TORONTO

**City Clerk's Office**
**Ulli S. Watkiss,** City Clerk

**Secretariat**
Yvonne Davies
Board of Health
North York Civic Centre
5100 Yonge Street, Main Floor
Toronto, Ontario M2N 5V7

**Tel:** 416-395-7355
**Fax:** 416-395-7305
**e-mail:** boh@toronto.ca
**Web:** www.toronto.ca

February 24, 2004

To: Budget Advisory Committee

From: Secretary, Board of Health

Re: Tuberculosis Prevention and Control Services for Homeless/Underhoused Persons and Inmates of Correctional Facilities

**Recommendation:**

**The Board of Health recommends:**

**(1) funding for 3 additional TB staff in 2004 at a cost of $85.6 thousand (gross)/$42.8 thousand (net) with annualization impact of $131.4 thousand (gross)/$65.7 thousand (net) in 2005, and 2 additional TB staff in 2005 at a cost of $168.1 thousand (gross)/$84.0 thousand (net) with annualization impact of -$8.3 thousand (gross)/-$4.2 thousand (net) in 2006 to provide on-site liaison with correctional facilities in order to facilitate timely identification of cases and administration of treatment, appropriate referrals and ongoing educational initiatives;**

**(2) that TB screening for the homeless/underhoused population be considered within the TB program review and any requests for additional funds be referred for consideration in the 2005 budget process; and**

**(3) that the appropriate City officials be authorized and directed to take the necessary action to give effect thereto.**

The Board of Health advises having taken the following action:

(1) reiterated its request to the Ministry of Health and Long Term Care to expand the Mandatory Core Program and Service Guidelines for Infection Control to include a requirement that Boards of Health inspect shelters, drop-in centres and other programs that provide temporary shelter or housing for people who are homeless; and

(2) recommentds that any new initiative to inspect shelters, drop-in centres and other programs that provide temporary shelter or housing for people who are homeless be 100 percent provincially funded.

Background:

The Board of Health, at its meeting on February 23, 2004, had before it the attached report (February 9, 2004) from the Medical Officer of Health, presenting the rationale and plan for increased tuberculosis (TB) prevention and control services targeted to homeless and underhoused persons and inmates of correctional facilities.

The Board of Health also had before it the following communications:

(i) (February 19, 2004) from Barb Craig and Pat Larson, Members of the TB Corrections/Homelessness Work Group; and

(ii) (February 20, 2004) from Amber Kellen of The John Howard Society of Toronto.

The following persons appeared before the Board of Health in connection with the foregoing matter:

(1) Anne Egger, Tuberculosis Action Group and submitted a written brief; and
(2) Holly Tasker, obo John Howard Society.

Secretary
Board of Health

Y.Davies/jd
Item No. 3

Also sent to: Minister of Health and Long Term Care

c. Acting Medical Officer of Health
Jane Speakman, Legal Services
Interested Persons

0223-03.tl.doc

(Report dated February 9, 2004 from the Medical Officer of Health addressed to the Board of Health)

Purpose:

To present the rationale and plan for increased tuberculosis (TB) prevention and control services targeted to homeless and underhoused persons and inmates of correctional facilities.

Financial Implications and Impact Statement:

The 2004 EMT Recommended Base Operating Budget for the TB Program is $ 4,935,008 (gross)/$ 2,390,004 (net). A request for program enhancement was not submitted for consideration by EMT, therefore, it is not included in the EMT recommended budget.

This request includes additional tuberculosis prevention and control services targeted to homeless and underhoused persons and inmates of correctional facilities to be phased-in over four years.

Toronto Public Health's 2004 Operating Budget request includes funding for the first year, totalling $ 635.5 thousand (gross)/$ 317.8 thousand (net), including a one-time cost of $ 121.6 thousand (net). This represents 19.6 positions including 2.6 positions for the IT component. The annualized cost for 2005 for this first phase is $ 522.9 thousand (gross)/$ 261.5 thousand (net).

Resources required for the second phase to be implemented in 2005 (10.5 positions including 0.5 position for IT component) are estimated to be an additional $ 740.9 thousand (gross)/ $ 370.4 thousand (net), including a one-time cost of $ 36.4 thousand (net).

The estimated total cost of the third phase to be implemented in 2006 (5 additional positions) is $271.5 thousand (gross)/$ 135.7 thousand (net), including a one time cost of $ 24.5 thousand (gross)/$ 12.3 thousand (net). The estimated total cost for the fourth phase to be implemented in 2007 (5 additional positions) is $ 267.7 thousand (gross)/$ 133.9 thousand (net), including a one time cost of $ 20.8 thousand (gross)/$ 10.4 thousand (net).

The estimated total cost of the entire program enhancement (in 2004 dollars) is $ 2,338.2 thousand (gross)/ $ 1,169.1 thousand (net)**,** including one-time costs of $ 157,988 (net) (total of 40.1 positions including 2.6 temporary positions or a total of 37.5 permanent base positions), as detailed in Appendix 1.

The Chief Financial Officer and Treasurer have reviewed this report and concurs with the financial impact statement.

Recommendations:

It is recommended that the Board of Health:

(1) reiterate its request to the Ministry of Health and Long Term Care to expand the Mandatory Core Program and Service Guidelines for Infection Control to include a requirement that Boards of Health inspect shelters, drop-in centres and other programs that provide temporary shelter or housing for people who are homeless;

(2) recommend that any new initiative to inspect shelters, drop-in centres and other programs that provide temporary shelter or housing for people who are homeless be 100% provincially funded;

(3) approve an additional $635.5 thousand (gross)/$317.8 thousand (net) in 2004, including a one-time cost of $121.6 thousand (net), along with an additional $522.9 thousand (gross)/$261.5 thousand (net) for annualization in 2005, to implement the first phase of the TB homeless/corrections initiative;

(4) forward this report to the Budget Advisory Committee for consideration during the 2004 Operating Budget Process; and

(5) authorize and direct the appropriate City Officials to take the necessary action to give effect thereto.

Background:

On September 16, 2003 the Board of Health (BOH) endorsed, in principle, the report entitled, "TB or not TB? There is no question – Report of A Public Inquiry into the State of Tuberculosis Within Toronto's Homeless Population" (June, 2003). The Medical Officer of Health was requested to report back to the Board of Health through its Budget Subcommittee, as part of the 2004 Budget Process, regarding all recommendations with financial implications.

Previously, the TB Subcommittee of the Board of Health presented a report (Report of the Homeless/Corrections Working Group) to the Board of Health at its meeting on October 21, 2002. The report contained 46 recommendations, many of which were repeated in the "TB or Not TB" report.

Comments:

Worldwide, more people die of TB than any other curable infectious disease. The highest morbidity and mortality rates are found in the poorest countries.

There is a strong link between TB, poverty, and homelessness. The bacterium that causes TB is airborne and thrives most easily in persons who have weakened immunity and frequent exposure to those with active illness. Left untreated, a person with TB can infect an average of 10-15 others each year. In crowded shelters where poor nutrition, stress and underlying health problems abound, a person with infectious TB can touch off an outbreak that can go on for years.

In 2001 this scenario occurred in Toronto when 15 residents of two men's shelters developed active TB with the identical strain. Managing this outbreak required the co-ordinated efforts of Toronto Public Health, Shelter, Housing and Support staff and community agencies. In particular, street nurses, St. Michael's Hospital, West Park Health Care Centre, and the Central Public Health

Laboratory worked closely with City staff. It took two and a half years to ensure that the outbreak was brought under control. The direct cost for Toronto Public Health alone was more than half a million dollars.

Coroner's Inquest:

As a consequence of this outbreak, the Office of the Chief Coroner called an Inquest into the death of an individual who died of TB during the shelter outbreak. The Inquest began on November 17, 2003 but was adjourned after a few days. It is scheduled to continue on March 1st, 2004. The City of Toronto has legal standing at the inquest. It is anticipated that recommendations will be forthcoming as a result of the Inquest. The TB program will review and consider pertinent recommendations in the context of other program changes.

TB Program Review:

The TB Prevention and Control Program has initiated a program review in collaboration with the city's internal audit division. The objective of this review will be to examine the full range of TB services offered through Toronto Public Health and to make recommendations for program changes. An important focus will be to review the current compliance with the Mandatory Health Programs and Services Guidelines set out by the Ministry of Health and Long Term Care. The committee will also examine issues such as current priorities and mandate plus available resources to meet this mandate. These identified priorities will be reviewed in the context of the complex environment in which the TB program must function. This review will also assess the broader system issues that impact on the way in which Toronto Public Health TB services are currently delivered.

**Toronto's TB Caseload:**

Toronto has almost 25% of the active cases of TB in Canada (370 – 400 cases annually) and a rate of drug resistant TB that is two to three times the Canadian average. Inadequate treatment is the usual cause of drug resistance which takes much longer to treat with drugs that are both more toxic and more expensive. The incidence of TB in Toronto is 15/100,000 as compared with 5.5/100,000 for Ontario as a whole and 5.9/100,000 for the country (2001 data). There are a number of risk factors which converge in our community that contribute to this high rate of TB. These include:

- large number of people who are homeless/underhoused;
- large number of individuals who have lived in or travelled to areas of the world where TB is endemic; and
- large HIV infected community.

In 2002, approximately 94% of Toronto's TB cases were foreign born, 4% of cases were identified as homeless, and 4% were known to be co-infected with HIV.

TB in the Homeless/Underhoused:

The Toronto Report Card on Housing and Homelessness 2003, reports that the number of homeless persons in Toronto continues to rise as a result of Toronto's affordable housing crisis. The City and its community partners provide about 4,200 emergency shelter beds in 65 locations throughout Toronto, including five City-operated shelters. The number of men and women needing emergency

shelter is at the highest level in 10 years. In 2002, a total of 31,985 different people stayed in an emergency shelter in Toronto, which is an increase of 21% since 1990.

The relationship between poverty, homelessness, and TB is well identified. Persons who are homeless or underhoused are more likely to be exposed to TB because the incidence of the disease is higher in the crowded settings which provide refuge and care for homeless people. Information gathered during the TB Shelter Pilot conducted in 1996, demonstrated that 30–40% of persons who use Toronto shelters or drop-ins are infected with latent TB. By comparison, the expected prevalence of latent TB infection in the general population is 5–10%(1). One in ten people who are infected with this dormant form of TB will develop active TB disease at some point in their lifetime. As they progress to active disease they may place others around them at risk for picking up the infection. However, it is a cycle that can be broken with the right intervention.

Each year there are an average of 10 to 15 cases of TB reported in people who live in shelters or rooming houses in the City of Toronto. If we consider Toronto's homeless/underhoused population to be about 25,000 this figure represents a rate of 40 - 60/100,000 which is triple or quadruple the rate of TB in Toronto as a whole.

While the number of cases is not large, these cases represent a substantial public health risk because they may expose large numbers of other people to infection. Those who are exposed are at increased risk of developing active TB as their immune systems may be impaired by other health conditions (such as poor nutrition, stress, fatigue and exposure to the elements) and, many homeless people have no access to, or have difficulty in accessing health care thus making follow-up and treatment for this population very difficult.

Access to healthcare is a significant issue for this population. People who are homeless often experience barriers including lack of transportation, not knowing where to go for a service, long waits, inflexible scheduling, restricted clinic hours, and complicated and extensive registration procedures. Due to these factors, it is essential that Toronto Public Health implement a strategy which ensures early detection and prompt treatment of TB to interrupt the cycle of disease in this vulnerable population.

TB Outbreak in Two Toronto Shelters:

Risk factors outlined in the February 2001 report to the Board of Health, "Tuberculosis Prevention and Control in Toronto – Averting a Crisis", predicted that a crisis in TB might occur. That crisis did happen. Shortly after the report was received, Toronto experienced an outbreak of TB in two men's shelters. More than half a million dollars was spent by Toronto Public Health to bring the outbreak under control.

In June 2001, Toronto Public Health identified an outbreak of TB involving two Toronto shelters. Eventually a total of fifteen cases of active TB were linked to the outbreak. A number of these individuals with TB had gone undetected and their illness had advanced to a highly infectious state. Screening of contacts proved effective in identifying additional cases in the early stages of disease and resulted in prompt treatment requiring minimal hospitalization.

Three men died before their treatment was completed. The cause of death was attributed directly to TB for one of these men. Follow-up of contacts associated with the outbreak continued until October, 2003.

Many lessons were learned during the outbreak. For example, the most effective way to detect new cases of TB in the shelter population was found to be the collection and testing of sputum samples. As a result of such lessons learned, policies and procedures have been revised and new approaches to providing TB services for high-risk communities are being examined.

During the outbreak TPH reallocated significant staff resources and went overestablishment to ensure the outbreak was brought under control. This situation is clearly unsustainable for TPH.

TB in Correctional Facilities:

Outbreaks of TB in correctional facilities in the United States and in Russia have been well documented in the literature. These outbreaks inevitably resulted in transmission to others in the community when infected inmates were released. In the United States, a strain of multi drug resistant (MDR) TB that started in a correctional facility in New York City, spread across the country and eventually cost $1 billion US dollars to eradicate.

The Report of the Homeless/Corrections Working Group of the Tuberculosis Subcommittee of the Board of Health (October 3, 2002) stated: " The mobility and transience of this population, both within the correctional system and between corrections and homeless communities, compounds and potentiates the cumulative risk factors for TB and cannot be ignored." The report concluded by recommending several strategies involving collaborative work between Toronto Public Health and correctional facilities.

"TB or not TB" Report and Recommendations to TPH:

In May 2003, a Public Inquiry was held by the Tuberculosis Action Group (TBAG). This group is a coalition of agencies concerned about TB in Toronto's homeless population. A panel of individuals they considered to be experts on the issue of TB in the homeless population was appointed. They heard from homeless service providers, shelter staff, mental health workers, people working with immigrants and refugees, persons involved in HIV/AIDS/Hepatitis C care and people involved with providing services for individuals released from correctional facilities. Risk factors which may have led to the outbreak in two Toronto shelters were examined and outlined in the final report. Twenty-eight recommendations were issued. Six of these recommendations were directed at Toronto Public Health, two of which are already being addressed by the program:

**a) Recommendation No. 16 of TB or not TB Report:**

"Toronto Public Health must develop and implement protocols for the prevention and management of infectious diseases in homeless service systems".

This has been referred to the City's Infectious Disease Preparedness Community Reference Group.

**b) Recommendation No. 18 of TB or not TB Report:**

"Toronto Public Health must develop and implement a standard of care for contact tracing among homeless people that tests individuals based on locations they have frequented, rather than on traditional tracing methods which depend on accurate recall of people with whom an infected person has had contact".

Toronto Public Health has designed and implemented creative and comprehensive contact tracing strategies for shelters and drop-in centers. These strategies were operationalized and successful in controlling the outbreak in two mens' shelters in 2001. Toronto Public Health will continue to work with homeless service providers to develop more effective methods of contact tracing among homeless people.

In order to implement the remaining four recommendations which have financial implications, it will be necessary to conduct overall planning, assessment and development of appropriate policies and procedures, hire and train staff, collaborate with homeless care providers, negotiate with key TB clinical partners to establish innovative and efficient ways to co-ordinate follow-up for homeless individuals (e.g. the Central Public Health Laboratory who will carry out sputum testing), and design an evaluation component that will show whether the new programs are achieving their objectives.

The four recommendations with financial implications for Toronto Public Health are:

c) Recommendation No. 8 of TB or Not TB Report:

"Toronto Public Health work in collaboration with Shelter, Housing and Support Division to inspect selected high risk shelters and drop-in centres as soon as possible in 2004."

Inspection of shelters is an important issue that must be addressed. However, there is no legislative mandate to inspect shelters at the present time and the science of evaluating air quality/ventilation is not within our scope of practice. In addition, the recently revised city shelter standards are not specific in prescribing infection control requirements. Due to these factors, it is recommended that this issue be referred to the Ministry of Health & Long Term Care for consideration in the context of the provincial mandatory programs requirements as per BOH recommendation in October 2002.

d) Recommendation No. 17 of TB or Not TB Report:

"Toronto Public Health develop and implement comprehensive TB screening in shelters and drop-in centres and other homeless service centres."

It is estimated that approximately 11 FTE's will be necessary to conduct annual TB symptom screening, followed by sputum testing in symptomatic individuals, in 100 sites. This includes 65 shelters and 35 drop-in centers. The Out of the Cold Program is not included as many of the individuals who will be screened in the shelters or drop-in centers are the same individuals who use the Out of the Cold Program. As well, approximately 3 FTEs will be required to design and implement an IT system for the screening program (see Appendix 1). Evaluation will be built into this program. It is anticipated that hiring for this initiative will begin in September 2004 after budget approval and that screening will begin in early 2005.

Screening conducted in this manner is known as "active case finding". It is intended to identify new active cases of TB before the disease becomes highly contagious. It will reduce the risk of transmission to others and make it possible to obtain a cure more quickly than with more advanced disease. Homeless persons with minimal infection require only a brief time in hospital before they can safely return to a congregate setting. Because of this, such a screening program will save health care dollars both in the short term (reduced hospitalization and treatment) and in the long term (reduced transmission to others). Early detection and prompt treatment of active TB are in line with

standards of practice endorsed by the World Health Organization, Canadian Lung Association, Canadian Thoracic Society and the Centre for Infectious Disease Prevention and Control, Health Canada. Screening of high-risk groups such as the homeless population is also recommended in the Ontario Mandatory Health Programs and Service Guidelines (2), and the Canadian Tuberculosis Standards (1), which propose that screening strategies for this group should be focused on the detection of active disease.

During the shelter outbreak, symptom screening and sputum testing identified 40% (6) of the 15 cases in the early stages of disease before x-ray changes had appeared. These six individuals required hospitalization for only a few weeks. The remaining individuals, with more advanced disease, required months of hospitalization before it was safe for them to return to shelter accommodation.

Since this screening program will be voluntary, it is imperative to select a screening tool that will yield the best result, both in terms of detecting new cases and also in terms of being acceptable to the majority of recipients. While the TB skin test is the most common screening method, it is not designed to detect active cases but to find individuals with latent TB infection who can be given prophylactic treatment to prevent the progression to active TB disease. It requires a minimum of two contacts with each person tested and, even when the test is positive, the person must be referred for further assessment to a physician or clinic before a diagnosis can be made. Because TB clinic space is limited, only those who have significant symptoms of active disease can be seen immediately. Those who are asymptomatic or who have minimum symptoms may wait several weeks to obtain an appointment. Typically, clinical assessment involves taking a history, carrying out a physical examination, and obtaining a chest x-ray. During the TB shelter outbreak, there were six cases of active TB disease that would not have been identified in a timely fashion based on this screening protocol because of a lack of x-ray changes.

Symptom screening and sputum collection has been selected as the screening tool best suited for use in shelters and drop-in centres. This is because the Toronto Public Health experience in managing the TB outbreak suggests it is efficient, effective and acceptable to the clients it will serve. The proposed screening method requires only one encounter with each client. The person is interviewed and, if assessed as symptomatic, they are requested to provide a sputum sample at the same time. Careful evaluation during the implementation of this initiative is required to test out the hypothesis that symptom screening and sputum testing is the best screening tool for homeless/underhoused persons.

During the shelter outbreak, a comprehensive review of TB screening in the homeless population was commissioned by Toronto Public Health (3). The reviewer conducted a literature review and a benchmarking survey of nine urban health units in Canada and the United States. Only three cities were found to have ongoing screening programs - Boston, Los Angeles and San Francisco. Incentives and enablers were mentioned as an important means of obtaining completion of screening and adherence to treatment.

e) Recommendation No. 19 of TB or Not TB Report:

"Toronto Public Health must expand its Directly Observed Therapy (DOT) program to include Directly Observed Prophylactic Therapy (DOPT) among homeless populations."

It has been estimated that approximately 21 FTE's would be necessary to implement even selective DOPT for homeless/underhoused individuals who have latent TB infection (LTBI). Homeless/underhoused persons who have LTBI and are either contacts of an active TB case or who are at high risk for progression from LTBI to active TB due to an underlying health concern (e.g. HIV+) would be eligible for this selective program. It is intended that this initiative be phased in over four years. The implementation would begin in September 2004 after budget approval, with the hiring of staff.

Those at highest risk for developing active TB are persons identified as having latent TB due to recent exposure to an infectious case and those who have underlying medical conditions impairing their ability to keep latent TB infection in check. For such persons treatment of their latent TB far outweighs the risk of side effects caused by the drugs. For example, an HIV positive person co-infected with TB has a 50% lifetime chance of developing active TB compared with a 10% lifetime risk for persons who are HIV negative.

However, persons who are homeless have many barriers to treatment completion including a greater likelihood of developing serious side effects due to anti-TB drugs if they have underlying liver disease from substance use. Because of this, most physicians will not put a homeless person on preventive treatment. During the shelter outbreak directly observed prophylactic treatment (DOPT) for contacts with latent infection was undertaken. Again, the literature review carried out during the shelter outbreak found reference to a significant positive effect when incentives were used.

f) Recommendation No. 20 of TB or Not TB Report:

"Toronto Public Health staff must liase closely with health providers in jails to reduce the likelihood of losing individuals with LTBI or active TB to follow-up after release."

There are many issues to be addressed with correctional facilities including: routine screening procedures, investigation and management of active cases of TB, reporting of active and latent cases of TB, treatment of latent TB infection, discharge planning and education of staff and inmates. Because of this, it has been estimated that 4 FTE's are needed to develop and implement a liaison program, one to work closely with each correctional facility in Toronto. Implementation of this initiative will begin in September 2004 after budget approval.

<u>Conclusions</u>:

The Toronto Public Health TB Prevention and Control Program spent two and a half years and more than $500,000 eliminating an outbreak of TB in two men's shelters. During the outbreak TPH reallocated significant staff resources and went overestablishment to ensure the outbreak was brought under control. This situation is clearly unsustainable for TPH.

A Coroner's Inquest is being held into the death of one of the men associated with the outbreak. A screening program targeted to the homeless/underhoused was recommended in two reports to the Board of Health; an October 2002 report from the Homeless/Corrections Working Group of the Tuberculosis Subcommittee of the Board of Health and a September 2003 report entitled "TB or not TB? There is no question – Report of A Public Inquiry into the State of Tuberculosis Within Toronto's Homeless Population". Both reports also recommended an expanded TPH role in correctional facilities and inspection of shelters and drop-in centres. How best to implement these

initiatives will be considered within the context of the program review of the TB Prevention and Control Program.

Although TPH works closely with shelters and homeless care providers, it is clear that this role needs to be expanded. Currently, TPH provides TB in-services for shelter staff through the Toronto Hostel Training Center three times a year. Similarly, in-services and educational sessions are provided in Toronto area correctional facilities as requested. Workshops on TB are given once a year at Metro Hall for all shelter staff and homeless care providers. TPH public health nurses liase with all shelters in the city on a regular basis and one TPH nurse is a member of the Street Nurses Network Committee. The need for an enhanced public health role in screening of the homeless population and in liasing with correctional facilities has become critical. Screening the homeless population through active case finding will proactively work towards preventing future outbreaks in the shelter system. Creating a liaison role with correctional facilities will allow for better communication, regular educational initiatives, early identification of cases of TB leading to rapid treatment, and more efficient handling of cases and contacts in these facilities. This initiative also will be important in preventing transmission of TB in correctional facilities and the possibility of future outbreaks. Therefore, it is recommended that the homeless/correction initiative be phased in over four years, with the first phase beginning in September of 2004.

Contact:

**Dr. Barbara Yaffe**
**Director, Communicable Disease Control & AMOH**
**e-mail: baffe@toronto.ca**
**Phone: (416) 392-7405**

**Dr. Tamara Wallington**
**AMOH – TB Program**
**e-mail: twallin@toronto.ca**
**Phone: (416) 338-8188**

Sharron Stone
TB Program
e-mail: stone@toronto.ca
Phone: (416) 338-7886

Dr. Sheela V. Basrur
Medical Officer of Health

Attachments: References
Appendix 1 – TB Screening Program for the Homeless Population & Releases from Correctional Services Budget Request

## REFERENCES

1. Canadian Tuberculosis Standards; 5th Edition, 2000; pg.180.

2. Ontario Mandatory Health Programs & Services Guidelines, December 1997.

3. Yuan, L. Tuberculosis Screening of the Homeless: A Review. May 28, 2002.