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Canada's ability to face a Chemical Biological Radiological Nuclear Terrorist Attack

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ABSTRACT

Canada's ability to face a Chemical Biological Radiological Nuclear Terrorist (CBRN) Attack

The threat of terrorism has increased following the attack on the World Trade Centre Towers on 11 September 2001. This event highlighted the fact that first responders and Canadian government agencies are unprepared to handle a major chemical biological radiological nuclear (CBRN) attack of this scale and the requirement exists for a broad-based interdepartmental response based on better balanced accountability, authority and responsibility. This paper will explore three main aspects by discussing the reality of a terrorist threat to Canada, including weapons of mass destruction (WMD); Canada's current level of response with a focus on failure areas; and finally suggest the steps necessary to deal more effectively with the CBRN threat. The paper concludes by suggesting the adoption of a CBRN plan similar to the one adopted in the United States, but under the direction of the Office of Critical Infrastructure Protection and Emergency Preparedness (OCIPEP) is needed to address many response gaps.

Canada's ability to face a Chemical Biological Radiological Nuclear Terrorist Attack

Normally public awareness of terrorism in Canada is below the threshold of perception. It exists but no real attention is paid to it. People are aware that terrorism occurs through media reports, however since the attacks of 11 Sep 01 public awareness of the threat closer to home is now more heightened.

This awareness makes people wonder what would have happened if terrorists had used Weapons of Mass Destruction (WMD)[1] instead of aircraft to perform the attacks. The possibility is real and has already occurred on two separate occasions. Similarly, March 1995 sarin gas attack in the Tokyo subway made people realise that NBC terrorism was a reality and that it was only a question of time before a major attack occurred.[2] Terrorist mailings of anthrax-contaminated letters in the United States of America (USA) has sensitised the population to the fact that chemical biological radiological nuclear (CBRN) terrorism can happen, and long-term disruption of the daily routine that can result. Both of the above attacks did not involve mass destruction and mass casualties, but could have. Although the destructive effects of the sarin and anthrax attacks were small and limited in scope, they will not easily be forgotten because of the potential number of deaths they could have caused.

Some Canadians think that terrorism cannot happen in Canada. They do not worry because they do not believe that there is a threat. Some could point out that the USA might be a target because it is a superpower with global involvement but Canadians are not at risk because

[1] WMD are based on chemical biological radiological and nuclear (CBRN) devices which are also known as nuclear biological chemical (NBC) devices. In this essay, the terms CBRN and NBC will be used interchangeably.

we are nice people. They neglect the emerging threat from worldwide terrorism and therefore many do not worry about terrorism and its potential threat to Canadians.

At the same time, many Canadians believe that their government is capable of handling a major CBRN incident or accident, and that we do not need to worry. The public think that our federal emergency response system is well organised to take care of it. Many government press conferences since last year's attack on the World Trade Centre would have the uninformed believe that all is well and that we are prepared to face CBRN incidents of any size.

However, the CBRN threat is no longer something that just happens in other countries, and Canada must be able to deal with such an attack on its own soil. The aim of the thesis is that Canada must adopt a single agency organisational structure to deal with terrorist CBRN attacks. It will look at consequence management or the actions after the event and not with actions preventing the event. This thesis will explore three aspects of this proposed restructuring. The first aspect will be to show that a CBRN threat to Canada is real. The second aspect will examine the current emergency structure used by our government, and its inadequacy. Finally, this thesis will propose a new more workable emergency structure.

The first thing that must be established is that Canada is currently facing a CBRN terrorist threat that is increasing in importance. In a February 2002 interview, Michael Kelly, a senior official of the Canadian Security and Intelligence Service's (CSIS) Counter-Terrorism (CT) Branch, said, "The threat is real, it's immediate, it's here". [3] Forty-five of the seventy

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[2] Brad Roberts. Editor. Terrorism with Chemical and Biological Weapons: Calibrating Risks and Responses. Alexandria: VA, USA. The Chemical and Biological Arms Control Institute, 1997. 2.

[3] Leonard, Stern. Canada Faces 'Real' Terrorist Threat. Retrieved 8 March 2002 from Canada.com news network web site: http://www.canada.com/components/printstory/printstory.asp?id={F04BA4BF-AB2C-4411-B32}

worldwide biological attacks reported in the 20th century occurred in the last ten years.[4] To date, these attacks have not been very effective although they have increased in frequency. Kelly warned that it could also happen here. Unlike many other western developed countries, Canada has experienced relatively few foreign terrorist attacks on its own territory in the last 30 years. However, this is not to say that terrorist groups or activists do not operate in Canada. While violent incidents are rare in Canada, support for terrorist activities is more prevalent. Even though fundraising, procurement and support activities have decreased; the planning of attacks in Canada has increased.[5] It is estimated that with the possible exception of the USA, there are more international terrorist groups active in Canada than in any other country in the world.[6] The mere presence of so many terrorist groups within the country is worrisome and increases the potential threat faced by Canadians.

Before discussing how the threat to Canadians is assessed, it is necessary to define terms such as terrorism and asymmetric threats. The Canadian Security and Intelligence Service (CSIS) Act defines terrorism as:

> "activities within or relating to Canada directed toward or in support of the threat or use of acts of serious violence against persons or property for the purpose of achieving a political objective within Canada or a foreign state".[7]

Consequently, the very nature of terrorism makes it asymmetric the meaning of which is not clearly defined. The Canadian Forces (CF) defines an asymmetric threat as follows:

> "An attempt by an opposing party to avoid the traditional strengths of our existing military force by employing unexpected or unusual techniques to gain an advantage".[8]

The asymmetric threat must be measured in some way to determine the urgency of the threat. Capability and intent can be used to determine threat levels. The threat level can be represented as the mathematical product of the capability of the terrorist to inflict damage and/or to kill, and the level of damage he is prepared to use to reach his goals. Basically, the combination of two variables capability and intent yield the resulting threat level that could be anticipated. The higher the number, the bigger the threat a nation faces.

When it comes to a CBRN threat, two questions must be answered to validate the capability of the terrorist to carry out his threat: Is it technically possible for a given terrorist group to mount or conduct an attack, and are the terrorists intending to use CBRN weapons? The first question addresses the technical feasibility of a given terrorist group to use and/or develop a CBRN weapon or device. The technical capability may be given to the terrorist willingly by countries sympathetic to the terrorist cause, that have their own CBRN programs and some are prepared to provide the specialised technical capability and know-how to terrorists.

Terrorists can utilise many ways to obtain the raw materials necessary to prepare a CBRN attack. Many states, such as Iraq and North Korea, are capable and willing to sponsor terrorism.[9] However, it is believed that the probability is low that such a state would provide a military-grade chemical or biological weapon to a terrorist group because of the political implications

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[8] Canada. Department of National Defence. Defence Planning Guidance 2001, Ottawa: Department of National Defence, 2001. GL-1.

[9] U.S.A. The President's State of the Union Address 29 January 2002. The United States Capitol, Washington, D.C. 2002. Retrieved 8 March 2002 from The White House web site: http://www.whitehouse.gov/news/releases/2002/01/20020129-11.html

should their direct involvement be discovered.[10] Therefore, the acquisition and use of state provided materials is low.

Alternatively, the terrorist can steal or illegally acquire NBC materials through third-party state-sponsored terrorist networks, theft/smuggling rings, and other trans-national terrorist groups. The possibility of theft of CBRN materials from the former USSR countries is of concern as crime syndicates and smuggler rings attempt to capitalize on the demise of the Soviet military infrastructure. With the lax security of some facilities, and the poor economic conditions, organised crime syndicates in the former USSR could realistically serve as intermediaries for the acquisition of CBRN materials. Trans-national terrorist organisations, such as Al-Quida, have a global reach and the funding necessary to buy materials for themselves or for resale.[11] These trans-national organisations have the capability to strike at will, increasing and compounding the threat. The chances of theft are higher and therefore it is a viable way for terrorist to acquire CBRN materials.

If the terrorist cannot acquire already made CBRN weapons or materials, he can build his own weapon. Chemical agents can be produced relatively easily with or without access to a well-equipped laboratory. The Aum Shinrikyo's terrorist group carried out a chemical attack using nerve gas on the Tokyo subway using the gas produced at a sophisticated facility staffed by educated and trained personnel. The knowledge on sarin production is available on the Internet and from other sources. The technical barriers for chemical production and dissemination are

[10] U.S.A. Office of the Secretary of Defense. Proliferation: Threat and Response. Washington, D.C. Department of Defense, 2001. 61

[11] U.S.A. Office of the Secretary of Defense. Proliferation: Threat and Response. 63.

considered low enough to be within the reach of many terrorist organisations.[12] However, nuclear capability is a different story.

The technical barriers for producing nuclear and biological devices are more complex and problematic to overcome. The opinion of experts is that a small group of technicians that could be brought together by a given terrorist group would be unlikely to overcome the engineering difficulties associated with the construction of a nuclear explosive device. The more likely nuclear terrorism threat will originate from the dispersal of radiological material by conventional means such as by detonating commercial explosives.[13] The resulting explosion would spread contaminants over an area at least equal to the blast radius and require evacuation and clean up that would disrupt daily routines indefinitely. The net result of the technical barriers being brought down increases in the probability of this specific threat turning into a reality. The same can be said for biological weapons.

Biological agents can be effective and deadly, even in relatively small quantities, when dispersed in water or in the air, but their effectiveness can be degraded by improper dissemination. The greatest technological barriers affecting the use of such agents are the unpredictability of the effect to be obtained and the lag time between the agent dispersal and the time any significant effects are noticed.[14] Many experts contend that the effective dissemination of the biological agent poses greater challenges than their manufacture.[15] The US Congressional Office of Technology Assessment (USCOTA) estimated that a ton of sarin nerve gas disseminated under ideal condition by a crop duster aeroplane would result in 3000-8000 deaths

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[12] Brad Roberts. Editor. Terrorism with Chemical and Biological Weapons. 2.
[13] Canada. Canadian Security and Intelligence Service (CSIS). Report #2000/02. Chemical, Biological, Radiological and Nuclear (CBRN) Terrorism. Canada: CSIS, 1999. 2-3.
[14] Brad Roberts. Editor. Terrorism with Chemical and Biological Weapons. 9.

depending on wind conditions and the population density in the affected area.[16] Such effects and lethality must be taken seriously. At the high end or worst-case scenario, CSIS planning baseline estimated that up to 100,000 people could be exposed and thus need some form of medical attention.[17] Such casualty numbers warrant efforts in denying terrorist access to technologies that would enable them to perform their deeds.

Terrorists are looking at increasing the number of victims for greater effect. Assuming that the technological barriers have been brought down, do the terrorist intend on using such weapons to achieve their aims? Although the 11 September attack did not use CBRN products, it resulted in nearly 3,000 deaths. Other terrorists may use that number of dead as a benchmark that they would have to exceed to be noticed or taken seriously. One possible way to achieve the number of victims would require the use of NBC devices. In September 1998, the US Federal Bureau of Investigation (FBI) director stated that the Bureau had investigated over 100 CBRN cases in 1997, tripling the number of cases from the previous year.[18] The increase number of CBRN cases and the threat of using NBC devices definitely have the potential to create situations where the number of victims could be greater than 3,000 people. Terrorists may be driven to execute more extreme acts of violence to obtain more publicity or because they are facing defeat and cannot accept the situation.

Although a precise estimate of the difficulty of a CBRN attack is difficult to arrive at, the technical obstacles to produce a device for attack are by no means insurmountable. The availability of NBC materials and the means to produce terrorist devices based on that

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[15] Canada. CSIS. Report #2000/02. Chemical, Biological, Radiological and Nuclear (CBRN) Terrorism. 2-3.
[16] Sokolski, Henry. Rethinking Bio-Chemical Dangers. 3.
[17] Canada. Solicitor General of Canada. Developing Options. 25.
[18] Canada. CSIS. Report #2000/02. Chemical, Biological, Radiological and Nuclear (CBRN) Terrorism. 4.

technology means that the threat is real. Technically, the probability of such an attack will increase with the greater availability of production technology.

Some groups will be willing to use NBC devices while others will refuse because of ideological beliefs or personal safety reasons. Lets first look at three possible reasons for not using such devices. Firstly, they could feel morally that the reaction of the group they target would be counter-productive to their stated aims. This is not a very strong deterrent but if the terrorists are trying to keep the sympathy for their cause, it might give them pause. Secondly, there are the personal risks involved in the production and dissemination of such devices. Biological and nuclear materials have high levels of toxicity and require specialised handling and storage to be used safely. While it is understood that the end product of terrorism is some form of violence, it is not generally directed at the terrorist himself or his immediate group. This is important for the survival of his group and may take into account that the location used to produce the devices is often in populated residential areas.[19] Thirdly, with respect to biological devices, the unpredictability of the agents used and how they are affected by environmental conditions complicates the terrorist's job of delivering the product and might be enough to discourage anyone but the most determined and technologically sophisticated terrorist from using these types of devices.

Now let us look at the reasons why they will use such means. There are terrorists who have no such moral barriers and some are even willing to commit suicide to achieve their aims. In a recent CSIS CBRN assessment, three current trends were identified: "the increase in high-casualty, indiscriminate attacks", "the proliferation of NBC weaponry, materials and technology

[19] Canada. Canadian Security and Intelligence Service (CSIS). Biological Terrorism. Retrieved 21 January 2002 from web site: http://www.csis-scrs.gc.ca/eng/miscdocs/purv_e.html. 31.

available worldwide" and "the increased in inter-ethnic and religiously-inspired violence, with fewer humanitarian inhibitions."[20] Many terrorist groups, including Osama Bin Laden and the Al-Quida network have openly said that if they can acquire such devices, they would use them.[21] The fact that even one international terrorist group is willing to use such devices, raises the overall risk that some other group will follow suit in an effort to increase their perceived power and prestige. Terrorists that have both the technical means and the will to use CBRN devices to advance their goals create a deadly combination and put all people at risk. Consequently, Canada currently faces a NBC terrorist threat that will increase in scope as time goes by.

Having determined that the threat is no longer hypothetical, it is necessary to review how the current Canadian government emergency structure would deal with a major CBRN event and determine if it will succeed or fail. To add some perspective and focus, the reader should keep in mind the Solicitor General comments.

> "…the nature of Canadian federalism is such that preventing or responding to a terrorist incident shall require concurrent, co-operative and supportive action by federal, provincial, territorial and municipal governments, departments and agencies."[22]

The Solicitor General of Canada (SGC) is the lead agency responsible for co-ordinating the response to the terrorist incident while the Minister of Foreign Affairs (MFA) has the same role for incidents occurring outside Canada but involving Canadians abroad. Furthermore, the MFA has the lead if a hijacked aircraft is flying over Canadian airspace but intends to land in another country. Lastly, the lead agency response returns to the SGC if the aircraft is to land within

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[20] Canada. CSIS. Report #2000/02. Chemical, Biological, Radiological and Nuclear (CBRN) Terrorism. 4.
[21] U.S.A. Office of the Secretary of Defense. Proliferation: Threat and Response. Washington, D.C. Department of Defense, 2001. 63.
[22] Canada. Solicitor General of Canada (SGC). The National Counter-Terrorism Plan. Ottawa: Canada: SGC, 2000. 3-1

Canada.[23] In other words, the determination of lead federal agency for CBRN or terrorist incident is a complex undertaking with many possible changes in lead-agency taking place over short periods of time depending on terrorist demands or acts. This becomes even more complex when the act affects multiple levels of government.

The various levels of government federal, provincial, and municipal form a matrix of vertical and horizontal structures that must communicate with each other to be effective. The municipal, provincial and federal levels of government generally represent the vertical portion of the structure. The various provincial governments and the federal departments and agencies can represent the horizontal structure. The matrix formed by the vertical and horizontal levels of governments allows for the flow of vertical or horizontal communications but does not lend itself well to communicating diagonally across levels. Many people appearing before the Special Senate Committee on Security and Intelligence (SSC-SI) reported on the importance of personal relationship for the purpose of day-to-day co-ordination.[24] The implication being that the current communication structure is either lacking or inadequate.

The current structure has not been tested and is based more on ad-hocery and co-operation than on a solid, closely co-ordinated and mandated approach to consequence management. Consequence management is generally understood to mean the management of the overall responsibility for managing the aftermath of a disaster or incident.[25] A report from the SSC-SI criticised the National Counter-Terrorism Plan (NCTP). Specifically, the report comments that although the provinces have been consulted during the NCTP revision process,

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[23] Canada. Solicitor General of Canada (SGC). The National Counter-Terrorism Plan. 3-1

[24] Canada. *The Senate*. The Report of the Special Senate Committee on Security and Intelligence. Ottawa: *The Senate*, Special Senate Committee on Security and Intelligence. 1999. 31.

they have yet to actually sign-on or adopt it as their own.[26] A hypothetical example involving the Royal Canadian Mounted Police (RCMP) and the Peel Regional Police (PRP) exemplified the lack of clarity in co-ordination at Pearson International Airport. The report read:

> "Peel Regional Police is the lead agency in the event that terrorists hijack an aircraft and the RCMP is the lead agency in the event that *politically motivated* terrorists hijack the same aircraft…"[27]

The Senate Committee goes on further and says that "[i]n the absence of examples of the system breaking down, the Committee is prepared to accept that it will work".[28] Faith in a system based on a lack of observed failures does not guarantee that the system will work when called upon.

With jurisdiction split between the federal and the provincial/local governments when dealing with terrorist and non-terrorist events involving CBRN products, a lack of cohesiveness or unique leadership could be expected. The "*Emergency Preparedness Act"* mandates every federal Minister responsible for a department or an agency to develop emergency plans for contingencies in his area of responsibilities" but does not specify the limits of their authority and accountability with respect to those plans.[29] Primary overall responsibility for the management of the consequences of a terrorist act belongs to the provincial government who is charged with the management and conduct of emergency operations within its boundaries.[30] If a province's resources are overwhelmed, it can request help from the federal government on a cost recovery basis, except when a national emergency is declared.[31] Upon request, the Office of Critical Infrastructure Protection and Emergency Preparedness (OCIPEP) would step in as the lead

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[25] Canada. Emergency Preparedness Canada (EPC). Revised Draft. Counter-Terrorism Consequence Management Arrangements. Ottawa: EPC, 1998. 10.
[26] Canada. *The Senate*. The Report of the Special Senate Committee on Security and Intelligence. 28-29
[27] Canada. *The Senate*. The Report of the Special Senate Committee on Security and Intelligence. 39.
[28] Canada. *The Senate*. The Report of the Special Senate Committee on Security and Intelligence. 40.
[29] Canada. Emergency Preparedness Canada. Counter-Terrorism Consequence Management Arrangements. Revised Draft, EPC, 17 Feb 1998. 8
[30] Canada. Emergency Preparedness Canada. Counter-Terrorism. 10

federal agency and assist in the management of the consequences of a CBRN attack. However, if it were a large-scale incident threatening public health, the federal lead agency would become Health Canada. The concept of lead department has merit, but when several agencies are competing to co-ordinate functions, the result is a limitation of accountability and a hindrance to the unity of effort due to the lack of overall authority to get the job done, and not all are equally capable. The result is that the public may suffer needlessly because of bureaucratic faux pas, infighting, or plain lack of decision-making in time of crisis. The balance between acceptable risk and preparedness will be judged following the response to an attack on Canada and the soundness of its emergency plans.

The Government of Canada determines the level of risk it is willing to accept and designs its emergency response plans accordingly. The threat to Canada from spill over attacks on US metropolitan centres near the Canadian border is greater than the threat to Canada itself. Therefore, there is a real requirement for Canada to be able to deal with potentially large-scale incidents. Unfortunately, there are gaps in our current emergency response capability. The following paragraphs will address the current response capability gaps with respect to CBRN attacks and their direct impact on emergency plans, equipment use, acquisition, and stockpiling, and training.

Four plans exist that could be employed to guide the actions and responses in the event of a CBRN terrorist incident. These are: the NCTP headed by Solicitor General of Canada (SGC), the Federal Nuclear Emergency Plan (FNEP) headed by Health Canada, the Food and Agriculture Emergency Response System (FAERS) headed by Agriculture Canada and the Canadian Food Inspection Agency, and lastly the National Support Plan (NSP) under the

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[31] Canada. Solicitor General of Canada. Developing Options. 14.

auspices of OCIPEP. Basically we have four federal level plans each headed by a different department having its own agenda. Furthermore, all four plans could be used singly or in combination depending on the actual situation.[32] Therefore, a certain amount of doubt could be felt as to the likeliness that our plans would work reliably.

Let us focus on the NCTP as a typical example of a plan and see how it is linking to provincial, territorial and municipal plans. The NCTP does not address disaster-level CBRN incident but instead focuses on criminal offences and law enforcement. Canada's handling of such a crisis is ripe with dangers when one realises that the responsibility for dealing with such disaster-level crisis management is not "clearly delineated either in legislation, federal policy or explicit intergovernmental agreements".[33] In short, it is a plan without firm direction from a single leader to direct the actions needed to cope with the events. Provincial and territorial governments are responsible for the overall management of the consequences of a CBRN or terrorist attack on its territory. Federal assistance, when provided, must comply with existing arrangements at all levels of governments.[34] These plans are expected to generally comply with the essence of the directives given in the federal-level plans. In turn, it would be expected that municipal plans would be compliant with provincial directives when it comes to CBRN terrorist attacks and responses.

Are these municipal expectations based on facts or on wishful thinking? According to a 2001 report from the SGC, response capability gaps exist for all types of CBRN terrorism when

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[32] Canada. Solicitor General of Canada. Developing Options. 14.
[33] Canada. Solicitor General of Canada. Discussion Paper. Developing Options to Strengthen National Consequence Management Response Capability for Terrorist Incidents. Canada: SGC, 2001. 14
[34] Canada. Solicitor General of Canada (SGC). The National Counter-Terrorism Plan. 3-14

it comes to generic emergency response plans.[35] Most communities have municipal plans describing the expected roles and responsibilities when responding to emergencies. However, no generic guide or model exists for first responders such as policeman, firefighters, emergency medial services (EMS) and Hazardous Material Response Teams (HAZMAT) for "interagency co-operation, co-ordination and operational protocols" to meet the demands of a CBRN terrorist incident.[36] Also, most of the existing plans do not provide national guidelines or response templates to guide first responders in the development of municipal plans. The current link-up between the plans weakens the linkages and increases the chances of having conflicting directives when dealing with CBRN emergencies/disasters. Also, the plans do not indicate or provide for the protocols or standards on the equipment first responders should procure or use.

Considering that there seem to be response capability gaps in our plans lets review the situation concerning the equipment and training that would be necessary to carry out the various plans. Let us start with the needs or capability of the equipment requent0.02eT00141le CoenCBRNt

ry to deal with CBRN incidents.

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radiological/nuclear particles. However, in general, these personnel are not aware of the inherent protection offered by their normal equipment with respect to CBRN products. Most police and EMS personnel have no protective equipment although they are likely to be the first people at the scene of an incident.[37] This situation can result in increase chances of casualties as well as an increase in the risk of spreading the effect of a bio-terror attack through contagion.

Detection equipment for all CBRN products is non-existent at municipal level. First responders must rely heavily on federal, provincial or private sector assets to identify the hazards they may encounter. The end result is the creation of unacceptable delays in identification of the threat and the administration of first aid treatment protocols, thereby increasing the probability of casualties amongst first responders.[38] Firefighters and HAZMAT personnel are trained for decontamination tasks involving normal industrial chemicals. However, they lack the specific knowledge and special equipment necessary to conduct extensive decontamination when non-commercial products are used. Furthermore, if nuclear radiation is involved, the only known method of disposing of the irradiated materials is through permanent removal and containment. Police and EMS personnel decontamination capability are non-existent or extremely limited.[39]

Lastly, medical stockpiles of first aids drugs used to vaccinate or treat the large number of casualties that may results from CBRN attacks are only available at the provincial or federal level. There are also practical considerations such as shelf life and replenishment of stocks to consider. Overall, the availability of first aid drugs is totally lacking at the municipal level where they would be first required.[40]

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[37] Canada. Solicitor General of Canada. Developing Options. 19,20,21,22.
[38] Canada. Solicitor General of Canada. Developing Options. 19,20,21,22.
[39] Canada. Solicitor General of Canada. Developing Options. 19,20,21,22.
[40] Canada. Solicitor General of Canada. Developing Options. 19,20,21,22.

Implied but not specifically stated in the SGC study, are the potential equipment compatibility problems associated with the fact that municipalities are responsible for equipment procurement, but have no stated common federal minimum standards to refer to in their equipment acquisition. They buy what they think they need, instead of what they really need. The previous paragraphs summarise the equipment capability gaps, but there is also shortfalls in the training requirements.

First responder training is geared to deal with day-to-day occurrences in their area of expertise up to and including small commercial chemical spills. While some training may touch on terrorism scenarios, full-scale CBRN terrorism training requirements are above and beyond the scope of most municipalities. Not surprisingly, they lack the emphasis on awareness, use of special equipment and protocols, as well as the interagency co-operation and co-ordination necessary to contain the effects of these incidents.[41] The net result of this emphasis on day-to-day occurrences training leaves the first responders facing increasing risks due to a lack of knowledge in the handling and response to CBRN incidents in their training. Furthermore, first responder performance at the incident scene may be hampered by the lack of CBRN specific training and the fears normally associated with dealing with such dangerous products.

Only four Canadian organisations offer CBRN counter-terrorism training to first responders. The SGC Operational Readiness Program seminars normally offered six times a year and focussing on awareness, available federal resources and the issues directly affecting first responders at the local level. The RCMP/DND CBRN course for police explosive ordnance disposal technicians to handle suspected packages is offered once a year. The Defence Research

Establishment Suffield (DRES) introductory course for first responders on chemical and biological warfare agents provides the participants with rudimentary knowledge to effectively deal with chemical or biological incident. Also, the existing training in the form of seminars or conferences for physician, EMS technicians and hospital staff has no CBRN terrorism component leaving that whole group without the required knowledge to deal with incidents.[42] Overall, very limited training opportunities are available to first responders at all levels to improve their knowledge and skills through realistic training.

In summary, the government matrix structure seems to facilitate vertical communications but impedes lateral cross-communications essential to the co-ordination of efforts. The federal emergency plans are each developed and led by a different department with their own focus and internal priorities, and yet, we expect these plans to work seamlessly when called upon. These plans form the backbone from which our first responder must decide which equipment to buy and which training to undertake, yet we do not seem to provide them a single standard from which they could build-on to further their expertise. We will fail to deal with the threat because our current organisational approach is fractured and splits the responsibility, authority and accountability necessary to succeed.

We have seen that the CBRN threat cannot be discounted and that our current government emergency structure is unable in its current form to deal effectively with large incidents. This necessitates a change to a more hierarchical approach. This section of the paper will address these questions by proposing changes to our national plans; equipment and training necessary to more effectively manage large CBRN events.

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[41] Canada. Solicitor General of Canada. Developing Options. 23,24
[42] Canada. Solicitor General of Canada. Developing Options. 23,24

A need exists to address the distribution of government department responsibilities, with respect to CBRN planning activities, largely because any single department lacks the authority and accountability necessary to enforce large-scale emergency measures upon declaration of a national-level emergency. This lack of unity was noted in a Special Senate Committee on Security and Intelligence that reported on the problems of assigning specific roles it said;

> "a lack of clarity or consensus on roles and responsibilities within the federal government and between the federal government on one hand and the provincial and municipal authority on the other is a major impediment to the effectiveness of the response.[43]

Moreover, the accountability of the decision-making process is not directly or easily traceable to the person or persons responsible for individual decisions in time of crisis.

In Canada, the Emergency Preparedness Act functions as a general enabler for new legislation and as an administrative instrument to identify the responsibilities of federal agencies.[44] However, it does not address the authority and accountability requirements of these same federal agencies in time of crisis. By contrast, the US Stanford Act sets out specific activities to be performed by its federal agencies together with guidelines and limitations.[45] Therefore, some changes to the Emergency Preparedness Act might be necessary.

National response plans must be better integrated and OCIPEP is well positioned by its mandate to exercise the top-down co-ordinating role necessary to improve our chances of successfully dealing with CBRN terrorist attacks. Current plans lay a good foundation for

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[43] Canada. *The Senate*. The Report of the Special Senate Committee on Security and Intelligence. Ottawa: *The Senate*, Special Senate Committee on Security and Intelligence.1999, 27

[44] John, Newton. Federal Legislation for Disaster Mitigation: A Comparative Assessment Between Canada and the United States. Toronto, Canada: John Newton Associates for Emergency Preparedness Canada, 1996, 19

[45] John, Newton. Federal Legislation for Disaster Mitigation, 19

normal day-to-day situations, but that foundation must be expanded and strengthened to protect our infrastructure and citizens against an attack. Integration requires the involvement of all government levels.

There would be some merit in copying parts of the US plan[46] and using the same layered approach in depth over all of Canada. Using it as a road map to deal with CBRN threat while aligning it with the CF Army structure could be a viable starting point. The Army has structured itself by geographical regions: Land Force Atlantic Area, Secteur Québec Force Terrestre, Land Force Central Area, Land Force Western Area, and Canadian Forces Northern Area. Each regional headquarter is located in a metropolitan area with direct access to the provincial emergency services for that area. The Canadian army structure was used successfully for Y2K preparedness and response and therefore it shows promise to deal with the issue at hand. The Canadian plan would require more development to have the same level of coverage and depth of response as the US plan. Our plan would also require the combined use of military and civilian resources and expertise from all government levels. The Canadian version of the amended US Plan could produce good results.

Additionally, the roles of the federal, provincial, and municipal governments must be re-examined and clarified to prevent confusion. Legislative changes would end up going across jurisdictional federal-provincial boundaries of responsibility. These boundaries are a constant

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[46] Details of the US plan was found in: Canada. *Senate*. The Report of the Special Senate Committee on Security and Intelligence. Ottawa: Senate, 1999. 48. The US plan is a four-level plan to counter CBRN threats. That detailed plan is, however, still in the very early stages of implementation. The first level divides the US territory into 120 metropolitan areas, each with its own inventory of assets. The next level improves the federal-state communication by establishing a single point of contact for national response capability. The third level involves the actual detection and interception of CBRN materials being shipped by terrorists. The last level is a combination of deterrence of and response to an attack. Additionally, the US Congress has authorised the creation of 32 Army National Guard Units. Each unit is composed of 22 members equipped and trained by the federal

subject of debate due to our shared responsibility approach in the government decision-making process. Following negotiations, likely lasting years, a proper framework would emerge so that the players at the federal-provincial levels would have clearer lines of responsibility, authority, and accountability to follow and enforce in time of crisis thereby offering a better service to Canadians.

Under such framework, financial changes would evolve towards a more directed and integrated approach to disaster planning and response. Currently, the federal government earmarks $5,000,000 in fiscal years 2001-2002 and 2002-2003 to enhance community response capabilities against CBRN emergencies.[47] OCIPEP distributes funds through an existing federal program known as Joint Emergency Preparedness Program (JEPP) upon direct requests from the various city and municipal emergency services.[48] The current drawbacks of this arrangement are the split funding between the federal and provincial levels of government, the relatively small amounts involved, and the fact that individual cities and municipalities have to compete individually for funding at the federal level. The OCIPEP/JEPP would require a larger funding envelope than the current $5 million per year over two years to reduce the gaps in our equipment and training. Moreover, cities and municipalities currently deal directly with the federal government without provincial involvement. The situation has to be amended so that all levels are aware of the actions to be taken and the expectations of success following their intervention in a disaster or crisis situation.

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government to assist state and local authorities deal with CBRN incidents. All 32 teams will be certified in fiscal year 2003.

[47] Canada, News Release, 27 March 2002. Funding announced for specialized equipment for Newfoundland and Labrador first responders. Retrieved 1 April 2002 from web site: http://ocipep-bpiepc.gc.ca/pub_communi/NR02-0327-Newfund_e.html

[48] Telephone Conversation – Major Naud, CFC CSC 28/Mr. Jim Cormier, OCIPEP Toronto, 18 March 02

The adoption of a top-down national strategic framework would provide numerous advantages such as: a focus for national efforts; clearer delineation of roles and responsibilities for stakeholders; better co-ordination of effort and resources; increased accountability and commitment; enhanced public awareness; and ultimately, the opportunity to reduce human suffering and loss of life following a CBRN incident. These advantages could ultimately be lessened if we do not learn to differentiate the response requirements of each CBRN categories.

Current and future preparedness planning initiatives should make a conscientious effort to distinguish more clearly between chemical, biological, radiological and nuclear terrorism, with particular attention on how the response requirements for bioterrorism differ from the others. Bioterrorism differs from other types of terrorism in that it would impose particularly heavy demands on the nation's public health and health care systems.[49] Local initiatives to address CBRN issues should be encouraged.

Municipal level planning and training initiatives are encouraged but the benefits of such initiatives are not recorded, or shared with other municipalities across Canada. Opportunities to enhance responses are missed because of a lack of readily available best practices when responding to daily emergencies. The dissemination of best practices would help others with the same emergency needs. A top-down approach, versus a button-up approach, offers greater chances of success because it can regroup our national expertise into a coherent system of responses that meet the needs of most first responders, while enforcing common safety standards and providing high-level plans and procedures to deal more effectively with the results of an attack.

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[49] Michael, Moodie. Project Director. Bioterrorism in the United States: Threat, Preparedness, and Response. Washington, DC: Chemical and Biological Arms Control Institute, 2001, iii.

A possible next step could be the development of local and municipal measures to make cities more resilient to hazards and increase preparedness in the face of a threat based on the principle of prevention. The principle of prevention would create a cultural change towards disaster or crisis situation. So that it would become second nature for people to look at their daily environment with different eyes, identifying potential hazards and critical infrastructures. The result would be a community that is more resilient in the event of natural or man-made incidents, because its citizens would all play a larger role in its defence as a result of their feeling a sense of ownership. This sense of belonging would allow the conduct of risk assessments designed to make the communities even more self-sufficient and confident in their ability to deal with disasters or crisis.

Disaster planning is largely based on the continuing need to emphasise worst-case scenario preparation, but this raises the danger of failing to optimise local and provincial response capabilities to deal with the more probable attacks. Michael Moodie, a specialist, supports this preparation approach because while focusing planning and preparedness for high-end scenarios simplifies the planning process, he insists we must not ignore the less complicated or low-level responses because of the potential psychological impact and severe social disruptions terrorists aim to achieve.[50] In the future, the delicate balance between preparedness and other governmental priorities will continue to determine the progress or lack of development of national response plans.

CBRN preparedness can be improved through the funding, standardisation and the acquisition of specialised equipment to narrow the identified gaps in equipment protection,

detection, decontamination, and medical stockpiles. The acquisition of equipment can be addresses more quickly under the auspices of a unified plan and centralised federal funding augmented by provincial or territorial funds for the area of greater risk such as large population centres. Medical stockpile issues are not easy to resolve because of the sensitivity and short shelf life of some medications. A possible improvement may come from a redistribution of these stockpiles nearer to main metropolitan centres in each province so that access time to first aid medications is shortened.

As noted earlier, procurement is mostly a municipal prerogative with little or no input from higher levels of government. This type of procurement needs standardising so that the equipment procured meets a common and stated minimum standard of performance in detection and decontamination for specific CBRN products. The minimum standard should be agreed upon by federal and provincial governments which in turn should facilitate stockpiling of common equipment, increase interoperability of equipment between metropolitan areas, and potentially reduce procurement costs because more of the same piece of equipment is bought. Buying common equipment for common tasks could also facilitate training requirements.

The training of first responder should, at a minimum, provide increased awareness of CBRN products and their effects. If possible, the use of special equipment for detection and decontamination should become part of advance courses available to first responders. As well, more organisations and institutions should be sought as training centres to increase CBRN counter-terrorism training opportunities. Some suggested organisations include the Canadian Emergency Preparedness College, enhanced National Defence NBC school training support, private sector training programs, provincial and territorial training centres, and the use of

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[50] Michael, Moodie. Bioterrorism in the United States. xxxi.

distance learning tools.[51] The training of first responders should also explore issues related to the handling of mass casualties by our health care system. The surge capability of hospitals needs to be monitored provincially to ensure that in case of NBC terrorism, the hospitals can respond at the expected level. The surge capability may include the installation of decontamination facilities in selected hospitals.[52]

Despite all of this, a good initial capability resides with our first responders. The future focus has to be towards those aspects of a mass casualty situation that needs to be added or modified to greatly improve our national response capability even when considering that such capability would likely be used more often to respond to non-terrorist scenarios. The federal-provincial shared responsibilities should be redirected towards providing the necessary preparedness, emergency response standards, and equipment necessary to improve the surge capability of our emergency response system with emphasis on the health care system.

Once the federal-provincial broad-based interdepartmental co-operation has given firm responsibility and accountability directions to implement the changes necessary to improve the emergency response surge capability, people must be trained on the use and maintenance of the equipment provided. OCIPEP funding and support initiatives, such as JEPP, for the CBRN training of first responders must be stepped-up in parallel with provincial initiatives. Communities must be encouraged to update and exercise their local CBRN response plans.

All the above efforts should allow larger initiatives to mesh with local/municipal requirements. The resulting initiatives should increase response effectiveness while minimising

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[51] Canada. Solicitor General of Canada. Developing Options. 24
[52] Canada. Solicitor General of Canada. Developing Options. 26-27.

risks of disaster escalation. Therefore, it should work better than the present system of emergency response management.

This paper has shown that terrorists have the will and the means to carry out CBRN attacks of potentially large destructive proportion. Such attacks are very difficult, if not impossible, to stop if carried out. This hanging sword of Damocles can no longer be ignored and Canadians must face reality, the threat exists, and it is here now.

The current government emergency structure matrix does not easily support cross-communications requirements necessary to the co-operation of efforts necessary for effective co-ordination. Multiple leadership lead-agencies of national response plans cannot efficiently co-ordinate a unified CBRN counter-terrorism plan because is splits the responsibility, authority and accountability necessary to succeed. As well, first responders' equipment and training are severely lacking.

The current government emergency structure can be changed, for CBRN counter-terrorism purposes, to a more hierarchical structure where co-operation and co-ordination elements are part of the emergency structure design. Such a structure would be more robust and flexible in its approach, yet allow for the interagency communications links between all government levels to facilitate co-ordination and increase effectiveness thereby minimising the possible escalation of disaster. It is therefore recommended that we adopt a single agency approach to CBRN disaster management and mitigation. The agency whose mandate is closest to the anticipated future requirements is OCIPEP. With some changes to the Emergency

Preparedness Act, OCIPEP can be given the responsibility, authority and accountability necessary to succeed.

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