

Setsuko Thurlow Toronto Board of Health Presentation April 16, 2018

I am Setsuko Thurlow speaking on behalf of the Hiroshima Nagasaki Day Coalition. We have been organizing the remembrance of the first atomic bombings at the City Hall Peace Garden every August for three decades. City Councillors have participated in these commemorations by reading the Mayor's annual Hiroshima-Nagasaki Day peace message.

I am honoured that Mayor Tory and City Council recognized my work for the abolition of nuclear weapons last November when Council re-affirmed Toronto as a nuclear weapons free zone.

On August 6, 1945, one atomic bomb which was small and obsolete by today's standards, fueled by uranium from Great Bear Lake in the Northwest Territories and refined in Port Hope, Ontario, detonated over me and 360,000 residents of Hiroshima, most of whom were innocent civilians—women, children and the elderly. This indiscriminate attack vaporized, incinerated, carbonized and contaminated people with mysterious radiation poison. Thus, my beloved city of Hiroshima was wiped from the face of the earth with the heat of 4,000 degrees Celsius.

I have lived in this blessed country for over 60 years and am a proud and grateful citizen of Canada. I enjoyed a fulfilling professional career as a social worker in Toronto, but throughout my adult life my major effort has been devoted to disarmament education and advocacy.

In the mid-1970s my husband Jim Thurlow and I founded the group Hiroshima Nagasaki Relived to inform Torontonians about the horrendous effects of nuclear weapons on cities and civilians.

We were gratified when in 1982 the Toronto Board of Health consulted our and other Toronto peace groups and issued a report entitled *Public Health Consequences of Nuclear Weapons and Nuclear War*. This report was adopted by both the Board of Health and Toronto City Council.

It urged that City Council accept an ongoing responsibility to deal with the issue of nuclear weapons and nuclear war and made a number of recommendations subsequently implemented by Toronto City Council.

Council voted to hold a referendum on worldwide nuclear disarmament in the November 8, 1982 municipal election. The report *Public Health Consequences of Nuclear Weapons and Nuclear War* was distributed to all Toronto households as information for the referendum.

In November 1982, 78% of Torontonians who cast ballots in the municipal election voted yes to the following resolution: “Do you support nuclear disarmament by all nations on a gradual basis to the ultimate goal of a world free from nuclear weapons, and mandate your federal government to negotiate and implement with other governments steps which would lead to the earliest possible achievement of this goal?” City Council forwarded the results of this referendum to the federal government.

In 1983, City Council designated Toronto a Nuclear Weapons Free Zone and adopted the Inter-City Solidarity Programme proposed by the cities of Hiroshima and Nagasaki, thus becoming a member of Mayors for Peace. Council also approved the building of the Peace Garden on Nathan Phillips Square at a cost of \$480,000 as an expression of "our continuing struggle to avoid the devastation of war."

In 1988, City Council approved the report *Healthy Toronto 2000* which specifically referred to questions of “safety, security and peace,” thereby again accepting that the City is accountable for the immediate personal security of its citizens.

Today, 15,000 nuclear weapons still endanger the very existence of cities such as Toronto and indeed all of human civilization. As a Hiroshima survivor, I urge you to examine the evidence brought before you by peace, faith, medical and environmental community organizations active in the world-wide effort to abolish nuclear arms.

I have requested that the City Clerk's office circulate the 1982 *Public Health Consequences of Nuclear Weapons and Nuclear War* report to the current Board of Health members so that you can consider what recommendations the Board may make to City Council today.

In 1982 the Board and City Council concluded that Toronto was targeted by nuclear missiles and would be catastrophically affected by radiation

fallout from nuclear explosions in the United States. They also concluded that there is no civil defence against nuclear weapons or possible evacuation from a major urban area at a time of nuclear confrontation. "There is only one effective form of civil defence," the 1982 Report concluded, "and that is to use the political process to bring about arms control; a lowering of tension and, eventually, nuclear disarmament."

Your recommendations today could include reaffirming that City Council has an ongoing responsibility to deal with the issue of nuclear weapons and nuclear war, and that the City participate actively in Mayors for Peace, which now has over 7,500 members in 163 countries and regions. You could also recommend that City Council urge the federal government to sign the UN Treaty on the Prohibition of Nuclear Weapons. I was honoured to accept the Nobel Peace Prize on behalf of the International Campaign to Abolish Nuclear Weapons awarded to ICAN in Oslo in December.

Thank you for giving me this opportunity to speak to the Board of Health on this issue vital to our very existence.

The text of the 1982 Board of Health report referred to in the presentation is attached and can be accessed on the HNDC website at

<http://hiroshimadaycoalition.ca/data/uploads/consequences-of-nuclear-war-toronto-1982.pdf>

For a listing of past City Council peace initiatives researched at the City of Toronto Archives, please see

[http://hiroshimadaycoalition.ca/data/uploads/Making%20Peace%20in%20Toronto%20\(Timeline%20&%20City%20Proclamations\).pdf](http://hiroshimadaycoalition.ca/data/uploads/Making%20Peace%20in%20Toronto%20(Timeline%20&%20City%20Proclamations).pdf)

For information on Mayors for Peace referenced, please see their website

<http://www.mayorsforpeace.org/english/>

For the International Campaign to Abolish Nuclear Weapons (winner of the recent Nobel Peace Prize) and the Treaty on the Prohibition of Nuclear Weapons referenced by Setsuko, please see <http://www.icanw.org/>



# The Local Board of Health City of Toronto

APR 19 1982

CITY OF TORONTO  
-PLANNING DEPT.

Chairman:  
Alderman Anne Johnston  
Aldermen's Office  
City Hall, Toronto  
M5H 2N2  
367-7902

Secretary:  
Roy V. Henderson,  
City Clerk

Attention: Harold A. Talbot  
City Clerk's Department  
City Hall, Toronto  
M5H 2N2  
367-7025

April 13, 1982

TO: ALL INTERESTED PERSONS

RE: PUBLIC HEALTH CONSEQUENCES OF NUCLEAR WEAPONS AND NUCLEAR WAR

Enclosed is a copy of a recent report on the Public Health Consequences of Nuclear Weapons and Nuclear War adopted by the Board of Health and Council of the City of Toronto. This report is based on an international symposium held last December in Toronto on "The Medical Consequences of Nuclear Weapons and Nuclear War."

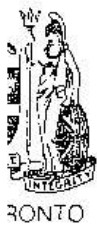
It clearly documents the catastrophic consequences of nuclear war and the ineffectiveness of civil defense methods to protect communities and argues persuasively that the only solution to this, the ultimate of all public health threats, is "to use the political process to bring about arms control; a reduction in nuclear weapons and eventually nuclear disarmament."

The report also notes that despite the enormous threat the build-up of nuclear arms poses for all life on earth, politicians at the federal level have admitted they are unable to act without strong support from their constituents. The catastrophic impact a nuclear war on Canadian communities, and the unwillingness of federal politicians to take a leadership role in this issue, requires that local governments and agencies be actively involved. As the report notes, municipalities can be active in educating their residents about the consequences of a nuclear war and through this can put pressure on federal politicians to act to reduce and eventually eliminate the threat of a nuclear war.

The recommendations of the report outline how the City of Toronto can take action on this issue. We hope you will join with the City of Toronto in carefully considering the implications of this report and its recommendations for your community.

Yours sincerely

Anne Johnston  
Chairman - Local Board of Health



# Department of the City Clerk

City Hall, Toronto, Ontario, Canada M5H 2N2

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Roy V. Henderson / City Clerk

A.R.N. Woadden / Deputy City Clerk

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Mr. H. A. Talbot - 367-7025

April 14, 1982.

TO: ALL INTERESTED PERSONS

City Council, at its last meeting, gave consideration to the attached Clause in a Report from the Local Board of Health. City Council's action with respect to this matter is provided for your information and whatever action may be necessary.

Yours truly,

*Roy V. Henderson*

City Clerk.

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**PUBLIC HEALTH CONSEQUENCES OF  
NUCLEAR WEAPONS AND NUCLEAR WAR**

The Local Board of Health submits the report (February 4, 1982) from the Medical Officer of Health:

Subject: Conference on "The Medical Consequences of Nuclear Weapons and Nuclear War"

Origin: Medical Officer of Health, February 4, 1982 (c37hlth82008:37)

Comments: At its meeting on November 10, 1981, the Local Board of Health had before it a communication (November 2, 1981) from Dr. Frank Sommers, President, Physicians for Social Responsibility, advising of a Conference on "The Medical Consequences of Nuclear Weapons and Nuclear War" on December 5, 1981, Faculty of Medicine, University of Toronto, and requesting the Board to publicize the event and to support it financially.

The Board concurred with the above request, and also decided to recommend to City Council that authority be granted for the attendance at the Conference of any member of the Local Board of Health desiring to attend.

The attached report was prepared by Dr. Trevor Hancock, Health Planner, Department of Public Health and Ms. Dawn Currie, Vice-Chairman, Local Board of Health following their attendance at the above Conference. In view of City Council's decision to conduct a referendum on the issue of nuclear weapons, this report and its recommendations are timely.

Recommendation: That the Local Board of Health adopt the attached report.

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Public Health Consequences of  
Nuclear Weapons and Nuclear War

Report and Recommendations

This report has been prepared by Dr. Trevor Hancock, Health Planner, Health Advocacy Unit, Department of Public Health and Ms. Dawn Currie, Vice-Chairman, Local Board of Health, following their attendance at the Conference on "The Medical Consequences of Nuclear Weapons and Nuclear War". In preparing the report, they consulted with Physicians for Social Responsibility, Science for Peace, Operation Dismantlement, Project Ploughshares, Cruise Missile Conversion Project and Hiroshima-Nagasaki Relived.

A. The Problem

The build-up of nuclear weapons and the resultant increasing threat of nuclear war was described by Rear Admiral Eugene Carroll, U.S.N. (retired), presently Deputy Director, Centre for Defence Information, Washington, D.C. During the next decade, the U.S. nuclear arsenal is expected to increase from 30,000 weapons to 40,000 weapons, with the

number capable of reaching the U.S.S.R. increasing from 12,000 to 20,000. Simultaneously, the Russian nuclear arsenal is expected to increase from 20,000 weapons to 30,000, with the number capable of reaching the U.S.A. increasing from 7,000 to 14,000. Not only is the number of weapons increasing, but so is their accuracy. Because of their improved accuracy, many of these new weapons systems such as the MX missile and the cruise missile, are, in effect, first-strike weapons. In the words of another speaker, Professor Bernard Lown, "The age of deterrence is drawing to a close - we are entering the age of preemption, the era of first-strike". The likelihood of a nuclear war starting is dramatically increased by a first-strike capability, because decisions to fire nuclear weapons must be rapidly made - you use them or you lose them, as Rear Admiral Carroll put it. In such a situation, fear may overcome judgement.

Rear Admiral Carroll listed seven ways in which nuclear war might start. In increasing order of likelihood, these are: mechanical failure; terrorist action; errors by humans or weapons control systems; irrational behaviour on the part of those controlling weapons; a conscious decision by one of the superpowers to launch a nuclear war; and, most probably, escalation of a conventional war. The temptation, and perhaps the perception of the need to use tactical nuclear weapons, especially in Europe, is strong and the likelihood that a nuclear war could be limited to Europe is small.

Should there be a strategic nuclear war, Toronto would almost certainly be a target. In fact, Canadian planners assume that Toronto is targeted for 2-5 one megaton bombs. A one megaton bomb has the explosive power of one million tons of TNT or a train load of TNT 400 miles long. It is eighty times the size of weapons that devastated Hiroshima and Nagasaki. Professor H. Jack Geiger, Professor of Community Medicine at the City College of New York, presented a description of the effects of a one megaton airburst over downtown Toronto. The lethal area, within which most people could be expected to die as a result of the direct effects of the explosion, would be 50 square miles (a circle 8 miles across), though if a fire storm were to result, this could be increased to 250 square miles (a circle 18 miles across).

Up to 1.5 miles from ground zero, the fatality rate would be in excess of 90%, with buildings demolished totally by the blast and by winds in excess of 600 m.p.h. Up to 4.3 miles out, fatality rates would be in excess of 50%. As far out as 8.5 miles from ground zero, the fatality rate would exceed 10%, all those exposed to the blast would receive second or third degree burns to exposed skin, and there would be moderately heavy damage to houses, due to spontaneous ignition of clothing and combustible materials in houses.

Of Toronto's population of 2.5 million, 624,000 would be killed immediately and 795,000 would have severe injuries; many of these would probably die later if extensive medical help were not available. A disproportionate number of physicians and other health personnel would be killed and injured, and 65-80% of all hospital beds would be destroyed, together with blood banks, medical supplies, diagnostic and life-supporting equipment, operating theatres and so on. There would be roughly one physician left for every 1,000 survivors, equipped with little more than her/his "black bag", and because other large centres would be equally devastated, there would be



no hope of help from "outside" - there would be no outside. Should the weapon used be larger, or more than one weapon used, the devastation would be greater still. Thus, a five megaton bomb would result in 1,440,000 killed immediately and 674,000 receiving severe injuries. In such horrendous circumstances, medicine and the medical and other health professions have little or no help to offer. The surviving physicians, assuming they are at all functional themselves, will be totally overwhelmed by the number of casualties and the lack of supplies and equipment. They will be unable to help at all. As Professor Lown put it, "What we physicians are saying is - count us out".

Even were Toronto itself not a target, the effect of a Russian first-strike strategic attack on the missile fields, bomber stations, and submarine bases of the continental United States, involving the detonation of thousands of weapons totalling some 10,000 megatons, would be almost as severe. According to Professor Bernard Feld, a professor of physics at M.I.T. and Editor-in-Chief of the Bulletin of the Atomic Scientists, there would be four results of such an attack. The immediate fallout would cover most of North America, necessitating shelter by humans for weeks or months. The resultant water and soil contamination would last for many years, perhaps centuries, and virtually all domestic animals would be destroyed unless they too were sheltered. Secondly, climatic effects would result in major changes in global temperatures and rainfall patterns, thus drastically altering the agricultural systems, even if it were possible to carry out agriculture. Thirdly, the destruction of 30-70% of the ozone layer would result in a 4-5 fold increase in ultraviolet radiation, with a greater incidence of skin burns, cancer, and blindness. In particular, any surviving domestic animals would likely become blind unless their eyes were protected. Finally, global fallout would last for decades, perhaps centuries, with a uniform dispersal of fallout throughout the world. The dose of radiation globally would be 5-10 rems, not enough to destroy what was left of humanity, but resulting in widespread genetic mutation and increased cancer. Fallout across Canada would be much higher than global levels, perhaps up to 100 rems.

In the face of this potential cataclysm, what can be done to protect Toronto's citizens from the consequences of a nuclear attack? One traditional response has been to rely upon civil defence procedures, with the evacuation of citizens from the target area to a safe area. Describing civil defence plans as dangerous because they create the illusion that we can survive a nuclear war, Dr. Eric Chivian, a psychiatrist at M.I.T. and treasurer of International Physicians for the Prevention of Nuclear War, spelled out ten assumptions (we might almost call them myths) about civil defence in the event of nuclear attack, and demolished each one in turn. The first assumption is that there will be a gradual buildup in international tension prior to a nuclear war, allowing time (up to thirty days in Canadian plans) for an evacuation to be organized and carried out. However, there may be little warning; most crises develop fairly swiftly. Second, it is assumed that the point at which a crisis reaches a critical level requiring an order to evacuate would be clearly perceived. However, given that evacuation is extremely costly (since the economy stops functioning) and that premature evacuation could be interpreted by an enemy as signalling an intention to initiate an attack, political leaders will be understandably reluctant to order an evacuation. Third, it is assumed that an evacuation order would be heard, obeyed, and carried out in an orderly fashion,

ignoring the fact that many would not hear of the order for a variety of reasons, would be loath to obey it, or would panic. Fourth, and connected with the above, it is assumed that evacuation from a major urban area is physically possible, given the numbers to be moved, the inadequacy of exit routes, the lack of private transportation, and the probability of panic. It should not be thought that things would go as smoothly as was the case in the Mississauga evacuation of 1979, because an evacuation in the face of possible nuclear war would be very different, for several reasons: it would be a wartime rather than a peacetime evacuation; the scale of anticipated damage and injury would be far greater and of an unprecedented nature; there would be no "safe" area to go to - no point where an evacuee would feel safe from the threatened disaster; and there would be no anticipation of a safe return after the crisis - there would be nothing to return to. In these circumstances panic, confusion and refusal to cooperate are highly likely eventualities. The fifth assumption is that following the evacuation, missiles will not be retargeted on evacuees. However, since missiles can now be retargeted in a matter of minutes, and since the purpose of strategic attack is to destroy both industrial capacity and populations, it must be acknowledged that the evacuated population will still be a target. Sixth, it is assumed that safe areas can be predicted, an assumption that is clearly unrealistic given the pervasive nature of fallout. Seventh, evacuation can provide adequate protection. Even if people did reach a "safe" area, it is unlikely such large numbers could be adequately protected, given the need for radiation-proof shelters for large numbers. Eighth, it is assumed that basic survival needs will be met in shelters. These include food, water, air, sanitation, energy and medical supplies. Large numbers of people, some of them sick and dying, all of them distraught, will be crammed together in shelters for long periods of time - up to thirty days where fallout initially gives a dose of 1,000 rems, and up to 110 days where levels reach 3,000 rems, which could be anywhere up to 30-60 miles downwind. The conditions in the shelters are obviously ripe for epidemic outbreaks of infectious disease, especially given the lowered immunity that some of those exposed to radiation will experience. A ninth assumption is that after one or two weeks, people can reemerge and start to rebuild society. It is likely that it will be much longer before radiation levels are low enough to permit that, and in any event, it is highly improbable that survivors would have either the desire or psychological strength to undertake such an activity, given their probable state of shock and disorientation. Finally, it is assumed that the systems will still be in place to rebuild society. However, even if the survivors were willing and able to make such an effort, the complex systems our society needs to function would be destroyed by a nuclear war. In particular, the food and energy production, transportation and distribution systems would be gone. The image of survivors buckling down like good Boy Scouts to improvise merrily together to build a new society is improbable to say the least. As Dr. Geiger put it, the meaning of survival for man is social, and with the social fabric destroyed, the meaning of survival would be destroyed. As that grim epitaph for nuclear war has it, the survivors would envy the dead.

#### B. What Can Be Done?

Given the increasing risk of nuclear war, the catastrophic consequence of nuclear war and the ineffectiveness of civil defence methods, what can we do? The answer is a familiar one to public health - prevention of this final

epidemic is the only solution. There is only one effective form of civil defence, and that is to use the political process to bring about arms control; a reduction in nuclear weapons; a lowering of tension and, eventually, nuclear disarmament. As Dr. Frank Sommers, President of the Physicians for Social Responsibility in Canada and organizer of the Conference put it, we need some new modes of thought, including a sense of linkage to and responsibility towards the future, a better understanding of, and a more positive image of "the enemy", more understanding of and trust in other people and a more global sense of our problems and the unity of the human race. Professor Bernard Lown, of the Harvard School of Public Health, President of International Physicians for the Prevention of Nuclear War, wondered "Where is the sense of moral outrage? 500 million people have been held hostage for 20 years" by the superpowers. He described the concept of aiming nuclear-tipped weapons at whole nations as "without precedent in moral depravity", and added that "nuclear bombs are not weapons but instruments of mass genocide". As did several other speakers (including George Ignatieff, Chancellor of the University of Toronto; William Epstein, President of Pugwash Canada and a member of Canada's U.N. Delegation with experience in arms control negotiation; Rear Admiral Carroll and Dr. Ian Carr, Professor of Pathology at the University of Saskatchewan), Professor Lown stressed the need for a mass movement of aroused citizens using the political process to move us - we the targets - away from the precipice and to guarantee our right to life. Several speakers made the point that on this issue politicians have admitted their inability to act without pressure and support from their constituents - they are afraid to lead on this issue.

Particular targets of such political action recommended by speakers included a comprehensive test ban treaty, renunciation of first use of nuclear weapons, a freeze on nuclear weapons (both numbers and new technologies), a reduction in the number of weapons, the development of nuclear-free zones, and the release and widespread dissemination to the public of information regarding the effects of nuclear war and present nuclear strategy. In the specific Canadian context, our leaders should be pressured to pursue much more actively the policies they have announced, including removal of all nuclear weapons from Canadian soil, the noninvolvement of Canadian industry in the manufacture of nuclear weaponry, and the advancement of the Strategy for Suffocation announced by Mr. Trudeau in 1979. Much more money should be devoted to disarmament research and education, at least 0.1% of the defence budget. Accordingly, we have specific proposals to make to the Local Board of Health, and through the Board to City Council, regarding the appropriate public health measures that need to be taken by the City of Toronto to deal with what Dr. Lown described as the world's number one public health problem. (He added that the world's number two public health problem is that people are ignoring the number one public health problem.)

#### Recommendations

##### 1. Civil Defence Pamphlet

The City of Cambridge, Massachusetts, having considered the issue of civil defence against nuclear attack, and having concluded that such measures are futile, developed a pamphlet (see Appendix I) setting out its position on the issue namely that "the sole means of protecting Cambridge citizens from nuclear warfare would be for nations with nuclear arms to destroy those arms and renounce their use". The City Council suggested that, in effect, the only form of civil defence is to write to, phone and lobby politicians to reduce the danger of nuclear war. This pamphlet was circulated to every household in the City of Cambridge.

#### Recommendation 1

That City Council direct the Department of Public Health, in consultation with the Public Information and Communication Services Division, City Clerk's Department, to develop a pamphlet on civil defence similar to that developed by the City of Cambridge, Massachusetts, and distribute it to every household in the City. The pamphlet should incorporate a tear off coupon or response sheet so that citizens can express their concern to their elected representatives.

#### 2. Promoting International Understanding

As several speakers at the Conference suggested, we need to make a major effort to promote international understanding. There are many ways to do this, and some suggested approaches include: twinning Toronto with a Russian city and inviting the mayor to visit Toronto; developing youth exchanges between Toronto and a Russian city; and working with the public health officials of a Russian city on this and other public health issues.

#### Recommendation 2

That the City of Toronto twin with a major Russian city and invite the Mayor and Council to visit Toronto.

#### Recommendation 3

That the Local Board of Health direct the Medical Officer of Health to establish links with his counterpart in the chosen Russian city.

#### Recommendation 4

That the Toronto Board of Education and the Metropolitan Toronto Separate School Board be requested to develop youth exchange programs with the chosen Russian city.

#### 3. Educating Children

Concern has been raised in some quarters about the long-term effects upon mental health of the threat of nuclear war. There is a need to educate children about the issue, a need recognized in Cambridge, where the School Committee acted to establish a curriculum to support "children and young people's understanding of the history, scientific background, economics and politics of waging peace in the nuclear age". It will be especially important to indicate how something can be done about the problem.



#### Recommendation 5

That the Toronto Board of Education and the Metropolitan Toronto Separate School Board be requested to develop a curriculum on nuclear war and the promotion of peace at junior, intermediate and senior school levels, in cooperation with peace and disarmament groups in the City.

#### Recommendation 6

That in support of Recommendation 5 the Toronto Board of Education and the Metropolitan Toronto Separate School Board be requested to increase staff awareness, provide in-service training for staff and develop curriculum materials.

#### 4. Opposition to the Nuclear Weapons Industry

In Toronto, Litron Industries manufactures guidance systems for the American cruise missile, one of the new nuclear weapons that the U.S. is introducing to Europe.

#### Recommendation 7

That City Council express its opposition to the production of components for nuclear weapons in Canada, and specifically in Toronto, and further that it request the Provincial and Federal cabinets to do all within their power to halt such production, and instead convert the production to peaceful ends.

#### 5. Disarmament Education and Research

In reporting on the 1st special session of the U.N. on disarmament, the Secretary-General of the U.N. has proposed that the countries of the world commit 0.1% of their defence budgets to education about research into disarmament. This would amount to \$600 million annually at present levels of arms spending.

#### Recommendation 8

That City Council urge that the Federal government spend 0.1% of Canada's defence budget on disarmament education and research.

#### 6. Ongoing Responsibility

This issue is too important to be dealt with once only and then dropped. In addition, a number of the recommendations require ongoing activity.

#### Recommendation 9

That City Council accept its ongoing responsibility with respect to this topic and that it develop a mechanism to ensure that the issue of nuclear weapons and nuclear war continues to be dealt with by the City of Toronto.

#### 7. Spreading the Word

The City of Toronto and its Local Board of Health have long been trendsetters among Canadian cities, and have a well-deserved reputation for taking important initiatives to enhance the well-being of Toronto's citizens. The initiatives recommended in this report should be communicated to other jurisdictions, who should be encouraged to undertake similar actions.

#### Recommendation 10

That a copy of this report be sent to every Board of Health in Ontario; the Boards of Health of other major Canadian cities; the Mayors of all of Ontario's municipalities; the Association of Ontario Boards of Health; the Ontario Public Health Association; the Ontario Medical Association; the Premier of Ontario; the leaders of the Ontario Liberal and New Democratic parties; all Metropolitan Toronto M.P.'s; the Canadian Public Health Association; the Canadian Medical Association; the Deans of Canada's medical schools; the House of Commons Standing Committee on External Affairs and Defence; the Prime Minister of Canada; the leader of the Opposition; the leader of the New Democratic Party; all Metropolitan Toronto M.P.'s; the City of Toronto Board of Education; the Metropolitan Separate School Board; the Metropolitan Toronto School Board; president of the Toronto Student Council; the Committee of Heads; the Toronto Fire Chief; the Chief of Metropolitan Toronto Police, and the Mayor, City of Cambridge, Massachusetts, U.S.A.

#### Recommendation 11

That a copy of this report be sent to the following Toronto-based groups working to avert the threat of nuclear war and promote peace. Physicians for Social Responsibility; Science for Peace; Project Ploughshares; Cruise Missile Conversion Project, Hiroshima-Nagasaki Relived and Operation Dismantlement.

*The Local Board of Health advises that the pamphlet prepared by the City of Cambridge, Massachusetts, entitled "Cambridge and Nuclear Weapons" is on file in the City Clerk's Department.*

The Local Board of Health also submits the communication (February 4, 1982) from Mr. Eric Fawcett, Professor of Physics and President of Science for Peace:

I am writing as President of Science for Peace, an organization whose objectives and whose Board of Directors are given in the enclosure. I am writing also as the Moderator at the afternoon session of the Symposium on the Medical Consequences of Nuclear Weapons and Nuclear War held December 5, 1981, at the University of Toronto.

I understand that a proposal has been submitted to the Board of Health of the City of Toronto that a recommendation should be made to the City of Toronto to take the following actions:

1. to develop a pamphlet on civil defence to be distributed to every household in the City to warn citizens of the great danger of nuclear war and inviting them to express their comments to their elected representative.

2. to establish links between Toronto and a major Russian city - between mayor and council, Board of Health, Board of Education, etc. in Toronto and their counterparts in Russia.
3. to oppose the production of nuclear weapons in Canada, and specifically in Toronto.
4. to demand that the Federal government spend 0.1% of Canada's defence budget on disarmament education and research.
5. to accept an ongoing responsibility to deal with the issue of nuclear weapons and nuclear war.

On behalf of the Board of Directors and of the membership of Science for Peace, I should like to express my strong support for these proposals. I should also like to express our willingness to provide expert testimony to the Board of Health, or subsequently when City Council considers their recommendation on scientific aspects of these proposals.

**The Local Board of Health also submits the communication (February 11, 1982) from Milton Little, Operation Dismantle:**

Operation Dismantle is a non-profit association of Canadians deeply concerned about the threat of human survival contained in the race in nuclear weapons being engaged in by the world's two super-power nations and their allies.

Supporters of Operation Dismantle are undertaking not only to join with other concerned groups to alert Canadians to the awesome danger which faces us, but also to promote, through the United Nations, a global referendum on disarmament.

The Executive of the Toronto Branch of Operation Dismantle has been requested by your Health Advocacy Unit to examine the Unit's proposal to have designed and distributed to the people of Toronto a pamphlet similar to that prepared and issued to the City of Cambridge in the United States of America.

We find the approach taken by your Health Advocacy Unit to this most grievous matter of the threat of a nuclear war to be altogether commendable. The information appears to be accurate. Its reasoning is cogent and persuasive. We believe its impact on the people of our city will be salutary indeed.

**The Local Board of Health also submits the communication (February 12, 1982) from Alderman Gilbert:**

Re: Report on the Conference on "The Medical Consequences of Nuclear Weapons and Nuclear War": Item 6 of the agenda for the meeting of February 16, 1982.

First, I want to congratulate Dawn Currie and Trevor Hancock on their report. It is well-crafted, compelling, and chilling. Their words strengthen my resolve that the City of Toronto must take whatever action is within its power to help avert nuclear war.

I am in complete agreement with the thrust of the report's recommendations. However, because of a recent action by City Council, I believe that the Board should adopt Recommendation 1 in an amended form.

City Council has agreed to hold a referendum on general disarmament in conjunction with the 1982 municipal elections. The question to be asked will be of the following form:

"Do you support the goal of general disarmament and mandate your government to negotiate and implement, with other governments, the balanced steps that would lead to the earliest possible achievement of this goal?"

As the holder of the referendum, City Council should not favour one or the other of the possible outcomes of the referendum. Accordingly, it would not be appropriate for the moment for City Council to take the position that general disarmament is a better means of avoiding nuclear war than continuation of the arms race.

Publication by City Council of a document such as that produced by the City of Cambridge (appended to the report) would put City Council in the position of favouring one outcome of the referendum, because the document would promote the need for general disarmament.

However, it is Council's responsibility to provide factual information and balanced arguments relevant to the referendum. To do this I propose the following:

1. That City Council make widely available in the City of Toronto during October 1982 a document, approximately 6,000 words in length, that provides information and opinion on the matter of the referendum question.
2. That the document be in three 2000-word parts:
  - (a) An argument to vote "Yes" in the referendum.
  - (b) An argument to vote "No" in the referendum.
  - (c) A statement by the Medical Officer of Health of the likely effects of exploding a nuclear bomb in or near the City of Toronto.
3. That proposals for the two arguments be invited by interested parties by means of advertising in the press. City officials will select the argument for each side that is most representative of the respective arguments submitted. The two arguments so selected would be published without alteration and over the signatures of their authors.

Recommendation: That Recommendation 1 of the report referred to be struck out and, instead, the Medical Officer of Health and the City Clerk report to an early meeting of the Board of Health on the implementation and funding of a document of the kind described above.

The Local Board of Health also submits the communication (February 12, 1982) from Dr. Frank G. Sommers, President of Physicians for Social Responsibility:



We remain profoundly concerned about the threat of nuclear war, and the inability of governments on a national level to act decisively to defuse international tension.

In Hiroshima, 65 of 150 doctors died and most of the rest were injured. 1600 of 1780 nurses were dead or wounded. One hundred thousand died directly out of a population of two hundred and forty thousand. The 'effective yield' of that small weapon (by today's standards) was 14 thousand tonnes of TNT equivalent.

Today's existing 50,000 nuclear weapons contain the TNT equivalent of 3 tonnes for every child, woman, and man on this planet.

A modern 1 megaton (one million tonnes) bomb exploded over City Hall would kill 600,000, and injure or incapacitate 800,000 of Toronto's population. This would be the result of a night time attack without firestorm. An attack in daytime with firestorm, would cause 750,000 killed and 1,000,000 injured or incapacitated.

Downwind from a 1 megaton groundburst attack, 1,000 square miles would be covered with radioactive fallout.

We could expect 1 doctor to 1,700 survivors. If he or she worked 14 hours a day spending 15 minutes with each patient, it would take 26 days for each injured to be seen once. Accordingly, most people would die without medical help, without analgesics, in pain. The problem of disposal of a million dead in nuclear devastated Toronto would have to be dealt with, as well as the ensuing epidemics.

The social fabric would be destroyed; human life would be drastically altered.

Because the real limitations of therapeutic medicine, prevention is our only recourse, in the face of this unprecedented threat to public health. The only route to prevention lies in the progressive removal of nuclear weapons.

Nuclear bombs are not really weapons, but means of genocide.

Accordingly, we support the recommendations put forward by the Health Advocacy Unit related to the issue of Nuclear Weapons and Nuclear War, and urge their speedy adoption and implementation by the Board of Health, and City Council.

**The Local Board of Health also submits the communication (February 22, 1982) from the Mayor, City of Cambridge, Massachusetts:**

I am pleased to learn that the City of Toronto is considering positive action against the build-up of nuclear weaponry and the threat of nuclear war. I would like to encourage you in this important work by sharing with you our recent experiences in Cambridge and the significant benefits we have achieved through a community peace education campaign.

Cambridge, an international center of learning and technology, has long been considered a prime target for nuclear attack. Therefore, when the Massachusetts Department of Civil Defense in the spring of 1981 presented me and my colleagues on the Cambridge City Council with a plan of action for Cambridge

residents to follow in the event of such an attack, we were initially responsive. It soon became clear, however (thanks in part to the testimony of such international authorities as George B. Kistiakowsky and Dr. Helen Caldicott), that this plan — calling for the evacuation of Cambridge survivors to an outlying community — was a senseless one. If as we know it would be completely destroyed if even a single one-megaton bomb were dropped anywhere in our vicinity, and evacuating to a suburb 20 miles to the west would be futile.

We on the City Council accordingly decided to educate the people of Cambridge in our own way, not in how to escape in case of nuclear attack but rather in how to prevent attack through political action. We called for the development and publication of an educational pamphlet outlining the risks inherent in the arms build-up, specific effects on Cambridge in the event of nuclear attack, and concrete steps which individuals can take to express their concerns to their legislators. This pamphlet, which I believe you have seen, is entitled "Cambridge and Nuclear Weapons: Is there a place to hide?", and was distributed to every household in the city in September, 1981.

The response has been overwhelming. The pamphlet is now in its third printing (50,000 copies distributed), and is being translated into several foreign languages. It has been requested by individuals and organizations from around the country and the world who are eager to start peace education projects of their own. At home in Cambridge, the pamphlet has spawned a great deal of interest and involvement as well as several related peace initiatives. For example, the City Council recently passed a resolution calling for Cambridge to adopt a "sister city" in the U.S.S.R. and for the people of Cambridge to study the history and culture of that city in order to break down some of the misconceptions and barriers to communication which divide our two countries.

Our motivating principle throughout this project has been that, despite the illusion of security created by escalated defense spending and arms accumulation, nuclear war is a no-win proposition. If any people, nation, or culture is destroyed, we all suffer: there is no place to hide. The key to peace, and survival, lies in educating the people of the world about the dangers posed to all of us by the possibility of nuclear war, and about what each of us can do to help prevent it. One of our primary objectives in publishing the nuclear pamphlet was to set an example and develop a model for use by other cities which share our concerns about this critical issue. I encourage you, the Board of Aldermen, and the Department of Health of the City of Toronto to take these steps toward the peace education of your citizens. The stakes are considerable.

I will be glad to offer any further assistance you may need.

*The following persons appeared:*

- Reverend Clarke MacDonald, Chairman, Project Ploughshares
- Mr. Eric Fawcett, President of Science for Peace
- Alderman Sewell
- Alderman Gilbert

The recommendations in the report (February 4, 1982) from Dr. Trevor Hancock and Ms. Dawn Currie, and the Local Board of Health's recommendations thereon are:

- "1. That City Council direct the Department of Public Health, in consultation with the Public Information and Communication Services Division, City Clerk's Department, to develop a pamphlet on civil defence similar to that developed by the City of Cambridge, Massachusetts, and distribute it to every household in the City. The pamphlet should incorporate a tear off coupon or response sheet so that citizens can express their concern to their elected representatives."

The Local Board of Health recommends that the words "on civil defence" be deleted, and that after "City Clerk's Department", the words "and other interested groups" be added, and as so amended, the recommendation be adopted.

- "2. That the City of Toronto twin with a major Russian city and invite the Mayor and Council to visit Toronto."

The Local Board of Health forwards this without recommendation.

- "3. That the Local Board of Health direct the Medical Officer of Health to establish links with his counterpart in the chosen Russian city."

The Local Board of Health forwards this without recommendation.

- "4. That the Toronto Board of Education and the Metropolitan Toronto Separate School Board be requested to develop youth exchange programs with the chosen Russian city."

The Local Board of Health forwards this without recommendation.

- "5. That the Toronto Board of Education and the Metropolitan Toronto Separate School Board be requested to develop a curriculum on nuclear war and the promotion of peace at junior, intermediate and senior school levels, in cooperation with peace and disarmament groups in the City."

The Local Board of Health recommends that the word "nuclear" be added before "disarmament" and, as amended, the recommendation be adopted. The Local Board of Health notes that the Toronto Board of Education has already begun to develop a curriculum.

- "6. That in support of Recommendation 5 the Toronto Board of Education and the Metropolitan Toronto Separate School Board be requested to increase staff awareness, provide in-service training for staff and develop curriculum materials."

The Local Board of Health recommends the adoption of the foregoing recommendation.

- "7. That City Council express its opposition to the production of components for nuclear weapons in Canada, and specifically in Toronto, and further that it request the Provincial and Federal cabinets to do all within their power to halt such production, and instead convert the production to peaceful ends."

The Local Board of Health recommends the adoption of the foregoing recommendation.

- "8. That City Council urge that the Federal government spend 0.1% of Canada's defence budget on disarmament education and research."

The Local Board of Health recommends that the word "nuclear" be added before "disarmament", and, as amended, the recommendation be adopted.

- "9. That City Council accept its ongoing responsibility with respect to this topic and that it develop a mechanism to ensure that the issue of nuclear weapons and nuclear war continues to be dealt with by the City of Toronto."

The Local Board of Health recommends that the foregoing recommendation be adopted.

- "10. That a copy of this report be sent to every Board of Health in Ontario; the Boards of Health of other major Canadian cities; the Mayors of all of Ontario's municipalities; the Association of Ontario Boards of Health; the Ontario Public Health Association; the Ontario Medical Association; the Premier of Ontario; the leaders of the Ontario Liberal and New Democratic parties; all Metropolitan Toronto M.P.'s; the Canadian Public Health Association; the Canadian Medical Association; the Deans of Canada's medical schools; the House of Commons Standing Committee on External Affairs and Defence; the Prime Minister of Canada; the leader of the Opposition; the leader of the New Democratic Party; all Metropolitan Toronto M.P.'s; the City of Toronto Board of Education; the Metropolitan Separate School Board; the Metropolitan Toronto School Board; president of the Toronto Student Council; the Committee of Heads; the Toronto Fire Chief; the Chief of Metropolitan Toronto Police, and the Mayor, City of Cambridge, Massachusetts, U.S.A."

The Local Board of Health recommends that the foregoing recommendation be adopted.

- "11. That a copy of this report be sent to the following Toronto-based groups working to avert the threat of nuclear war and promote peace. Physicians for Social Responsibility; Science for Peace; Project Ploughshares; Cruise Missile Conversion Project, Hiroshima-Nagasaki Relived and Operation Dismantlement."

The Local Board of Health recommends that the foregoing recommendation be adopted.

The Local Board of Health also recommends that the Medical Officer of Health be requested to report on the possibility of nuclear accidents in Metropolitan Toronto and on the preparedness for such occurrences.



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## Faculty for December 5, 1981 Symposium on The Medical Consequences of Nuclear Weapons and Nuclear War

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IAN CARR, M.D., Ph.D., F.R.C.P.(C)

Professor of Pathology, University of Saskatchewan

EUGENE F. CARROLL, JR., M.A.

Rear Admiral, U.S. Navy (Ret.)

Deputy Director, Centre for Defense Information

ERIC CHIVIAN, M.D.

Staff Psychiatrist, Massachusetts Institute of Technology

Treasurer, International Physicians for the Prevention of Nuclear War, Inc.

WILLIAM EPSTEIN

President, Pugwash Canada

Member, Canadian Delegation to the General Assembly of the United Nations

FREDERICK B. FÄLLIS, M.D., F.C.F.P.

Professor and Chairman, Department of Family and

Community Medicine, University of Toronto

Director, Continuing Education, Faculty of Medicine, University of Toronto

ERIC FAWCETT, Ph.D.

Professor of Physics, University of Toronto

President, Science for Peace

Chairman, Canadian Committee of Scientists and Scholars

BERNARD FELD, Ph.D.

Professor of Physics, Massachusetts Institute of Technology, Editor-in-Chief, *Bulletin of the Atomic Scientists*

H. JACK GEIGER, M.D.

Arthur C. Logan Professor, Community Medicine, City College of New York

GEORGE IGNATIEFF

Chancellor, University of Toronto,

President, United Nations Association of Canada.

MIKHAIL I. KUZIN, M.D.

Professor of Surgery, Director, Vishnevsky Institute of Surgery, Member, U.S.S.R. Academy of Medical Sciences,

BERNARD LOWN, M.D.

Professor of Cardiology, Harvard School of Public Health,

President, International Physicians for the Prevention of Nuclear War, Inc.

FREDERICK H. LOWY, M.D., F.R.C.P. (C)

Dean, Faculty of Medicine, University of Toronto,

Professor of Psychiatry, University of Toronto.

FRANK G. SOMMERS, B.Sc., M.D., F.R.C.P. (C)

Lecturer in Psychiatry, University of Toronto

President, Physicians for Social Responsibility Inc., Canada

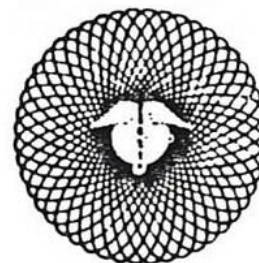
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## The Medical Consequences of Nuclear Weapons and Nuclear War

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Saturday,  
December 5, 1981

Auditorium  
Medical Sciences Building  
University of Toronto



Sponsored by:

Physicians for Social Responsibility  
(PSR/Canada), Inc.

Faculty of Medicine, University of Toronto

International Physicians for the Prevention of Nuclear War, Inc.

*"The splitting of the atom has changed everything save our mode of thinking, and thus we drift towards unparalleled catastrophe ..."*

Albert Einstein

This symposium is designed to educate the physician about the medical consequences of nuclear weapons and nuclear war. A broad based and renowned faculty will contribute expertise to the discussions.

Physicians for Social Responsibility (PSR/Canada), Inc., is a nonprofit, charitable organization committed to public and professional education on the medical implications of advanced technology. Information on PSR activities is available by writing, PSR, Suite 406, 360 Bloor Street West, Toronto, Ontario, M5S 1X1, Canada. Telephone: (416) 922-7335.

PSR/Canada's 1st National Assembly will take place Sunday morning, December 6, 1981, in Toronto.

## The Medical Consequences of Nuclear Weapons and Nuclear War

Saturday, December 5, 1981

- 8:00 a.m. Registration - Lobby,  
Medical Sciences Auditorium,  
University of Toronto
- 8:50 Welcome  
*Dr. Sommers*
- 9:00 Introduction  
*Dr. Lowy*  
**Medical Effects of Nuclear Weapons**
- 9:20 Moderator  
*Dr. Fallis*
- 9:30 Medical Implications of a Nuclear Attack on  
Toronto  
*Dr. Geiger*
- 10:20 Long Term Consequences of Nuclear War  
*Dr. Feld*
- 10:50 The Present Danger: How a Nuclear War  
Might Start  
*Rear Admiral Carroll*
- 11:20 A Brief Analysis of Civil Defense Plans for  
Nuclear War  
*Dr. Chivian*
- 11:40 Psychological Factors & Effects  
*Dr. Sommers*
- 12:00 Panel: Questions from Audience
- 12:30 Film: Hiroshima-Nagasaki - 1945
- 12:45 LUNCH (no-host)
- The Medical Profession and Nuclear War**
- 2:00 p.m. Moderator  
*Dr. Fawcett*
- 2:15 Canada's Involvement in the Nuclear Arms  
Race  
*Prof. Ignotieff*

- 2:30 Why Physician Involvement in Preventing  
Nuclear War  
*Dr. Lown*
- 3:00 The Physicians' Movement Against Nuclear  
War in the U.S.S.R.  
*Dr. Kuzin*
- 3:30 How One Canadian Physician became Involved  
*Dr. Carr*
- 3:40 Preventing Nuclear War  
*Prof. Epstein*
- 4:00 Panel: Questions from Audience
- 4:30 Closing Remarks  
*Dr. Sommers*
- 4:45 Adjourn

### Continuing Education Credits

This Conference is approved by the College of Family Physicians of Canada for 6 hours of study credits.

Funding Support From:

Office of the Ambassador for Disarmament,  
External Affairs, Ottawa.

### Registration Form

Please send this application to Continuing Education, University of Toronto, Faculty of Medicine, Room 114 FitzGerald Building, Toronto, Ontario, M5S 1A8. (416) 978-2718.

☐ Please find enclosed cheque payable to the University of Toronto for The Medical Consequences of Nuclear Weapons and Nuclear War.

FEE: \$30.00

\$10.00 Students

Name \_\_\_\_\_ Phone \_\_\_\_\_

Address \_\_\_\_\_ City/Town \_\_\_\_\_ Postal Code: \_\_\_\_\_

Profession/Occupation (Physician, Nurse, etc.) \_\_\_\_\_ Specialty: \_\_\_\_\_



The City of Toronto  
Arthur C. Eggleton  
Mayor

TO: EXECUTIVE COMMITTEE  
FROM: MAYOR ART EGGLETON  
DATE: JANUARY 13, 1983  
RE: ITEM 34

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The following motion was prepared as a motion for the Order Paper for Council's meeting of January 24, 1982. However, inasmuch as Item 84 on the Executive Committee Agenda has raised this matter, I recommend the adoption of the following motion:

Whereas on November 8, 1982, 79 per cent of the City of Toronto voters chose to support nuclear disarmament by all nations on a gradual basis with the ultimate goal of a world free from nuclear weapons;

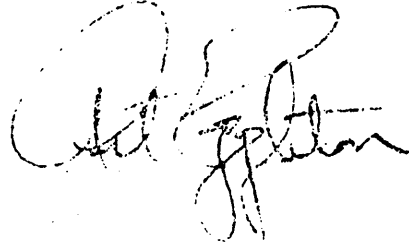
And, whereas Council adopted motions moved by the Mayor on November 16, 1982 respecting the presentation of ballot results to the House of Commons; the Canadian sponsorship at the U.N. of a global referendum on nuclear disarmament; and the cessation of plans for cruise missile testing in Canada;

And, whereas the declaration of the City of Toronto as a "nuclear weapons free zone" would be a further indication of Council's commitment to nuclear disarmament;

And, whereas other jurisdictions including Wales, Glasgow, London (and 130 other municipalities in Great Britain), Sydney, Athens, Garrett Park, Maryland (the first U.S. zone, May 3, 1982) and Toronto's twin city of Amsterdam, have declared themselves nuclear weapons free zones;

.../2

Therefore, be it resolved that Council indicate its intention that the production, testing, storage, transportation, processing, disposal or use of nuclear weapons or their components not be undertaken within Toronto by the declaration of the City of Toronto as a nuclear weapons free zone; and that this decision be forwarded to the Prime Minister of Canada.

A handwritten signature in dark ink, appearing to be "John G. ...", is written over the text. The signature is stylized and cursive.



*What about civil  
defence procedures?*

**T**his pamphlet describes the effects of an isolated attack on Toronto, in which case, survivors could well receive emergency shelter, medical care, food and water supplies from outside sources. In the event of nuclear war however, Toronto would likely be one of many North American targets. Food, water and soil contamination across the continent could last years, perhaps centuries and civil defence procedures could protect no more than a handful of selected people - for the rest, there would be no help and no safe place to go.

*What can we do?*

**T**oronto City Council, as well as producing this pamphlet, recommended that information be developed to educate teachers and students in Toronto schools about the issues of nuclear war, disarmament and peace.

You can help too. Learn more: the Toronto Public Libraries can provide you with a wealth of material about nuclear weapons and the effects of nuclear war (so can disarmament groups). Discuss the problem: talk about disarmament with your family and friends, at your local school, church or club. Ask questions and get answers from the government agencies and interest groups involved. Draw your own conclusions: don't assume that other people know more about this issue than you do. Let your Alderman, M.P. and M.P. know how you feel about nuclear disarmament and express your views on your election ballot November 8. Nuclear disarmament, yes or no. It's your decision.

*For information  
in other languages*

**P**our obtenir une copie de ce dépliant en Français prière de téléphoner au bureau du Greffier Municipal de l'hôtel de Ville, 367-7306.

Para obter uma cópia deste folheto em Português, telefone para a Secretaria da Câmara de Toronto, 367-7348.

Per ottenere copia di questo opuscolo in Italiano, rivolgersi alla Segreteria Comunale, Municipio di Toronto, 367-7347.

Γιά αντίτυπο αυτού του φυλλάδιου στα Έλληνικά, παρακαλείστε να τηλεφωνήσετε στο Γραφείο Γραμματείας του Δήμου, 367-7388

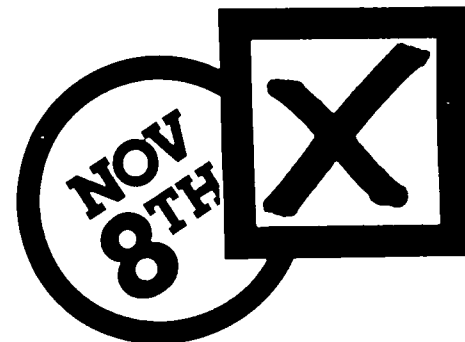
如欲索取這小冊子的中文譯本,請電大會堂市府秘書處  
電話: 367-7307.



City of Toronto

© 1982

# **—You— DECIDE**



**O**n November 8, 1982, you'll be asked to vote on the issue of nuclear disarmament. Included on your Municipal Election ballot will be the question,

*"Do you support nuclear disarmament by all nations on a gradual basis with the ultimate goal of a world free from nuclear weapons, and mandate your federal government to negotiate and implement with other governments steps which would lead to the earliest possible achievement of this goal?"*

If you support the goal of bilateral nuclear disarmament, vote yes; if you don't, vote no. It's your decision.

# What one nuclear bomb would do to Toronto

**A**fter learning the facts about nuclear war, Toronto City Council decided, "to ensure that the issue of nuclear weapons and nuclear war continues to be dealt with by the City of Toronto." As a first step, Council directed that this pamphlet be produced and distributed to make Toronto residents aware of their chances of surviving a nuclear attack.

*Nuclear weapons:  
How many?  
How powerful?*

**T**here are approximately 50,000 nuclear bombs in the world - the United States and the Soviet Union lead in nuclear weaponry; South Africa, Israel and Libya either have nuclear weapons, or have the potential for building them. The possession of nuclear arms isn't limited to countries; terrorist groups may be able to make and detonate crude nuclear bombs.

Both the U.S. and the Soviet Union can mount a nuclear attack using missiles launched from land, by sea from submarines or dropped from bombers. A missile can travel 12,000 km (7000 miles) in 30 minutes, hitting its target within an accuracy of 165 m (180 yards) or about the length of a football field--and many missiles carry more than one warhead.

A one-megaton bomb, a medium-sized weapon by today's standards, has the explosive power of one million tons of TNT - the equivalent of a trainload of TNT 1127 km (400 miles) long - and has 70 times the destructive power of the bombs dropped on the Japanese cities of Hiroshima and Nagasaki in 1945. A single submarine equipped with nuclear weapons can deliver the explosive power of all munitions used in World War II to 160 separate targets.

*If you were in  
downtown  
Toronto - within  
2.4 km (1.5 miles)  
of the blast.*

**E**veryone in the downtown core, bounded by Bathurst St., Bloor St., and the Don Valley Parkway would immediately be vaporized, crushed, torn apart by winds up to 966 km (600 miles per hour) or

**S**hould there be a nuclear war, Canada's urban centres would be the first targets, and Toronto, the

country's largest city, would most certainly be hit. A one-megaton nuclear weapon detonated in the air above downtown Toronto during business hours would kill 750,000 people immediately and severely injure more than a million others; if detonated during the early evening, it would kill 624,000 residents and severely injure another 795,000. It would destroy 65 to 80 percent of all the City's hospital beds along with blood banks, antibiotics, sterile supplies, diagnostic and life support systems, operating theatres and emergency treatment centres. The blast would kill more than 5000 physicians, leaving only one doctor for every 1000 survivors - with only a little black bag for assistance.

killed by lethal doses of radiation. Every building in the area, including City Hall, the Parliament Buildings, the Stock Exchange, Union Station and downtown hospitals would disappear in a crater 20 stories deep.

*If you were further  
away - within  
7.2 km (4.5 miles)  
of the blast.*

**T**he rest of the City - the Humber River to the west, Lawrence Ave. to the north and Victoria Park to the east - would be totally destroyed by the blast and by the fires which would burn out of control for days. Five of every 10 people in this outer ring would die immediately; many of the rest would suffer third-degree burns and severe injuries caused by flying debris and collapsing structures, dying sometime later from burns and radiation exposure.

*If you were within  
13 km (8 miles)  
of the blast.*

**I**nitially, as many as 90 percent of your relatives and friends who live in the suburbs would survive. Many of

those living within the area bounded by Kipling Ave., Sheppard Ave. and Midland Ave. would suffer extensive second- and third- degree burns or serious injury as a result of being buried or hit by heavy debris blown by 160 km per hour (100 mph) winds. Combustible material - wood, curtains, carpets, furniture etc. - would catch fire and under certain circumstances, a giant firestorm could occur, sucking up all the air and causing many to die of lack of oxygen.

Many people in the suburbs and the nearby regions of Peel, York and Durham would die of injuries, radiation exposure and lack of adequate shelter and proper medical care. There would be serious food shortages, widespread water contamination and survivors would experience sickness and disease unlike that occasioned by any other war - widespread epidemics of plague, typhus, cholera and other diseases; radiation sickness and cancer; genetic defects in succeeding generations.

