TB AMONG THE HOMELESS
IN TORONTO

TB ANYWHERE IS TB EVERYWHERE

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Major causes of death in Canada in 1926, and in 1990. Tuberculosis accounts for 7% of deaths in 1926, and less than 1% in 1990--included under "infectious diseases"
WHO HAS TB IN CANADA?

- http://www.lung.ca

Pie chart showing the distribution of TB cases in Canada.

- Foreign-born: 63%
- Canadian-born Non-aboriginal: 20%
- Canadian-born Aboriginal: 16%
- Unknown: 2%
There are 65 permanent shelters in Toronto. The City of Toronto operates some of these facilities while community and/or faith groups operate others.

- **Emergency shelters**: for shorter-term stay of homeless individuals
- **Transitional shelters**: for longer-term stay -- as a “bridge” between emergency shelter and permanent housing
- **Temporary facilities**: Occasionally set up to meet immediate urgent needs (intended for longer-term stay of homeless)

Shelters accommodate a range of individuals including single men, single women, co-ed adults, families and youth

The facilities range in size from 10 beds to 545 beds.
TUBERCULOSIS IN TORONTO
SHELTERS & TB

- Most of the TB in Toronto comes through new immigrants
- 1 in 6 TB cases has a TB strain resistant to at least one 1st drug (commonly INH)
- The shelter system is the other major route:
  - Overcrowding
  - Closed environment
  - Large migrant population
  - Large prison population
  - Large native population

“...39 per cent of families in the city’s family shelter were refugees in 2008” Toronto Star, April 17, 2010

“Though they make up just 1% of the city’s population, aboriginal people were 29% of the homeless people” Toronto Star, April 17, 2010
The homeless are also more likely to acquire TB for the following reasons:

- poor access to health care delaying diagnosis of TB and treatment
  - No ID, no OHIP Benefits
  - Mental health and hygiene issues (smell, throw up in clinics)
  - No address

- Poor nutrition

- alcohol and drug use – majority multi-drug users

- underlying medical conditions e.g. HIV, psychological stress

- poor adherence to follow-up visits and prescribed treatment for TB infection
Mike (the knife) Harris and his “Common Sense Revolution” (inspired by Reagan and Thatcher)

- Massive funding cutbacks, especially for those on welfare and disability plans,
- Massive downsizing in government and healthcare
- Dismantled programs that had taken ages to build

Corresponding strong response from community:

- Ontario Coalition Against Poverty (OCAP)
- The Toronto Disaster Committee (TDC)
- The Illicit Drug Users Union of Toronto (iDUUT, Pronounced I Do It) Note: by the time of inquest, iDUUT was defunct
TB IN TORONTO

2001 MICRO TB EPIDEMIC IN SHELTERS

- 16 active cases, 3 deaths, countless latent TB
- The Joseph Teigessler Inquest
  - TB Action Group (TBAG) + Aboriginal Legal Services (ALS)
  - 23 days of evidence, and 4 days of jury deliberation
  - Affordable, flexible, and supportive housing
  - Integrating the homeless into the general population
  - Increased funding from all levels of government to follow UN guidelines
  - The development of a centralized provincial reporting system
  - Development of an expert committee (engineers, front line workers, PH) to develop Administrative Control Measures (ACM) and Environmental Control Measures (ECM) to prevent TB transmission in the shelter system
TB IN TORONTO

SHELTERS & DROP IN CENTRES

ADMINISTRATIVE CONTROL MEASURES:

- Has greatest impact in preventing TB transmission
- TPH developed 1) TB Homeless Initiative
  - Active Case Finding (ACF): Train staff to conduct symptoms screening; drop in shelters, drop ins & prisons to collect sputum; Develop ID Clinics; hire more housing workers
  - Directly Observed Therapy (DOT): meet with clients 2-3 times/wk to ensure adherence; monitor side effects; assist with psycho-social issues; accompany clients to medical appointments; provide referrals
  - TB STOP Drop-In: Conduct symptoms screening; collect sputum; administer TST; develop of Low Threshold Methadone Program, referrals, specially to NSPs
TB IN TORONTO
COUNTERfit HARM REDUCTION PROGRAM

- Develop relationships
- Train Cf staff & peers to recognize constitutional signs
- Development of ID Banks
- Development of the Urban Health Team:
  - Physician, RNs, community support worker, dietician, podiatrist, social workers, and a crisis worker
  - All worked for Cf service users
  - Outreach Clinic 2X/wk – No OHIP necessary!
- Strengthen Partnership with Housing Workers
- Eventual development of Health Outreach Workers
- Role of SARS and H5NI Viri
Toronto H5N1 Campaign

No tissue?

Do the Sleeve Sneeze.
TB IN TORONTO
SHELTERS & DROP IN CENTRES

ADMINISTRATIVE CONTROL MEASURES (Cont’d):

TPH developed 2) TB Corrections Initiative:

- Works with the Ministry of Safety & Correctional Services
- Ensures clients receive appropriate assessment, Tx and medical follow up
- Co-ordinates TB Follow-up upon discharge
- Consults with correctional and probation and parole staff on TB related issues
- Provides referrals as appropriate
TB IN TORONTO
APPROPRIATE SPACE UTILIZATION

- no double bunking
- beds arranged as far from neighbouring beds as possible
- discourage crowding
- abundance of tissues – clients and volunteers instructed to cover their noses with tissues when coughing & sneezing

sneeze into your sleeves campaign
There are two general types of ventilation:

1) Natural ventilation, and
2) Mechanical VENTILATION
NATURAL VENTILATION

- Refers to fresh dilution air that enters and leaves a building through openings such as open windows, doors, and skylights.
- Natural ventilation brings fresh dilution air into a building but this is only possible when weather permits.
- In Toronto where winters are long and cold, this is not feasible most of the year.
Mechanical ventilation refers to the movement of air throughout a building by a system of ducts, fans and diffusers.

For TB control, the gold standard system is one without recirculation—that is, a 100% outside air, or once-through, arrangement. However, this type of system is the most expensive and energy inefficient. Therefore, ventilation systems with some recirculation are the norm.

New air handling units in such systems are designed so that air is not circulated from one shelter room to any other room or to a public corridor. In addition, a central ventilation system interrupts TB transmission by:

1. introducing fresh outside air to replace room air. The volume and percentage of fresh air is specified by the Ontario Building Code and is seen as a minimum requirement;
2. using in-duct ultraviolet germicidal irradiation (UVGI) lamps to disinfect re-circulated air; OR
3. using in-duct high efficiency (HEPA) filters to remove infectious particles from re-circulated air to produce disinfected air.

People that are found to have TB (active disease) are treated using antibacterial drugs,

those that are infectious are isolated for two weeks after starting their drug treatment.

Tracing begins at this time

Isoniazid (INH), Rifampin (RMP), Pyrazinamide (PZA), Ethambutol (EMP), and Streptomycin (STREP) are used for treatment

A combination of these drugs will be prescribed because the TB bacteria may be resistant to one or more of the drugs.

Rifampin is another drug that might be used to fight TB.

These short-course drugs are prescribed for a period between 6 and 8 months. It is critical to take the prescribed amount of each at the prescribed intervals, and for the prescribed length of time. If you take the drugs for the full length of time prescribed by your doctor, you will be cured!

http://www.lung.ca
TUBERCULOSIS IN CANADA

- The Canadian Lung Association was established in 1900
- CLA has undergone many name changes:
  - 1900: The Canadian Association for the Prevention of Consumption and other Forms of Tuberculosis
  - 1923: The Canadian Tuberculosis Association
  - 1969, The Canadian Tuberculosis and Respiratory Disease Association
- The Lung Association's programs and activities are conducted at the national, provincial and municipal levels

http://www.lung.ca
The shelter and drop-in environment increases the chance of TB spread because building ventilation is often inadequate and clients are in congregate living situations, typically for 8 to 12 hours at a time

One of the most critical risks for shelters and drop-in centres is clients with unrecognized TB disease

These contagious cases enter a shelter or drop-in centre and socialize with other clients and staff thus exposing them to *M.tb*.
The risk of TB transmission increases with close and prolonged exposure to a contagious case. Exposure is intensified if the space is small and has poor ventilation (CDC 2005).

Cases can remain contagious for a long time if medical care is not sought.

Once a TB case starts treatment, person becomes less contagious very quickly;

Treatment needs to be continued until the recommended course is finished.

Unfortunately, some cases stop treatment early and their disease recurs and they become contagious again.

Cases that are infected with *M. tb* that is resistant to TB drugs can also remain contagious for a long time because standard treatments do not work.
TB IN TORONTO
DROP IN CENTRES

There are approximately 50 drop-in centres serving homeless, marginally housed and socially isolated people in Toronto.

All drop-in programs provide basic necessities such as meals, showers and laundry.

Many assist with housing, drug use and/or mental health issues, and some also offer recreational, artistic and cultural activities.

Drop-ins exist in a wide variety of physical settings;
- some are attached to shelters while others are in church basements.
- Sites range from recently renovated buildings to older facilities which have been in use for many decades.

Shelters and drop-in centres operate on limited funding and provide necessary services to a highly transient population with many and varied needs.
TB IN TORONTO
SHELTERS & DROP IN CENTRES

ENVIRONMENTAL CONTROL MEASURES:

- Dilute infectious particles by mixing fresh air into space
- Disinfect the air space by UV germicidal irradiation or filtration
- However, ECM is insufficient when used alone!
TB IN TORONTO
SHELTERS & DROP IN CENTRES

ADMINISTRATIVE CONTROL MEASURES: EARLY IDENTIFICATION

- Immediately separate the person with TB symptoms
- Have the person wear a mask
- Have staff wear an N95 respirator masks
- Arrange medical care
- Notify MOH at local public health unit
- Test of staff & volunteers after they are exposed to active TB (chest X-ray for folks who have a documented +ve Mantoux TST)
- Proper documentation (bed logs, history, TB symptoms)