

# DTT Project



Annual Report



Compiled by the TB Program Evaluation & Research Unit, University of Alberta

# DTT PROJECT

## Annual Report

**DTT Project Annual Report**  
**Year 4: 2009-2010**  
**Compiled by TB PE&RU, University of Alberta**



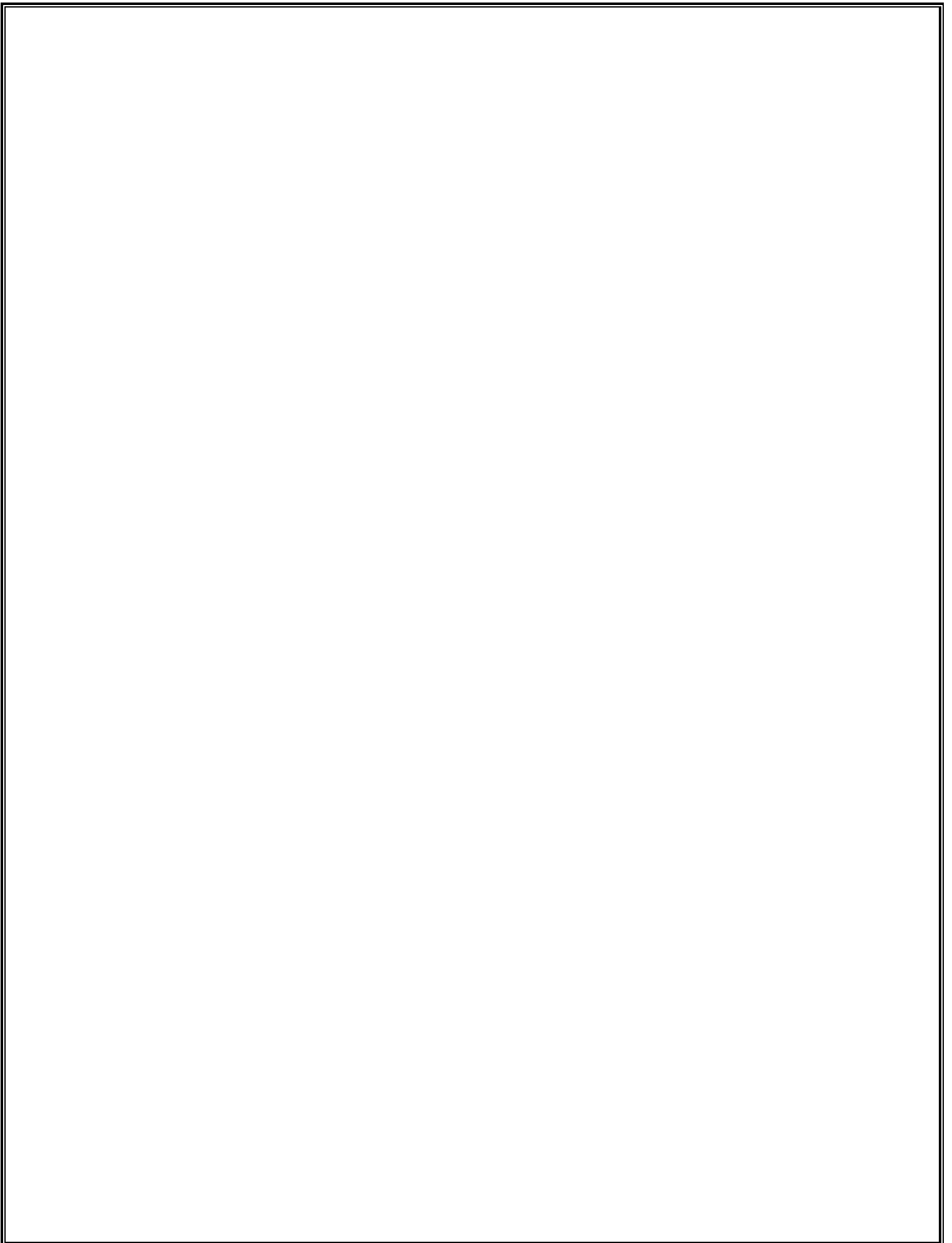
UNIVERSITY OF  
**ALBERTA**



UNIVERSITY OF  
**SASKATCHEWAN**



UNIVERSITY  
OF **MANITOBA**



# Introduction

The CIHR/Health Canada-funded Determinants of TB Transmission (DTT) Project has recently completed its fourth of seven years. The recruitment period, from January 1, 2007 to December 31<sup>st</sup>, 2008 has concluded, though there remain a few potential participants meeting our inclusion criteria, from whom we would like to collect data. Registry and genotype data gathering will continue for the remainder of the fingerprint window, which ends December 31, 2010.

Approvals from each participating university's ethics boards have been obtained annually and institutional approvals have been submitted and received across all participating provinces.

New staff and trainees have been welcomed in the last year. Network Committees provided feedback and support to the team. Study coordinators have continued to invoke awareness of and support for the project, and recruitment estimates are on track. Preliminary findings are now available for Objective 1 of the project, and meetings have helped to develop further lines of inquiry for Objective 2 (See text box below for project objectives).

## DTT Project Objectives

### **Objective 1:**

To characterize the occurrence and spread of particularly virulent strains of TB in order to understand the potential role of clinical and environmental determinants of TB transmission through the retrospective analysis of all culture-positive TB cases in Alberta from 1990-2007

### **Objective 2:**

To prospectively identify determinants of TB transmission on the prairies, with emphasis on Aboriginal people, through the use of structured and semi-structured interviews and DNA fingerprinting of TB case isolates to capture all transmission events leading to early disease

# Summary to Date

## ***STUDY OVERVIEW***

Year 4 of the project has extended the fundamental goals that were planned for year 3 and demonstrates the shift from recruitment and data collection to the next phase which seeks to address our primary objectives, through coding, analysis and dissemination.

## ***RECRUITMENT***

<b>Province</b>	<b>Instrument</b>		
	<b>Questionnaire</b>		<b>Interview</b>
	<b>Eligible</b>	<b>Completed</b>	<b>Completed (Aboriginal)</b>
MB	125	79	18
SK	90	76	23
AB	37	32	14
Total	252	187	55

## ***TB REGISTRY DATA ABSTRACTION AGREEMENTS***

Agreements between provincial governments, universities and study investigators have been settled in Manitoba, Alberta and Saskatchewan.

## ***RESEARCH AGREEMENTS***

Agreements regarding registry access between the University of Alberta and Manitoba Health and Healthy Living (MHHL), as well as sub-contracts between the UofA with the UofM and the UofS as detailed in the agreement have been agreed upon and are now underway. Discussions with the Health Information and Privacy Committee (HIPC), part of MHHL, have been successful and a positive working relationship established.

## ***STUDY TEAM***

The study team, consisting of seven investigators, four full time research staff, and numerous collaborators, continues to coalesce and is more dedicated than ever.

New to the study team is Courtney Heffernan. Courtney is the Manager of the DTT Project and is the Alberta co-ordinator. Courtney studied Health Policy at the University of Alberta. Further

to this, she has a Master's degree in Philosophy from the University of Waterloo and a Bachelor of Arts degree in Philosophy and Fine Arts from the University of Windsor. She has a special interest in Health Policy and Harm Reduction, particularly as they pertain to marginalized populations. Courtney's background is in decision-making, rationality and the study of health policy. Her plans are to one day complete her PhD in Health Science, focusing on addiction and on expanding the role of harm reduction interventions in determining health and quality of life. In the interim, she is focusing on course work in Native studies.

## **Trainees**

The project benefits from the accomplishments and contribution of its trainees.

Deanne Langlois-Klassen is currently a PhD Candidate in the Department of Public Health Sciences, University of Alberta. Although Deanne started her professional career as a Physical Therapist (BScPT, University of Alberta, 1992), her increasing awareness of global health inequities led her to a MSc in Medical Sciences (Public Health Sciences – Population Health) at the University of Alberta in 2005. Deanne's MSc research, based on HIV/AIDS fieldwork in rural Uganda, led to publications in the American Journal of Tropical Medicine and Hygiene as well as Social Science and Medicine. It also intensified her interest in M. tuberculosis given the high incidence of HIV-TB co-infections in Uganda and elsewhere. Deanne is excited to be pursuing her research interests within a Canadian context through the Determinants of Tuberculosis Transmission (DTT) project. Her component of the DTT project involves an investigation of the potential importation and spread of the Beijing/W family of M. tuberculosis strains in Alberta, with a particular focus on Canadian-born Aboriginal persons. Deanne's research is supported by a Canadian Institutes of Health Research (CIHR) Frederick Banting and Charles Best Canada Graduate Scholarship – Doctoral Award, the President's Doctoral Prize of Distinction (University of Alberta), and the Andrew Stewart Memorial Graduate Prize (University of Alberta).

Jessica Moffatt is a PhD student who comes to us from McMaster University where she completed her undergraduate degree in Health Studies. She recently transferred from an MSc in Public Health to a PhD in Pulmonary Medicine. She was a recipient of a Western Regional Training Centre for Health Studies award for Master's students. She is undertaking the Community Based Research project that arose out of the DTT project. Community Based Research can be generally defined as research that strives to be community situated, collaborative and action-oriented; as such her work will identify existing community strengths and foster an exchange of ideas to arrive at TB prevention and control strategies and recommendations that are of mutual benefit to the community and the program. This project involves five University of Alberta Faculty members, one Elder, one First Nations Inuit Health Branch staff member and a coordinator to advise on the project. Two community co-investigators have been recruited into the project to work alongside Jessica to ensure the project remains culturally congruent. Funding for these positions have been secured through AHFMR. Funding has also been provided from Public Health Agency of Canada, First Nations and Inuit Health and the Network Environments for Aboriginal Health Research.

Marie Varughese (Betsy) is a first year PhD student (Applied Mathematics/Public Health) at the University of Alberta. Her research interests include applying mathematical models in Epidemiology, Aboriginal health, food- and waterborne diseases, and qualitative and quantitative methodology. She will be working on constructing mathematical models from results gathered by the Determinants of Tuberculosis Transmission project (DTT). Betsy has completed her Master's degree in Epidemiology at the University of Guelph in 2009, which involved describing food and water consumption patterns, and the occurrence of acute gastrointestinal illness in a Northwestern Ontario First Nations community. Her employment, first as a co-op student and then as a part-time research assistant, for eight years by the Antimicrobial Resistance Surveillance Unit (AMRSU), Public Health Agency of Canada has allowed her to gain knowledge and experience in the Epidemiology field. Betsy hopes to gain an in-depth understanding of Applied Mathematics and Public Health. This will allow her to describe the dynamics of Tuberculosis (TB) transmission and to determine efficacy of current intervention strategies (and/or develop innovative intervention strategies) that can reduce the incidence of TB in Canada.

Jessica Grant is 2nd year Master's Student from the University of Saskatchewan. Her project is a mixed-method study examining tuberculosis transmission on the Canadian Prairies. She is travelling to New Zealand in the Fall of 2010 for a secondary research project that will compare the experience of tuberculosis transmission between the Indigenous Populations of New Zealand and Canada. She received funding from CIHR for the 2009-2010 year and has received funding from the Indigenous Peoples' Health Research Centre for 2010-2011. She hopes to complete her Master's thesis in Summer 2011.

The study team will be advertising for a database manager in the next couple of months. In addition, two summer students have been hired; (1) Angela Lau who is funded by an AHFMR Summer Studentship and (2) Michael Jensen, also funded by AHFMR Summer Studentship. Angela will assist in consolidation of the DNA fingerprint database and the completion of a related transmission project, "The Public Health Consequences of Smear-positive Pulmonary Tuberculosis in Patients with Typical and Atypical Chest Radiographs" she recently has been participated in the "Rising Stars of Research" conference in Vancouver, BC August 18-21<sup>st</sup>, where she won the most outstanding research poster award in the health sciences division. Michael will assist in construction of population grids for use as denominators in incidence and other calculations. He has been working hard to calculate the TB rates in Alberta over the last 20 years. The students' work will provide invaluable support and enhancements to the overall objectives and goals of the DTT project.

## ***PROVINCIAL NETWORK COMMITTEES***

In this fourth Annual Report, it is important to reiterate the significant role that the Provincial Network Committees play in the DTT project. The Committees' role, although less in the data-gathering phase of the study, is essential to ensuring that the study continues to honour the principles of consultation with the Aboriginal community at large. As stated in the first annual report, the role of the Network Committees is to ensure ongoing feedback and appropriate conduct throughout the study.

Meetings with the Provincial Network Committees in all participating provinces were held over the past year. As the recruitment period ended in December of 2008, these meetings provided an opportunity to provide very preliminary numbers of participants in the project. Updated information on the status and the work to date with the project were shared with all members. These updates allow for the committee members to ask questions or clarify information. Further, it allowed for discussion regarding all aspects of the project. Finally, these meetings continue to provide an opportunity for the study coordinators to bring forward any concerns they may have encountered. Alberta held their 2010 PNC meeting on August 13, 2010 in Edmonton, Alberta attendance was high for a last minute scheduled event during the summer and the feedback was very positive.

A Prairie-Wide Provincial Network Committee meeting that would bring together all PNC member from across the provinces was to be held May 2010 but due to some unforeseen circumstances it had to be postponed and is now tentatively scheduled for May 5<sup>th</sup> and 6<sup>th</sup> of 2011. As the project draws nearer to dissemination it is increasingly important to gain feedback and approval from the PNC members.

In Alberta, a related project, the Community Based Research project, was discussed and members gave feedback on community selection criteria. Another related project – the development of a TB-specific curriculum - was also discussed and the PNC members were extremely enthusiastic about its development.



## ***STUDY AWARENESS***

Study awareness continues to be an important aspect of the project to ensure that community stakeholders and associated health staff are conscious of and supportive of the project. Study awareness activities and relationship building continued throughout the year. Study Coordinators work diligently to stay in touch with service providers, Aboriginal organizations and leadership, funding agencies and federal and provincial prevention and control programs.

Here are some recent updates:

### **Manitoba:**

A poster presentation on the project was presented at the International Union Against Tuberculosis and Lung Disease – North American Region conference in Vancouver, February 2009; -*A Prairie-wide Approach to the Study of TB Transmission in Canada*. Currently only the Saskatchewan and Alberta study coordinators are working as there were some minor hold ups in Manitoba which prevented our study team from working in or with Manitoba Health and Healthy Living. They have since been sorted out.

### **Saskatchewan:**

Saskatchewan benefits from the existence of mobile clinics in First Nations and Métis communities. Their presence allows the study coordinator an opportunity to visit and speak with service providers, TB clients and community leaders directly.

### **Alberta:**

The ongoing connection with stakeholders remains strong with the Principal Investigator's involvement at the Edmonton TB Clinic, his clinical commitments with Alberta Health and Wellness/First Nations and Inuit Health and his presence in the Pulmonary division, Department of Medicine.

## ***LABORATORY DATA***

During the past year, the laboratory component of the Beijing/W study was completed, with 1,897 of 1,925 *M. tuberculosis* isolates being successfully genotyped. In order to verify the accuracy of the genotyping results, a subset of 136 isolates were also subjected to secondary genotyping at an external laboratory, with excellent correlation in Beijing/W status being noted. Only 20 Beijing/W cases during the study period (1990 to mid-2007) were identified within the Canadian-born population (5 of which involved Status Indians). Apart from foreign-born persons from the WHO's Western Pacific region, initial analysis suggests no significant differences in the epidemiology or clinical characteristics of Beijing/W strains. More comprehensive data analysis will be completed within the next year to confirm these results and to determine the transmission indices associated with Beijing/W strains within and between Alberta's subpopulations. In the past year, the preliminary study findings were presented at the 14th International Congress on Infectious Diseases (Miami, USA) and at the Alberta Respiratory Disease Symposium (Banff, Canada). Within the next 18 months, study results will also be disseminated through presentations at the European Respiratory Disease Annual Congress (Barcelona, Spain, September 2010) and the 41st Union World Congress on Lung Health (Berlin, Germany, November 2010). It is also anticipated that 3-4 manuscripts will be submitted to relevant international, peer-reviewed journals within the next 18 months.

## ***UPCOMING PLANS***

The fourth year of the DTT project met expectations thanks to the hard work of the research team and the guidance of the Provincial Network Committees and collaborators. Year five of the DTT project promises similar levels of achievement, with a continued focus on data analysis for all aspects under study.

There are plans to bring all three Committees together for a group meeting in May 2011. This will provide a valuable opportunity for interaction across all the participating provinces' stakeholders and research staff. Further, plans for a potential Project Conference in 2011 would bring together a larger group of service providers, funding agencies, PNC members and national/provincial prevention and control programs. This would coincide with the final stages of dissemination and study completion.

Longer term goals include the interest in developing a Prairie-wide lay organization for the control of TB among the Aboriginal population and in developing a set of knowledge sharing workshops with Indigenous peoples in New Zealand along with collaborators at the University of Auckland. We also anticipate the involvement of additional trainees down the road.



**CIHR IRSC**  
Canadian Institutes of Health Research  
Instituts de recherche en santé du Canada



**Health Canada** **Santé Canada**