Mail Centre, Townsville, 4810
Cairns	4865-4895	Cairns Department of Thoracic Medicine (TB Control Unit) Cairns Base Hospital PO Box 902, Cairns, 4870

Case Management and Cohort Review for NSW

The NSW TB Program is in the process of developing the case management and cohort review system. A group of keen, committed nurses representing both rural and metropolitan clinics have formed a working party to steer the process.

This will be a huge task for this recently formed group. TB services are quite diverse across NSW, ranging from very small to very large clinics; some single person operated and some with 8 – 10 or more staff, with varying degrees of case management being used in each clinic.

Once case management has been formalised throughout NSW, cohort review will be introduced and implemented. Cohort review is an extremely important quality management activity for any TB program. However, it is an activity that requires time and careful planning to be successful. Nursing competencies will also be developed on case management to add to the other competencies already being used across NSW.

The steering group intends to present their work at a conference to which medical and allied health staff will be invited to enable an opportunity for learning and discussion, especially around the TB cohort review process.

The group would be interested in hearing from anyone across Australia who has information on implementing these programs. If you have any comments, questions or information, please contact Pam Banner: email Pamela.Banner@sswahs.nsw.gov.au or phone 0477 341213

Interesting Snippets

Vitamin C kills TB Bacteria

UNITED STATES: TB Economic Times (21.05.2013)

Researchers from Albert Einstein College of Medicine in New York have discovered that Vitamin C kills the TB bacteria. They report that they made the discovery accidentally while investigating how the bacteria develop resistance to the anti-TB drug isoniazid.

The researchers added isoniazid and the reducing agent cysteine to the TB bacteria in a test tube with the expectation that the bacteria would develop resistance. Instead, the researchers killed the TB culture. Next, the researchers replaced the cysteine with another reducing agent, Vitamin C, and it killed the bacteria also. When the researchers omitted the TB drug isoniazid and used Vitamin C alone, the outcome was the same—it killed the bacteria. They tested Vitamin C with drug-resistant TB strains and had the same result. Also, the TB bacteria never developed resistance to Vitamin C in the laboratory tests.

William Jacobs, the study's senior author, emphasized that so far, researchers have demonstrated these results only in a test tube. The researchers did not know if it would work with humans and, if so, at what dosage. The authors urged additional research into potential uses of Vitamin C in TB treatment, noting that it was "inexpensive, widely available, and very safe to use."

The full report, "Mycobacterium tuberculosis is Extraordinarily Sensitive to Killing by a Vitamin C-Induced Fenton Reaction," was published in the journal Nature Communications (2013; doi:10.1038/ncomms2898).

An overview of molecular sequencing

For anyone interested, the current issue of the Centre for Infectious Diseases and Microbiology's newsletter contains an overview of molecular sequencing and a description of how it is used for tuberculosis

Report from the Metro South Clinical TB Service (MSCTBS) formerly Queensland Tuberculosis Control Centre, Brisbane

By: Carmel Cochrane – Nursing Director

After an incredibly traumatic eleven months, Monday the first July 2013 saw the new-look Metro South Clinical TB Service open its doors to the community and the beginning of the next era of TB services in Queensland. Formerly known as the Queensland TB Control Centre, the clinical and the statewide functions have been separated: the statewide role transferred to the Communicable Diseases Unit of the Department of Health whilst the nurse-led, medically supported clinical services transitioned into Infection Management of the Division of Medicine of Metro South Hospital and Health Service (HHS). Fortunately we have not physically moved and remain in the purpose built building on the Princess Alexandra Hospital campus. In the 2013 climate, the unit was instructed to become a more efficient and leaner machine and as a result we unfortunately had to shed 13 positions in total: Director, two vacant medical officers and 11 (50%) administrative officers. Sadly we farewelled some long-standing members of staff between May and June 2013 including our Director Dr Tom Konstantinos who had given 37 years to TB and Ann Vaughan an administrative officer who had been with the unit for 39 years. As at 30 June, all eleven nursing positions were transferred in the organisational structure to ensure we could still maintain the nurse-led services.

To work towards reducing the allocated budget, not only did we need to reduce the number of staff but we also had to completely overhaul our processes and reengineer our Information and Communication Technology systems to increase efficiencies whilst supporting the reduced number of staff:

- Mar 13: new phone system installed: new main numbers on website & page 2 of this newsletter
- 1 May 13: new appointment system was implemented
- 1 May 13: integrated TB patient records with Metro South patient records began
- 24 Jun 13: new TB database "TARDIS" (TB and Respiratory Database Information System) rolled-out
- Redesigned, streamlined and prioritised our clinical practices e.g. results management, data duplication integrated some medical clinics back into HHS, telehealth medicine, and
- re-engineered 60yr old manual processes of patient health records whilst awaiting electronic records
- relocated staff in building to better reflect workflow
- total clean of existing building including de-cluttering, repainting

After much initial trauma of our unit closing in late 2012, we now very much look forward to the beginning of a new chapter in the history of the TB unit in Queensland.

Changes to TB chapter in “Australian Immunisation Handbook” 10th edition

By: Madeline Hall, Public Health Nurse, Brisbane
Australian Technical Advisory Group on Immunisation

The *Australian Immunisation Handbook (AIH)* 10th edition was released in April 2013. The *AIH* provides clinical advice for health professionals on the safest and most effective use of vaccines in their practice. These recommendations are developed by the Australian Technical Advisory Group on Immunisation (ATAGI) and approved by the National Health & Medical Research Council (NHMRC).

Changes to the Tuberculosis chapter from the *AIH* 9th edition (2008) version include:

- Bacille Calmette-Guérin (BCG) vaccination is no longer routinely recommended for neonates weighing <2.5 kg.
- Generalised septic skin disease, skin conditions such as eczema, dermatitis and psoriasis, and significant febrile illness are no longer contraindications to BCG vaccination but, if present, vaccination should be deferred.
- Information and recommendations are provided on newly available blood tests (Interferon-gamma release assays; IGRAs) available for the detection of tuberculosis infection.
- Information advising that BCG vaccine can be given to breastfeeding women.
- Although the product information for BCG vaccine specifies that vaccine must be used within 8 hours of reconstitution, the National Tuberculosis Advisory Committee (NTAC) guidelines recommend that any unused vaccine is discarded after a working period of 4 to 6 hours.

For information on changes to other areas of the handbook, please see the educational resource available on the National Centre for Immunisation Research and Surveillance (NCIRS) website - www.ncirs.edu.au.

How do I get a copy?

- View it online at: www.immunise.health.gov.au – includes electronic, pdf and word versions.
- You can order hard copies from:
National Mail and Marketing
PO Box 7077 CANBERRA BC ACT 2610
Phone 02 6269 1070
Email nmm@nationalmailing.com.au
- Your local public health unit may also have a small supply of copies available.

Question Box

Do any clinics complete psychiatric assessment on MDRTB patient's pre-treatment commencement? Please share your experiences and return email to the editors.

Staff Member Profile

By: Flora Van Der Heide
Area TB Coordinator, Sydney Local Health District
(formerly Sydney South West Area Health Service, Eastern Zone & former to that Central Sydney Area Health Service)



Family:

- First generation Australian – Tongan mother & Dutch father
- 3 younger sisters & 1 younger “step” brother (my cousin – Tongans often unofficially adopt relatives)
- In de-facto relationship of 29 years with 10 year old daughter & 4 year old IVF son

Education:

- Diploma of Nursing, University of Technology Sydney (UTS) 1989
- Graduate Diploma Nursing Management, UTS 1997

Employment:

My first chest clinic exposure was at Royal North Shore Hospital 1994 as reliever & I learnt the hard way that you should not send contact tracing letters over the Christmas / New Year period when clinics are closed. I later took on the permanent chest clinic position which I held for almost 2 years before I decided to adventure overseas.

On my return from overseas in 1996, I worked on the casual pool at Manly Hospital & did my first brief relieving at Manly chest clinic. On one of my subsequent secondments in 2003, I was urgently called upon by nursing admin to assist with development of a contact screening risk management plan for SARS exposure due to a suspected case in emergency (usual story....Friday afternoon!).

I then took on a permanent position 1998 in the Hornsby Hospital chest clinic where I completed my TB apprenticeship under the excellent tutelage of Jo Griffin. Her mentorship allowed me to grow in chest clinic by allowing me to try my hand at everything possible in order to keep my interest & to develop my professional knowledge & skills. Some of the activities that I undertook while working with Jo include:

- 1998 – Brief secondment to Liverpool chest clinic to assist with screening of the Kosova Refugees
- 1999 – Brief secondment to Justice Health to assist with Long Bay inmate screening for census study
- 2000 – 12 month secondment to Gosford Hospital as Acting CNC

I took up my current permanent CNC position in 2005 with a pretty easy transition thanks to my experience with Jo. My new job was infinitely pleasurable also due to the wonderful friendship of Bridget Hales who took me under her wing & taught me the ways of “Central Sydney”. The clientele was notably different to those of my Northern Sydney experience. There was also a vast contrast in socio-economic background in Central Sydney.

I have had some very challenging patients since I took this job. The common issues that have made them difficult have been Drug & Alcohol related and Mental Health related. I expect that we will see more & more of these patients over time due to the lifestyle choices of the 21st century. I enjoy my job immensely & expect that I will be here for another 20 years (unless I win the lotto!).

I have the pleasure of working with great chest clinic staff that are very experienced & team oriented people:

- COMMUNITY: Brett Ginty (RN)
- RPAH: Phin Wong (CNS), Lutchie Martinez (CNS) , Sonia (clerical) & Fatima (clerical)
- CANTERBURY: Denise Frakes (CNS)
- CONCORD: Emmanuel Lagaac (CNS)

Social:

My obsession is softball. I have played & coached softball for 20 years. I have been President of my softball club for about 15 years. Between children, I have been on & off the Association softball committee for 12 years. I have been coaching Representative / Development under 13 softball for 3 years now. I have just taken up the position of Association Secretary.

I have just taken up coaching under 10 club netball coaching. I have not played for over 15 years & am very rusty on the rules. So far I am enjoying it & surprised & how much I still know.

It won't be long before my kids will want to get into social media. So I'm trying to make facebook & twitter my friend. I'm learning that instagram & kik are apps (applications) that my kids are already using. My new mantra – “I must keep up with technology”. **Note:** my kids love my new laptop so much that I just about never get to use it... didn't think that through very well!

Report: Woolcock Institute of Medical Research TB Control Symposium 2 May 2013

By: Anmaree Nichols

I was lucky enough to attend the 2 days of the Woolcock symposium and at times I was bamboozled by the science. In the following I have tried to capture the gist of each speaker.

The morning was off to a great start with an over view of progress in Vietnam by Guy Marks. Collaborative TB research continues, along with capacity building through education and training. The capacity building programs are establishing respect for evidence, how to collect robust evidence and how to use the evidence operationally to develop sound health policy. Some of the research is looking at the effectiveness of active case finding in contacts of patients with smear positive pulmonary TB. Research design is Random Control Trial (RCT) and cluster RCT. The aim is to look not only at clinical effectiveness of contact tracing but also cost analysis and factors that affect effectiveness. The intervention is screening households at baseline, 6 mths, 12, and 24 mths. There is also some research on genetic susceptibility to TB. Case control studies looking at collecting DNA, sounds very interesting, and stay tuned.

Nick West spoke about research revealing Anti TB targets with functional genomics. Genomics is the study of the genomes of organisms. The field includes intensive efforts to determine the entire DNA sequence of organisms and fine-scale genetic mapping efforts. Functional genomics includes transcriptional profiling, mRNA analysis, microRNA analysis, and analysis of noncoding and other RNAs using established and newly-emerging technologies (such as digital gene expression). So Nick and team are looking for anti TB targets by studying genes and their actions in TB disease and Latency. The aim is to learn about possible areas to target therapeutic agents. The secret may lie in targeting regular genes and not single gene mutation that lead to resistance. The team has been looking at host plasminogen response as MTB binds human plasminogen on the cell surface. Understanding how this works may allow better drug penetration. Unfortunately MTB will not bind with mouse plasminogen and this hampers research. So the quest continues.

Manuela Florida's research; Influenza A infection impairs mycobacteria specific T cell responses and mycobacterial clearance. Co infection increases lung pathology and is associated with delayed mycobacteria clearance from the lungs in mice. The study used BCG and demonstrated impaired BCG specific CD8 T cell response and CD4 proliferation thereby delaying the clearance of the bacteria. Picking up any themes yet?

Grant Hill-Cawthorn; The use of genomics for TB control. The sequencing of MTB allows better understanding of disease patterns and guides TB program development. Sequencing of TB has lead to phylogeny (the study of relationships among groups of organisms e.g.species, populations) and mapping of global distribution of clades, mutations and compensatory mutations of DRTB. Genomics is useful in outbreak investigation, understanding of ancestral lineages and drug susceptibility testing.

Alex Outhred, extending the genomics theme, spoke about an XDRTB case in NSW and insights gained from whole genome sequencing. Alex presented an outline of the case which included 2 years in hospital following a complicated history of TB treatment and social upheaval due to war. Alex presented the lineage of MTB, genetic variants associated with phenotypic resistance to first and second line antibiotics and the genetic difference between 2 isolates collected from the case 58 weeks apart, cumulating in the plans for future research.

Claudio Counoupas's topic was potential new vaccines for TB...now this got me excited. Don't hold your breath nothing on the immediate horizon. While there has been an explosion of vaccine development and a handful of candidates now in clinical trials nothing outstanding is yet to surface. BCG is not effective against TB disease or reactivation of LTBI. BCG has efficacy of 0% up to 70% in neonatal severe forms, has many different antigen targets and is not effective against pulmonary disease in adults. But research continues in "mice".

Anneliese Tyne, PHD student, presented research titled; TLR2 targeted secreted proteins from MTB are protective as powdered pulmonary vaccines. Again research in mice but there is potential. The most interesting aspect of this research was the delivery of the vaccine. Dry powder delivered directly to the lungs as an aerosolized product which was associated with the production of IFN- γ by antigen specific T-lymphocytes and specific IgG. A localised delivery with a systemic response.

Jennifer Ho; Phenotypically occult MDR MTB-dilemmas in diagnosis and treatment. This research was looking at the limited knowledge about the clinical significance of MTB isolates that contain rpoB mutations (genotypic resistance but phenotypic susceptible to rifampicin(RIF)). The study looked at low level rifampicin resistance and poorer treatment outcomes with standard dosing of RIF based regimens. The Answer was to increase the current standard 600mg dose but issues were possible increased side effects. Currently phenotypic DST

methods are not detecting this low level resistance patterns and there is a need to modify the current DST algorithm and for consideration of higher RIF dosage.

Ulzjargal Gurjav: Molecular Epidemiology of MTB. Final outcome was that the frequency of East African Indian and Central Asian lineages have increased up to 28.7% and 12.7% respectively while the proportion of Beijing lineage (28.2%) has not significantly changed in NSW. Mycobacterial interspersed repetitive unit-variable tandem repeat analysis (MIRU-VNTR) was applied to examine population dynamics and cluster rates of MTB in NSW in culture confirmed cases identified in 2010, 2011 and 2012.

Lunch, my head was spinning and I was feeling very sorry for black mice.

Now after lunch, my favourite topics Law and Ethical issues in TB control. This section will raise more questions than answers but I encourage you all to start the conversation, as nurses we are a very integral part of the ethics and law in TB control.

Michael Selegid; Ethics and TB: Introduction and **Terrain mapping**.

So what is all the fuss about? Public Health ethics associated with infectious disease is a topic not often discussed. How do we balance the rights of the individuals and the rights of the community in relation to infectious disease and transmission?

Individuals have an obligation to avoid infecting others and a right to refuse treatment. Health care workers have an obligation to treat but do no harm, advocate for their patient yet protect the community. What are the limits?

As a health care worker you have the right to be protected and work in a safe environment. Research needs to establish good standards of care for health professionals to follow and there needs to be robust evidence of the effectiveness of interventions and treatments. What happens in the case of MDRTB and 2nd line drugs?

What about disease surveillance and the collecting of data and reporting of data?

Informed consent what does this mean and do we practice this effectively? This could be said of many parts of TB control not just in data collection.

What are the risks to privacy in relation to surveillance and confinement?

What are the technical differences between research and surveillance?

What are the moral differences between research and surveillance?

What principals should guide surveillance?

Third party notification V confidentiality V public health, do you think about this?

Standards of care...heard that before.

So many questions and no Michael did not give the answers re-examine the title of his talk..... terrain mapping. So think about these issues. They affect how we operate every day. Do we have an Australian National standard of care for TB patients?

Migrant screening; freedom of movement V public health, is there unjust discrimination? Public health importance and cost effectiveness, what is the evidence for the screening programs conducted? What is the evidence for what we do for health care worker screening? What are we trying to achieve and is it cost effective?

Treatment exclusion; are patients unreliable? What does non adherence mean? Again do we practice discrimination in relation to treatment and DOTs? Health care workers professional obligation to the patient is paramount but do we practice this in relation to TB treatment? Do we create independence or dependence with the patients? Consider how benefits to society should be weighed against harm to individuals.

Coercive social distancing/isolation/quarantine. Confinement if patients refuse treatment? XDRTB confinement for life if untreatable?? Evidence for efficacy? Further research? How much evidence is needed? The questions keep coming. We need to strike a balance between protections of individual rights V public health. Compensation?? Is that a word we use in TB control in Australia?? Mandatory treatment and ethical issues with DOTs V voluntary treatment and informed consent. Now this is interesting heard about this before. How to manage privacy and stigma and discrimination. Do we as health professionals perpetuate that stigma? Informed consent to testing??? Are patients fully aware of the entire possible outcomes?

Finally Michael spoke briefly about global justice; access to care, availability to new drugs and diagnosis, distribution of research resources, alternative incentive schemes, global solidarity. There is a lot to think about.

Lyn Gilbert; ethical implications of new technology for TB surveillance.

The theme extended in regards to ethics but looking at technology and testing. Evaluation is often delayed and limited in regards to new tests. To be effective there needs to be a review of the pathology data and clinical data to determine patient outcomes and this at present is poorly done. For example drug resistance cutoffs are collaborated poorly against clinical outcomes. Whole gene sequencing will soon replace all forms of identification and drug susceptibility testing but not as yet applied to all specimens. This has consequences for

local and global surveillance needs, databases, software, algorithms, analysis, accessibility and political resolve for data sharing. Are changes in technology translating into better clinical outcomes, management and disease control?

New methods provide unprecedented detail about people, their movements, contacts and compliance. Have we ethically and legislatively caught up with these advancements? Do people fully understand the implications when they provide that specimen? Computers have allowed rapid communication but all the systems are still isolated and what is really needed is real time systems data and evaluation. This of course depends on fully integrated systems. What are the risks and have we developed risk management plans? The risks are multiple, privacy, uncoordinated data systems, costs and data security. Ethics need to consider patient issues but not inhibit cross jurisdictional data sharing, therefore we need to define access and sharing and enforce ethical standards. The implications of not getting this right are failure to optimize patient care and public health. The promise would be improved patient outcomes, good public health control and better disease understanding through good epidemiological analysis.

Belinda Bennett a lawyer discussed legal issues in TB control. Belinda spoke from a lawyer's perspective regarding the treatment of the individual patient and non compliance continuing the theme between human rights and health. Presented an overview of the history of quarantine and the issues in relation to human rights, suggesting an article Battin et al; The patient as a victim and vector. A reoccurring theme in the rights of individuals V the rights of the community in relation to infectious disease and restricting movement by isolation, when should we use detention or isolation? Belinda spoke about the public health law in Australia, is it of assistance or a hindrance and is it consistently applied across jurisdictions? In the context of TB control, what is meant by least restrictive and how can we ensure that our control measures do not have a discriminatory impact.

Justin Denholm: Preventative therapy: for individual or the community. I'm sure you all have this discussion regularly when testing health care workers who turn out to be indicative of LTBI. Do we treat? Who benefits from the treatment? Treat the patient to protect others. There needs to be informed consent in relation to risk and benefits. Absolute risk V relative risk needs to be carefully discussed.

So there ends Day 1! There is a lot of interesting research happening but there are a lot more questions we still need to answer. You will have to get next issue to find out what happened on Day 2.

TB Research / Projects of Interest received to date

TOPIC	AUTHOR / LEAD	Collaboration
Quality-assurance review of data over a 3 year period using QuantiFERON TB-Gold test by the Victorian TB team as an adjunct for the diagnosis of latent TB infection in contacts	Karen Goebel, PHN Victoria	
Is there a need for TB screening of HCWs in low prevalence country	Carmel Cochrane, Brisbane	
Development of a national database for TB brochures/fact sheets and consents: Handed over to the Department of Health to follow-up through NTAC i.e. Remove from this table	Carmel Cochrane, Brisbane	A. Nichols
Assessment of nurse-led TB-related assessment clinics	Carmel Cochrane, Brisbane	A. Nichols
Outcomes of molecular epidemiological typing for Qld notified cases 2002- 2011: Handed over to the Department of Health i.e. remove from this table	Carmel Cochrane, Brisbane	CHRISP/TB
Development of a standardized National TB Nursing Training Package	National working group be developed	C. Cochrane ?Others
TB models of Care across Australia: a descriptive analysis	Annemaree Nichols	?Others interested
DOTs Programs: nurses understanding of DOTs, delivery of DOTs	Annemaree Nichols	C. Cochrane ?Others