

What's Blowing in the Wind? Tuberculosis and Long Term Care

Ruth Anne Appl, TB Control Saskatchewan, Saskatoon

Broadcast live from the 2012 CHICA-Canada Conference

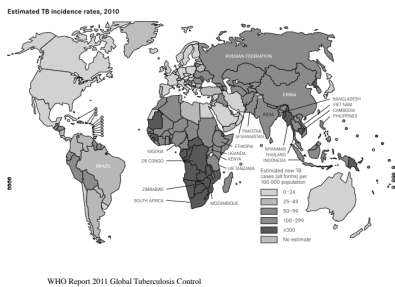
Active Disease vs Latent TB Infection

- If the immune system is healthy and the granulomas can contain the bacteria (remain dormant), this results in Latent TB Infection (LTBI)
- If the granuloma cannot contain the bacteria, they escape, replicate and spread occurs leading to active disease

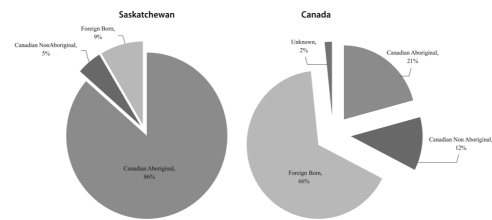
Active Disease vs Latent TB Infection

- 10% lifetime risk of disease in individuals with a healthy immune system
 - 5% - primary disease < 2 years
 - 5% - post primary disease > 2 years

Estimated TB Incidence Rates 2010



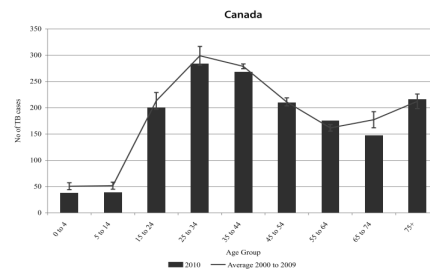
TB Cases Saskatchewan and Canada 2010



Incidence of Active Disease in Canada 2010

Highlights	Rate
1,577 new active and retreatment cases	4.6/100,000
25-34 age group comprised 18% of cases	6.0/100,000
74 and up age group	9.6/100,000

TB Cases by Age Canada 2010



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Risk Factors for the Development of Active TB among Persons with LTBI

- Canadian Tuberculosis Standards 6th Edition identifies three categories of risk
 - High
 - Increased
 - Low

High Risk

Risk Factors	Estimated Risk of Active TB
AIDS	110-170
HIV	50-110
Transplantation related to immunosuppressant drugs	20-74
Silicosis	30
Chronic Renal Failure - Hemodialysis	10-25
Carcinoma of Head and Neck	16
Recent TB infection ≤ 2 years	15
Fibronodular Disease on Chest X-Ray	6-19

Increased Risk

Risk Factors	Estimated Risk of Active TB
Treatment with glucocorticoids	4.9
Tumor Necrosis factor (TNF) – alpha inhibitors	1.5-4
Diabetes mellitus (all types)	2.0-3.6
Underweight (< 90%)	2-3
0-4 years of age	2.2-5.0
Cigarette smoker (1 pack/day)	2-3
Granuloma on Chest X-Ray	2

Low Risk

Risk Factors	Estimated Risk of Active TB
Infected person, no known risk factors, normal chest x-ray	1

- Determinants of Transmission of Disease**
1. Susceptibility of those exposed
 2. Contagiousness of the patient
 3. Infectivity of the strain
 4. Extent of exposure – duration, frequency, intensity
 5. Environment – air circulation, ventilation, proximity to the source

- Preventing Transmission in Long Term Care**
- Residents
 - Baseline chest x-ray on acceptance into LTC
 - Baseline two-step Tuberculin Skin Test not warranted unless the population the institution serves is at high risk i.e. from high incidence country or high incidence aboriginal community, former urban poor, HIV positive

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Residents continued

- Annual or serial TST not necessary
- Assessment for history of TB treatment or contact

Preventing Transmission in Long Term Care

- Health Care Workers and Volunteers
 - TB infection control policies in place
 - Two-step TST at time of hire if TST negative or status unknown
 - Annual screening depends on the occurrence of TST conversion - can be discontinued if conversion rate < 0.5%

Health Care Workers and Volunteers continued

- N95 Respirator masks
- Education of staff
- Report any symptoms suggesting TB

Clinical Presentation of Active Disease

1. **Cough – persistent, unremitting, ≥ 3 weeks duration,**
 2. **Fever ≥ 7 days**
 3. **Pneumonia unresponsive to antibiotics**
- Symptoms of hemoptysis, night sweats, weight loss, anorexia, fatigue are seen in more advanced stages of disease
 - Extra-pulmonary symptoms
 - Presentation may be masked by existing co-morbid conditions

Management of Reactivated LTBI

- Referral to TB Control program
- Transfer infectious cases to negative pressure isolation room
- Investigations – specimens, x-ray
- Symptom inquiry, physical assessment
- Chemotherapy by Directly Observed Therapy (DOT) or Directly Observed Prophylaxis (DOP)
- Contact Trace to determine spread

Case Study Presentation

- Gentleman in late 70's admitted to hospital with decreased LOC, possible sepsis, possible GI Bleed (Hgb 89), fever, and probable aspiration pneumonia
- Several underlying health issues including COPD and dementia
- Had been in 2 LTC facilities in the previous 14 months

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- Too ill to give history, no family and limited documentation
- Started on antibiotics for aspiration pneumonia
- ID saw and requested sputums for AFB
- Placed in negative pressure isolation
- Chest X-Ray – Bilateral airspace changes, consolidation RUL, right hilar mass

- Chest x-ray 3 years previously - no evidence of disease
- 1 year prior to this admission TST of 25 mm and chest x-ray showed RUL volume loss with airspace changes and pleural thickening. No documentation that sputums sent for AFB
- CT scan 3 days post admission showed dense consolidation RUL with a cavitating mass RUL and pleural thickening

- Sputum results
 - 1st - smear negative (5 days)
 - 2nd - 6 AFB in cords (7 days)
 - 3rd - 3+ (12 days)
- TB Control consulted, TB meds started
- Patient's condition worsened he expired 2 weeks later

- Contact Trace**
- Trace yielded 131 contacts
 - Residents - 20
 - Staff - 111
 - TST status
 - Negatives - 69
 - Positives - 50
 - Unknown - 12

Contacts by Age Group

Age Group	Contacts
20 to 29	25
30 to 39	24
40 to 49	21
50 to 59	32
60 to 69	20
70 +	8
Unknown	1
Total	131

- Outcomes**
- TST Conversions -12
 - 11 were seen in clinic
 - 1 did not attend
 - Prophylaxis - 1
 - Active cases - 0
 - No children were part of the contact trace

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Location of Contacts

City of Dx	TST Negative	TST Positive	Unknown	Total
Community 1	1			1
Community 2	1			1
Community 3	1			1
Community 4	1			1
Community 5		1		1
Community 6	1	1		2
Out of province		1		1
Saskatoon	64	47	12	123
Total	69	50	12	131

References

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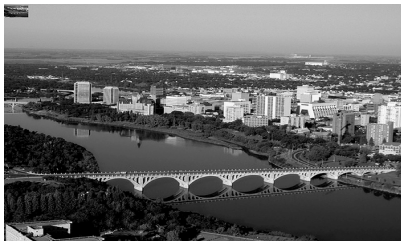
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QUESTIONS?



The screenshot shows the CHICA-Canada website homepage. At the top, there are navigation links for CHICA Home, Quick Links to..., CHICA CHAT, and Members Area. The main header features the CHICA-Canada logo and the website URL www.chica.org. Below the header, there are several sections: 'About Us', 'News and Features', 'Conferences and Education', 'Opportunities', 'Inside CHICA', and 'Links and Resources'. A central banner reads 'Welcome to CHICA-Canada' and describes the organization as a national, multidisciplinary association committed to the wellness and safety of Canadians. To the right, there are 'News Headlines' including 'Association Name Change DISCUSSION BOARD' and 'Perinatology Best Practices from PIDAC'. At the bottom, there are sections for 'Knowledge Resources', 'Professional Resources', and '2012 Conference', which includes a call for applications for the 2012 National Education Conference.



- 11 July (Free WHO Teleclass ... Europe) **Patient Involvement in Infection Control – What Does it Mean and How Can We Support It?**
Speaker: Claire Kilpatrick, World Health Organisation
Sponsored by WHO First Global Patient Safety Challenge – Clean Care is Safer Care
- 19 July (Free Teleclass) **Top 10 Must-Do's for the Elimination of Hospital-Associated Infections**
Speaker: Dr. William Jarvis, Jason and Jarvis Associates
Teleclass sponsored by GOJO (www.gojo.com)
- 26 July (Free Teleclass) **Pneumonia Prevention – The Vent and Beyond**
Speaker: Kathleen M. Vollman, Advancing Nursing LLC
Teleclass sponsored by Sage Products Inc (www.sageproducts.com)
- 8 August (Free WHO Teleclass ... Europe) **Processing Medical Devices in Settings With Limited Resources**
Speaker: Dr. Nizam Damani, Craigavon Area Hospital, Northern Ireland

www.webbertraining.com/schedule1.php

A Webber Training Teleclass
www.webbertraining.com