

CITY OF GARLAND WEAPONS OF MASS DESTRUCTION RESPONSE INITIATIVE

Leading Community Risk Reduction

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An applied research project submitted to the National Fire Academy as part of the
Executive Fire Officer Program

CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another

Signed:

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ABSTRACT

The terrorist attacks on America using weapons of mass destruction (WMD) have driven first responder organizations into urgent preparation. The problem is that there is no national WMD response standard that defines when the organization is adequately equipped and prepared. The purpose of this paper is to research existing standards and guidelines and develop a WMD initiative for the Garland Fire Department. Many federal and state agencies offer guidelines and training assistance, but it requires research and assistance from many levels to develop an organized WMD initiative that will meet the local needs. Accurately measuring the local response requires an exercise template and evaluation methodology on a larger scale than currently exists in most first responders organization. The second research question asked how well Garland responders met existing standards found at the federal level. Accomplishing this task meant conducting a citywide exercise that was overseen by the Federal Department of Justice. The third research question requiring Garland Fire Department to make changes or improvements to meet the standards generated a new standard operating procedure. Action research was used to formulate a standard response procedure that was generated from an existing standard that was used as a template. It is recommended that any responders developing a WMD initiative research the Office of Domestic Preparedness and the Federal Emergency Management Agency for guidelines. Furthermore, developing a WMD initiative requires a larger scope than the typical local response, a scope that encompasses county, state and federal levels of involvement.

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INTRODUCTION

Garland is a city in Texas with population of 215,768 (U.S. Census Bureau, 2000). The city covers 57 square miles with nine fire stations, thirteen fire fighting apparatus, and a force of 230 professional firefighters. As the threat of terrorism or the use of Weapons of Mass Destruction (WMD) has increased, the United States government has taken action. Several programs have been developed within the last decade to assist both state and local communities in preparing for this threat. The City of Garland has been a recipient of several grants, contracts, and other assistance related to WMD. Funds totaling approximately \$1.6 million dollars have been received by the City of Garland since 1998. The problem is there is no clear standard for a Weapons of Mass Destruction Program. Furthermore, with the myriad of publications and government documents concerning Weapons of Mass Destruction (WMD), it is a challenge for a community to develop a standard that is applicable to the local needs. The purpose of this research project is to analyze the local needs and develop a Weapons of Mass Destruction Program. An action research methodology was used to determine how to develop a WMD program. The research questions are:

1. What are the standards or guidelines for weapons of mass destruction program?
2. How well prepared are the Garland Fire Department first responders to meet these standards?
3. What changes or improvements are necessary to implement a WMD Program?

BACKGROUND AND SIGNIFICANCE

In the last ten years, Garland has experienced a 19.4 percent population increase (U.S. Census Bureau, 2000). Garland is geographically located within Dallas County, which currently maintains a population of over 2 million inhabitants (U.S. Bureau, 2000). A population this large compressed into a relatively small area makes Garland and Dallas prime candidates for a terrorist attack. Recognizing the growing threat of terrorism and how tempting a target this area would be to terrorists, the city of Garland applied for and received approximately \$1.6 million dollars in grant funds to better prepare our first responders in the event of a WMD attack. As funds were received into the City of Garland, a task force was created with representation from key city departments. Specifically, the Office of Emergency Management, Fire Department, Health Department, Police Department, and City Management convened regular meetings to discuss WMD related issues. Out of these meetings, a series of training exercises across departmental lines, as well as plans for equipment sharing across departments within the city was developed.

As the City of Garland strengthened the response efforts internally, questions regarding responding to incidents outside of the jurisdiction were raised. Understanding that many of the contiguous cities and neighboring jurisdictions do not have the level of capabilities comparable to the City of Garland for responding to WMD events, the City has developed a WMD Regional Response Initiative to potentially assist these communities.

The City of Garland is located within Dallas County, in North Central Texas. The City is a participant in the variety of efforts coordinated by the North Central Texas Council of Governments, a 16 county planning entity. The North Central Texas area is fortunate to have several communities that have been awarded WMD grants, equipment, and training. Towards the west side of the Metroplex, Tarrant County and the cities of Fort Worth and Arlington have received the majority of WMD related assistance. Towards the east side of the Metroplex, Dallas County and the cities of Dallas, Irving, Garland and Plano have received the majority of WMD related assistance.

The City of Garland has developed a working group comprised of several city departments to plan for and respond to WMD events within the community. The City of Garland would like to foster regional response capabilities by reaching out to our neighbors to assist them should a WMD incident occur in their community.

The City of Garland envisions itself as a regional responder for WMD related incidents on the east side of the Metroplex. Currently, the City of Garland Health department is leading the efforts as they establish working relationships with designated communities for the purpose of smallpox vaccinations. Carrying the efforts further, the City of Garland Health Department has received memorandums of understanding for health department response to a WMD incident from the cities of Sachse, Rowlett, and Rockwall.

Building upon the foundation created by the City of Garland Health Department, the Office of Emergency Management, Fire Department, and Police Department are seeking to build relationships with the above-mentioned communities to augment the response to a WMD incident. Expanding upon that idea, the city would also like to investigate the potential for relationships with communities in other counties, moving eastward and southeast from Dallas County. The City of Garland WMD Regional Response Initiative will seek written agreements or memorandums of understanding from each jurisdiction to which response may be requested.

The concept of a City of Garland WMD Regional Response Initiative was presented to the City of Garland City Council on January 19, 2004. The City Council directed the participating City of Garland departments to go forward with developing the WMD Regional Response Initiative. In response that direction, the challenge is to develop a WMD program that conforms to national, state, and county standards, yet remains responsive to the needs of the local community. An effective program will encompass the regional strengths to address the local weaknesses. Garland does not have a hazardous material team. The WMD program will identify such weaknesses and effectively resolve the shortcomings with a regional response.

This research paper is a result of these developments and relates to the intervention strategies section of the Leading Community Risk Reduction portion of the Executive Fire Officer Program of the National Fire Academy.

LITERATURE REVIEW

Government agency web sites located on the Internet provided plenty of information concerning terrorism and weapons of mass destruction. The Federal Emergency Management Agency (FEMA) publishes a guide for emergency operations that includes an attachment designed to assist state and local emergency responders in developing a response to terrorist attacks ((FEMA, 2001). The FEMA guide is an all-hazard planning guide with a suggested format for a terrorist incident. The Council on Foreign Relations (CFR) sponsored an independent task force study that indicated a lack of funding and the unpreparedness of emergency responders (Rudman, Richard, Metz, 2003). This disturbing report points out that there are two major obstacles concerning emergency preparedness efforts. According to the report, the first obstacle is the impossibility of knowing precisely what is needed and how much it will cost due to the lack of standards. Secondly, funding for emergency responders has been hampered by bureaucratic red tape. The CFR report indicates that national capability standards make it possible to use funding efficiently to meet identified needs and measure preparedness levels on a national scale (Rudman, Richard, Metz, 2003). The CFR report recommends that the Department of Homeland Security should streamline the homeland security grant programs to reduce unnecessary duplication and coordinates purchases for state and local authorities. A regional approach to developing a weapons of a mass destruction (WMD) program would add to the efficiency of spending federal grant monies and enhance the response to terrorist attacks. The National Governors Association (NGA) website offers a domestic checklist that provides an excellent resource to get started with a weapons of mass destruction program within the state level (NGA, 2003). The NGA checklist mentions developing mutual aid agreements, ensuring that first responders are up to date on nerve agents, and identifying needs for stockpiling drugs. The NGA checklist encourages developing mutual aid agreements across multiple jurisdictions to promote a regional terrorism response capability. The

RAND Corporation is a non-profit organization that offers analysis and solutions to public sectors. In a report addressing training directed at the Nunn-Lugar-Domenici (NLD) Act, RAND reported that the ensuing training exercises, while valuable, could have been more effective (Gilmore, 2000). In the same report, RAND maintains the need for a comprehensive national strategy that establishes goals and sets priorities across a broad array of functions. The John F. Kennedy School of Government published a report on domestic preparedness that mentions first responders holding a variety of jobs in domestic preparedness efforts (Kayyem, J & Howitt, 2002). According to this report, the fact that many first responders hold more than one position in a response area poses problem due to the “two-hat” syndrome. These responders cannot fulfill the multiple positions they hold either full time or part-time and therefore leave one or the other short handed in a true emergency. The first responder agencies must identify which employees maintain dual roles in an emergency plan and develop a reliable call-up plan (Kayyem, J & Howitt, 2002).

The Office for Domestic Preparedness (ODP) operates at the federal level of government under the Department of Homeland Security (DHS). The ODP issues guidelines and evaluation methodology that is designed to enhance the quality and usefulness of homeland security exercises by evaluating performance against standardized criteria. In its guideline preface, the information placed there indicates that these guidelines are an initial effort to define expected levels of performance and that the guides are incomplete at this time (ODP, 2003). Information in the preface of the Volume II document indicates that additional guides are being developed as the evaluation methodology is refined (ODP, 2003). The ODP guidelines provide valuable criteria for first responder organizations to start the development of a WMD program. The document reviews responder skills, knowledge, and capabilities in each of three training levels related to WMD events-awareness, performance, and planning and management. However, there is not enough information to completely develop the program. Hicks & Associates, Inc. is a consulting firm that has developed a report for responders that is useful in the development of initial standards (Hicks & Associates, 2003). Hicks uses twelve National Terrorism Response Objectives (NTROs) that they describe as essential functional capabilities required by emergency responders for dealing with terrorism. The report published by Hicks & Associates is a good road map,

but does not include specific criteria or detail that an agency could rely solely upon to complete the program. The Century Foundation published a report for the Homeland Security agency that describes the State of Texas tasking the twenty-four Councils of Governments (COG) to address coordination issues within their respective regions of the state. This report was issued in 2003 and describes this initiative as the State of Texas' first attempt to regionally coordinate the management of disasters (The Century Foundation, 2003). The Century Foundation report also mentions public health agencies increasing importance in the response system (2003). The WMD Consulting Group offers on the company website a terrorism vulnerability self-assessment checklist (WMD Consulting Group Llc, 2002). The checklist offered by WMD Consulting is a straightforward tool for organizations to use to begin the process of building a WMD program. The Interagency Board for Equipment Standardization and Interoperability addresses the need for equipment standards to establish minimum performance and interoperability requirements for first responders to acts of terrorism (The Interagency Board For Equipment Standardization And Interoperability, 2003).

The National Institute of Justice, a sub-agency of the U.S. Department of Justice, offers a document that contains introductory information on detection equipment (U.S. Department Of Justice, 2001). The information on this web site is a good evaluation tool when comparing detection devices to be used in the event of a terrorist attack. The National Fire Protection Agency (NFPA) publishes standards 1994 Standard on Protective Ensembles for Chemical/Biological Terrorism Incidents (The National Fire Protection Agency (NFPA), 2001) and 471 Recommended Practice for Responding to Hazardous Materials Incidents (NFPA, 2002). The NFPA is widely recognized for providing standards for emergency responders and has applications in developing a WMD program. The Center for Technology and National Security Policy offers a quick guide for terrorist attacks. This document organizes the information into biological, chemical, and "dirty bomb" categories and is designed as a field reference document (Center For Technology And National Security Policy, 2004).

In summary, the information furnished in the government agency websites offers valuable guidelines for the initial phases of developing a WMD program. The ODP and the Homeland Security web sites contain updated information on a wide range of topics concerning terrorism and weapons of mass destruction. The evaluative methods furnished by the ODP proved to be valuable in the effort to create a tool to determine a scale to measure our program as we trained. The John F. Kennedy School of Government report caused us to evaluate how many of our responders were volunteers or held second jobs that would pose a problem with the “two-hat” effect. The Century Foundation report steered us to our Health Dept. and resulted in a valuable alliance with them. Our first response to a possible terrorist attack now includes members of the City of Garland Health Dept. The NGA checklist led us to contact adjacent responding agencies and forge memorandums of understanding and mutual aid agreements that will prove invaluable in a large scale event. National Institute of Justice evaluation methods for detection equipment gave criteria that helped in purchasing detectors and other equipment to better evaluate incidents when unknown substances were being investigated.

PROCEDURES

Information and reports concerning weapons of mass destruction and terrorist attacks are prolific in the media, literature, and government publications. The procedure used to research the first question concerning what standards or guidelines existed for establishing a WMD program consisted of researching government agency web sites dedicated to homeland security and emergency responders when responding to terrorist attacks. FEMA offers a planning guide for emergency operations in response to terrorism. This FEMA document is a good road map for developing a WMD initiative. This all-hazard guide offers an entire chapter to planning a terrorism response. The web site for ODP offered a wealth of information about evaluating exercise programs and promoting collaboration with memorandums of understanding as well as mutual aid. The research for appropriate standards included searching NFPA standards. Standards for hazardous material suits and responder ensembles are defined by the NFPA and proved useful for Garland Fire Dept. since we do not have a hazardous material team. Hicks & Associates provided a good standard with the twelve National Terrorism

Response Objectives (NTR0's) that they describe as essential functional capabilities required by emergency responders for dealing with terrorism.

To answer the second research question, how well prepared are the Garland Fire Department first responders to meet these standards began with completing an inventory of the equipment received from the grants. One of the stipulations of the NLD grant was that we had to conduct a citywide simulated response to a terrorist attack. This exercise was conducted in November 2003. The United States Department of Justice sent a team to evaluate the response and provided an after-action report that addresses the response efforts, both pro and con. The Garland fire department directives and standard operating procedures (sop's) were researched to see if any were applicable for a terrorist response. The ODP emergency responder guidelines were used to steer training exercises in preparation for the actual citywide exercise overseen by the DOJ. Proficiency in using the detection equipment, utilizing the city health department and the bomb squad of the police department, and communications with outside agencies were evaluation points in the training exercises. Additionally, the Garland first responders were evaluated on how well they called for and interacted with the hazardous material team from an adjacent jurisdiction. The first responders were evaluated on four specific actions:

1. Initial response, recognition of a terrorist event, and establishing command
2. Initiate the Haz-Mat Plan and evacuation procedure
3. Updates provided to the command structure on conditions
4. Initial approach to mass casualties, documentation and accountability of the victims.

The third research question, what changes or improvements are necessary for Garland first responders to implement a WMD program, was researched and developed by the information provided from the first two research questions. The guidelines and standards that emerged from researching the first question provided criteria for developing a directive or standard operating procedure for the first responders. The exercises that were executed provided criteria specific for the Garland first responders to develop the WMD program. Weaknesses as well as strong points in the written critiques were noted and addressed in developing the overall scope of the program.

The research in developing the WMD program assumed a professional level of training and certification of all responders in the developmental exercises. The critique and after-action reports generated by the evaluators are essential in identifying elements of development in a WMD program. The first responders from Garland fire department are trained and certified according to the levels mandated by the Texas Fire Commission. First responders from other departments and agencies are assumed to have met the required certifications and training levels associated with their regulating agency. Essential knowledge of incident command, decontamination procedures, safety measures, etc., are elements in a successful response. This research was limited by these assumptions, as well as the limitations associated with the lateness of receiving the after-action report from the United States Department of Justice.

RESULTS

The first research question, what are the standards or guidelines for a WMD program, was answered by the proliferation of federal and state agency information provided on their respective web sites and published media sent through government channels. The ODP furnishes State Homeland Security and Assessment process that is recognized as a planning tool for local jurisdictions to update their respective needs assessments as well as identify any progress identified in their security strategy (ODP, 2003). Furthermore, the ODP offers direct training and technical assistance to local jurisdictions to enhance their preparedness to respond to terrorist attacks. The assistance offered by the ODP, in conjunction with the exercise and evaluation methodology, gives first responders the guidance and information necessary to develop a WMD program. The standards offered by the NFPA are useful when developing specific hazardous material responses and the equipment necessary to adequately respond to specific incidents. The FEMA guide for state and local emergency operations planning is a good resource for developing a response to terrorism. Further standards and goals were provided by the document published by Hicks and Associates (Hicks & Associates, 2003).

The second research question, how well prepared are the Garland first responders to meet these standards, was answered using the exercise evaluation methods provided by the guide published by the ODP (ODP, 2003). The standardized criteria provided an adequate template to measure the performance of the responders. The after-action report issued by the DOJ following the citywide training exercise provided information on weaknesses as well as strengths in the local response. Using this report provided essential recommendations for improving and organizing a WMD program. The four criteria for grading the responders provided specific information to develop details in the WMD program. These areas of evaluation exposed weaknesses that could compromise an actual response to a terrorist attack. The interface between the fire first responders and the health department was an uncommon interaction, but has now developed into a critical partnership when responding to potential chemical or biological events. The police bomb squad was unfamiliar with the concept of incident command. The necessary education and training in this area will enhance the coordinated response between fire, health and police.

The third research question, what changes or improvements are necessary to implement a WMD program was answered by synthesizing and compiling the results of the research of the first and second questions. Developing standards and forming guidelines translated into developing a standard operating procedure that borrowed heavily from Alameda County Fire Department, Alameda County, California (Appendix A). This standard became a teaching tool as well as a training resource for the responding departments within the city of Garland. Furthermore, there was a recognized need for a field reference guide to assist the first responders in the first critical moments of a terrorist event. The result is a field reference guide furnished by the Center for Technology and National Security Policy that serves as a field resource for the Garland first responders (Appendix B).

DISCUSSION

The proliferation of data and information concerning responses to terrorism is both help and a hindrance. There is a need to sort through what applies to a local jurisdiction in economic terms as well as feasibility at the local level in response capability. It quickly becomes evident that few first responders can adequately respond

to a terrorist attack without coordinating with many other agencies. This point is driven home by the CFR report that indicated the lack of standards and the lack of knowing precisely what is needed represent major obstacles for first responders (Rudman, Richard, Metz, 2003). This report indicates that national capability standards would provide more efficient funding and streamline the federal grant process. However, both FEMA and ODP have increased assistance to local jurisdictions in the development of applicable standards. FEMA provides an excellent guide for local jurisdictions to follow (FEMA, 2001). The guide is, by necessity, a generic document. The challenge for first responder agencies is to adapt the guide to suit the local response.

The twelve national terrorism response objectives provided by Hicks and Associates compares current capabilities to recognized goals for adequate response to terrorism. These objectives are a good reference when developing a local standard of response (Hicks & Associates, 2003). The challenge for a local responder organization is to adapt the objectives to more readily apply to the community being served. The NGA provides a preparedness checklist that mentions developing an information technology security oversight plan (NGA, 2003). The insight that this document provides is to protect the jurisdictions information technology with the development of teams that have an awareness of the vulnerabilities and threats to the technology systems (NGA, 2003).

Responding agencies should conduct a fact-finding mission to find out if any of the responsible personnel in their organization are also volunteers in another agency also responding. Overlooking the “two-hat syndrome” could seriously undermine the staffing of a responding agency (Kayem, J & Howitt, 2002). This report mentions coordinating the response with specific annexes in the WMD plan to provide a solid foundation for the plan. The difficult self-assessment process is simplified and clearly conveyed with a sample risk assessment checklist from the WMD Consulting Group (WMD Consulting Group LLC, 2002). The checklist is scored from one through twenty, with twenty being the highest score, for levels of vulnerability. There are nineteen listings to score on the checklist, with multiple considerations in each listing. The final product fulfills the need to measure the local jurisdictions vulnerability (WMD Consulting Group LLC, 2002).

The interface between the fire dept. first responders and the health dept. first responders first surfaced as sophisticated detectors were acquired from the NLD grant. The expertise to use and interpret some of the instruments was difficult for some of the firefighters, but was part of the regular training for the health department personnel. It quickly became apparent that the health department should be included in a first response with any involvement of chemicals or unknown hazards. A good resource to evaluate the vast array of detectors and detection systems is to use the NIJ standards and testing program (United States Department of Justice, 2001). The guide published by the NIJ offers a neutral ground to compare instruments prior to contacting vendors. This became important when discussing interaction between departments and agencies due to the importance of using detectors that the responding agencies were familiar with and understood the implications of the findings. The need for a field reference guide became apparent. This need was filled by a guide published by the Center for Technology and National Security Policy (Appendix B). This guide was developed specifically for terrorist attacks and organized as a quick reference resource (Center for Technology and National Security Policy, 2004).

The ODP offers a guide that provides evaluation methodology for training exercises (ODP, 2003). This document can be used to measure the training exercises to determine if goals are accomplished and improvements are made. It also defines the evaluation process in terms of administering the evaluation as well as analyzing the results to provide answers to what should be learned as well as providing recommendations and improvements. Of particular interest are the recommendations for conducting a "hot wash" after the exercise. A hot wash is a facilitated meeting that allows the players to participate in a self-assessment of the exercise and provides a general assessment of how the participants performed in the exercise (ODP, 2003). The ODP makes the distinction between evaluating discussion-based exercises and evaluating operations-based exercises. In each case, the format for evaluating the exercises contains the same components, including the after-action report. The four specific areas of evaluation revealed areas of needed improvement as well as areas that were deemed strong points. The health department representatives were adept at synthesizing the data collected from detectors and analyzers. The firefighters were stronger in areas of incident command, communication controls, and accountability of

the responders as well as the victims. The interaction with the hazardous material team from an adjacent city was recognized as functional and productive. Considerable preparation and training was required due to the response of a hazardous material team from another city. The shared response has developed into that Garland fire personnel would provide incident command, communications, and decontamination for the responding haz-mat team. The police bomb squad functioned well in their specific area of expertise. However, the police do not operate with an incident command structure and had to be instructed on those elements of the response. Due to the size of the required response, fire departments from adjacent cities were called in to fill in at the Garland fire stations involved in the WMD exercise. This reflects on what would actually happen in the event of an actual terrorist attack. Many city departments as well responses from outside entities are required to mitigate this type of incident. The concept of a regional response thus becomes a requirement rather than an option. The WMD Initiative is, by necessity, written with these elements included in the plan. The plan should be fluid—allowing the regional responders to respond as first response entities or respond as a support element in the overall response. Furthermore, the responders should be trained and aware that, as the incident develops and grows, the organization of the response will expand as well. A regional response initiative should reflect city, county, state, and national components in the overall plan. Each participating jurisdiction should have signed memorandums of understanding or written mutual aid agreements.

Recommendations

Developing a WMD initiative begins with a critical look inward at the first responder's own agency and grows outward to the national level. This is a time consuming process that involves a lot of training and evaluation. The first research question asked about existing standards and guidelines. The ODP website is a good beginning for any first responder organization (ODP, 2003). The needs assessment guidelines offered by the ODP are generically written due to the broad scope the government is required to address. A first responder organization can benefit from using the ODP needs assessment and following up with the ODP training evaluation methodology to ensure quality development that is proven on a national scale. The scope of the training will need to be scaled to the responding entities size, level of

organization, and funding level. The guide offered by FEMA is a good tool to identify how the local response ties into the larger network developed by the federal government (FEMA, 2001). The standards and goals offered by Hicks and Associates gives organizations developing WMD initiatives productive goal statements that serve to define the program's organization and direction (Hicks & Associates, 2003).

Determining the level of preparedness of a first responder organization, the second research question, can be answered by conducting large-scale exercises involving multiple city departments, mutual aid responses, and county level interaction. The evaluation methodology offered by the ODP becomes an essential tool to measure the quality of the response objectively (ODP, 2003). The ODP guidelines offer a template that gives state and federal agencies an accurate measuring tool that can be used when offering grant monies to support perceived needed areas of improvement. Any comparison or accurate measurement of adequate response must begin with the responders being adequately equipped and trained to use the sophisticated detectors and analyzers. Developing a regional response will enhance the WMD initiative by avoiding redundancy in purchasing expensive equipment and will add to the efficiency and effectiveness of the responders ability to mitigate a terrorist attack. The difficulty experienced by the training agencies involved in a large-scale multiple- agency training exercise is offset by the large-scale benefits reaped from the exercise. By recognizing critical areas needing improvement, benefiting from the already developed strong points of other responders, and avoiding redundancy in purchasing expensive equipment, the synergy of the initiative becomes obvious and the WMD initiative becomes palpable.

Identifying needed changes or improvements necessary to implement a WMD program becomes an exercise in writing adequate response standards and developing memorandums of understanding with other responding agencies. Many first responder organizations have guidelines in place that are professionally written. These guidelines become a template for the developers of a WMD initiative to fit the local responders needs.

Future readers are recommended to refer to the state and federal guidelines on the Internet and update their standard operating procedures accordingly. Furthermore, the WMD initiative should link fire, health, and police departments as well as county, state, and federal agencies.

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APPENDIX A

STANDARD OPERATING PROCEDURES GUIDELINES

RESPONSE TO ACTS OF TERRORISM INVOLVING WEAPONS OF MASS DESTRUCTION

SECTION 1: Description

1.0 Purpose

The purpose of this document is to establish clear guidelines for first responder actions in the event of a suspected terrorist incident involving weapons of mass destruction (wmd).

1.1 Scope

These guidelines address the role first responders, dispatchers and command staff in mitigating the initial crisis period following a wmd incident

SECTION 2: Procedure

2.1 First Due Company: Scene Size-up

<ul style="list-style-type: none"> • Multiple casualties • Reports of suspicious circumstances (with or without victims) 	<ul style="list-style-type: none"> • Suspicious substances (liquid or gas) • Suspicious packages • Dissemination device 	Evidence of explosion or collapse (no an act of nature).
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2.2 Recognize as suspected WMD incident

2.2.1 Stage upwind

2.2.2 Don Personal Protective Equipment

Wear turnouts and SCBA for all suspected biological or chemical vapors and gases).

2.2.3 CONSIDER SECONDARY DEVICES designed to harm First Responders, such as spraying, exploding or breaking devices, which may be concealed in a box, suitcase or other container.

2.2.4 Notify Fire Dispatch Center (FDC) to request WMD response (See 2.3)

- Include estimated number of victims, if known.
- Request additional nerve agent antidotes (Mark I) kits, if indicated.

2.2.5 Consider crime scene preservation: minimize moving of items at the scene.

2.3 Fire Dispatch Center Actions

Activate WMD response:

- Group page to Executive Staff
- Dispatch HazMat team
- Dispatch Health Dept.
- Decontamination Team—Rescue 8
- First alarm (3 engines, 1 truck, 1 BC)
 - Advise to STAGE OUT at a safe distance from the incident (300' for chemical release; 1000' for explosion).
- Reconfirm the Law Enforcement that is a suspected WMD incident (Bomb Squad)
- Dispatch Mass Casualty Incident (MCI) to provide EMS response

2.4 First Responder Actions

- 2.4.1 Establish Command
 - Incident Command System (ICS)
 - Unified Command
- 2.4.2 Initiate HazMat Plan
 - Establish exclusionary zone
 - Isolate and deny entry
- 2.4.3 Update FDC and arriving officer(s) on conditions
 - Number of victims
 - Signs and symptoms
 - Observations
- 2.4.4 Initial approach to mass casualties
 - Avoid physical contact
 - Use megaphone or P.A. for communication
 - Direct ambulatory casualties to a safe area
 - Warn casualties of identified hazards
 - Begin decontamination (see decontamination guidelines)
- 2.4.5 Support HazMat team, Health Dept, and Bomb Squad as they arrive

2.5 Triage and Treatment

- Refer to Garland Fire/EMS Multi-Casualty SOP #603
- Assign Medical Branch ICS positions:
 - Medical Group Sector Leader
 - Triage Unit Sector Leader
 - Treatment Unit Sector Leader
 - Transport Unit Sector Leader

2.6 Self-Treatment for nerve agent exposure

- 2.6.1 Recognize early symptoms of exposure: Don't panic
 - Heavy salivation (drooling)
 - Lacrimation (tearing)
 - Rhinorrhea (runny nose)
 - Shortness of breath
 - Nausea
- 2.6.2 Autoinject antidotes (Mark I kits)
- 2.6.3 Proceed to Decontamination Corridor
- 2.6.4 Proceed to Triage Unit and decontamination

2.7 Documentation

- 2.7.1 Observations
 - Scene size-up
 - Evidence
 - Signs and symptoms of victims
- 2.7.2 Number of victims
- 2.7.3 Actions taken
- 2.7.4 Number of people transported
- 2.7.5 Test conducted
 - Type of test
 - Who conducted it
 - Results

Appendix B



Coping with an Attack



A QUICK GUIDE TO DEALING WITH BIOLOGICAL, CHEMICAL, AND "DIRTY BOMB" ATTACKS

Prepared by Patricia Coomber, PhD (LtCol, USAF) and Robert Armstrong, PhD (COL, USAR) at the Center for Technology and National Security Policy, National Defense University, Fort McNair, Washington DC
(<http://www.ndu.edu/ctnsp/index.html>)

<u>BIOLOGICAL ATTACK</u>	<u>CHEMICAL ATTACK</u>	<u>"DIRTY BOMB" ATTACK</u>
<p>PRE-ATTACK</p> <ul style="list-style-type: none"> <input type="checkbox"/> Stockpile 3 days of non-perishable food <input type="checkbox"/> Stockpile 3 days of water (3 gallons for each person) <input type="checkbox"/> Develop family contact plan (how to get in touch via phone, internet, or other method) <input type="checkbox"/> Stockpiling antibiotics is NOT recommended <input type="checkbox"/> Purchasing a gas mask is NOT recommended <p>POST-ATTACK</p> <ul style="list-style-type: none"> <input type="checkbox"/> If possible, remain at home <input type="checkbox"/> You have time --- treatment does not have to start immediately <input type="checkbox"/> Listen to local news <input type="checkbox"/> If needed, you will be told where to obtain treatment <input type="checkbox"/> Do NOT immediately rush to the Emergency Room 	<p>PRE-ATTACK</p> <ul style="list-style-type: none"> <input type="checkbox"/> Stockpile 3 days of non-perishable food <input type="checkbox"/> Stockpile 3 days of water (3 gallons for each person) <input type="checkbox"/> Develop family contact plan (how to get in touch via phone, internet, or other method) <input type="checkbox"/> Purchasing a gas mask is NOT recommended <p>POST-ATTACK</p> <ul style="list-style-type: none"> <input type="checkbox"/> IMMEDIATELY leave the chemical attack area <input type="checkbox"/> IMMEDIATELY remove contaminated clothing and shower or flush with water if you were exposed <input type="checkbox"/> Avoid puddles of liquid <input type="checkbox"/> Chemical clouds blow away quickly <input type="checkbox"/> Do NOT immediately rush to the Emergency Room unless you have breathed in chemical fumes, or have contamination on your 	<p>PRE-ATTACK</p> <ul style="list-style-type: none"> <input type="checkbox"/> Stockpile 3 days of non-perishable food <input type="checkbox"/> Stockpile 3 days of water (3 gallons for each person) <input type="checkbox"/> Develop family contact plan (how to get in touch via phone, internet, or other method) <input type="checkbox"/> Stockpiling antibiotics is NOT recommended <input type="checkbox"/> Purchasing potassium iodide tablets, a Geiger Counter, or a gas mask is NOT recommended <p>POST-ATTACK</p> <ul style="list-style-type: none"> <input type="checkbox"/> You have time --- the amount of radiation from a "dirty bomb" is unlikely to give you radiation sickness or cancer <input type="checkbox"/> Follow instructions of emergency personnel <input type="checkbox"/> Leave the area by foot; do NOT use public transportation, to avoid contaminating buses, subways <input type="checkbox"/> Do NOT immediately rush to the Emergency Room

Biological Attack

Threat	Immediate Action	Symptoms	Treatment (If exposed)	Contagious ?
Smallpox (Viral infection) Enters the body by breathing in	<ul style="list-style-type: none"> -Stay at home; turn to radio or television for instructions -DO NOT go to an emergency room unless you are sick -Small pox is contagious, health officials may advise wearing a face mask when you go out -Infected persons should be isolated -After small pox exposure, victim has a few days to get the vaccine (see treatment/prevention column) 	<ul style="list-style-type: none"> -Rash appears 2-3 days after infection -Within 1-3 days after rash appears, the rash becomes raised bumps and pus-filled blisters -Blisters crust, scab and fall off after about 3 weeks, leaving a pitted scar -Victim is infectious until all scabs fall off 	<ul style="list-style-type: none"> -Before exposures, smallpox vaccine can prevent the disease -After exposure, vaccination within 3 days will completely prevent or significantly modify effects of disease in most people -Vaccination 4-7 days after exposure may modify severity of disease -Persons treating small pox victims should be vaccinated and wear gloves, gowns and masks. -Insure that clothing, towels, bed sheets, etc. are not used by uninfected persons -Bleach will kill the virus on surfaces. Do NOT drink bleach or use on skin. 	Yes
Anthrax (Bacterial infection) Enters the body thru: -cuts in the skin (cutaneous form) -being breathed in (inhalation form) -the mouth (ingested form--for example, on contaminated food)	<ul style="list-style-type: none"> - Stay at home; tune to radio or television for instructions - DO NOT go to an emergency room unless you are sick - Antibiotics for anthrax are effective in the first 1-6 days - Antibiotics must be prescribed and administered by medical personnel 	<ul style="list-style-type: none"> - Symptoms usually occur within 7 days - Skin anthrax starts with bump like an insect bite; in 1-2 days becomes a swelling, then painless open sore - Anthrax breathed into the body (inhalation anthrax) has flu-like symptoms - Ingested anthrax has symptoms like food poisoning 	<ul style="list-style-type: none"> - Antibiotics are effective if started within 1-6 days after infection - Vaccination may also be recommended in some cases - Anthrax is not contagious - Bleach can kill the bacteria on surfaces. Do NOT drink bleach or use on skin. 	No
Plague (Bacterial infection) Enters the body thru: -being breathed in (inhalation form) -bites from fleas from infected rodents	<ul style="list-style-type: none"> - Stay at home; tune to radio or television for instructions - DO NOT go to an emergency room unless you are sick - Begin prescribed antibiotics as soon as possible - Infected persons should be isolated - Inhalation form of plague is contagious, persons with a cough or sneezing should be considered infectious - Health officials may ask you to wear a mask over your nose and mouth when you go out 	<ul style="list-style-type: none"> -Symptoms occur within 1-6 days after exposure - High fever, painful/swollen lymph nodes (armpits and neck), cough, and difficult breathing 	<ul style="list-style-type: none"> - Rapid use of antibiotics is effective - Infected persons should be isolated - Heat, sunlight, bleach will kill the plague bacteria on surfaces. Do NOT drink bleach or use directly on skin. - Masks should be worn at all times when dealing with infected persons 	Yes
Tularemia (Bacterial infection) Enters the body through: -tick bite -being breathed in (inhalation form) -the mouth (ingested form from contaminated food).	<ul style="list-style-type: none"> - Stay at home; tune to radio or television for instructions - DO NOT go to an emergency room unless you are sick - Victim has 3-5 days to start antibiotics - Antibiotics must be prescribed/administered by medical personnel - Even without antibiotics death is <u>unlikely</u> 	<ul style="list-style-type: none"> - Fever, chills, headache, weakness occur in 3-5 days -Eye infections will occur first in most cases 	<ul style="list-style-type: none"> - Antibiotics are very effective and should be started within 3-5 days of infection - Standard disinfectants and mild heat will kill the organism 	No

Biological Attack (Cont).

<p>Botulism (Bacteria which produces a poison called toxin) -The toxin cannot penetrate intact skin, it enters the body through: -cuts in the skin (cutaneous form) -breathed in (inhalation form) -mouth (ingested form from contaminated food).</p>	<p>- Stay at home; tune to radio or television for instructions - DO NOT go to an emergency room unless you are sick - If you have been exposed, obtain antitoxin treatment from medical staff as soon as possible</p>	<p>- Blurred vision and difficulty swallowing or speaking occur within 2-3 days</p>	<p>- Medical authorities must administer antitoxin - Treatment requires hospitalization - Soap and water and bleach will inactivate toxin. Do <u>NOT</u> drink bleach or use on skin.</p>	<p>No</p>
<p>Hemorrhagic Fevers (Viral infection) -Infection spreads through body fluids (blood, urine, stool, saliva) from the infected persons</p>	<p>- Stay at home; tune to radio or television for instructions - DO NOT go to an emergency room unless you are sick - If infected, seek immediate medical care</p>	<p>- Fever, muscle aches, diarrhea begins within 3-5 days of infection</p>	<p>- Medical personnel will administer antiviral drugs - Some hemorrhagic fevers respond to antiviral drugs - Infected persons should be quarantined - Bleach will kill the organisms on surfaces. Do NOT drink bleach or use on skin.</p>	<p>Yes</p>
<p>Ricin (Poison, called toxin, from castor beans) Enters the body through: -cuts in the skin (cutaneous form) -being breathed in (inhalation form) -mouth (ingested form from contaminated food)</p>	<p>-Stay at home; tune to radio or television for instructions - DO NOT go to an emergency room unless you are sick - There is no vaccine or antitoxin available</p>	<p>- Fever, tight chest, cough and respiratory problems occur within a few hours if ricin is breathed in - If taken in by mouth (ingested form) can cause intestinal bleeding and damage to kidneys and liver</p>	<p>- No vaccine or antitoxin is available, patients given supportive care -The toxin is inactivated by bleach or soap and water. Do NOT drink bleach or use on skin.</p>	<p>No</p>

FAQ'S for Biological Attack

What should I do to protect my family and myself if a biological agent were released in my community?

Emergency management teams will let you know if you need to evacuate the area. Self-isolation will protect you and your family from contagious diseases. Most agents are destroyed by bleach, or in some cases soap and water. Do NOT drink bleach or use on skin.

What should I do if I'm in a building during a biological attack?

Stay in your area so that you do not kick up dust. Cover your mouth with a handkerchief or clothing. If a letter or package is the source of the biological material, close the doors and windows of the room where the source is located and turn off air conditioning, heating and fans. Shout only as a last resort--shouting can cause you to inhale dangerous amounts of dust.

Is there a way to distinguish between anthrax and a cold or flu?

A runny nose is a rare symptom of anthrax. A person who has a runny nose along with other common flu-like symptoms is far more likely to have the common cold or flu than to have anthrax. Flu-like symptoms outside of the 'flu-season' should trigger medical attention.

Is smallpox released in a cloud (aerosol) form, how long does the virus survive? The smallpox virus is fragile. In lab experiments, when smallpox is put into a cloud form, 90% of the smallpox virus dies within 24 hours; in the presence of sunlight, this percentage is even greater.

Is smallpox contagious before the symptoms show?

A person with smallpox is sometimes contagious with onset of fever, but the person becomes most contagious with the onset of rash. The infected person spreads the disease into the air with his breath and from the scabs. Infected persons are contagious until the last smallpox scab falls off.

If someone is exposed to smallpox, is it too late to get a vaccination?

Vaccination within 3 days of exposure will completely prevent or significantly reduce the severity of the disease in the vast majority of people. Vaccination 4 to 7 days after exposure likely offers some protection from disease or may modify the severity of disease.

Should I keep a stockpile of antibiotics? No. There is no single pill that can protect against all types of biological agents, and antibiotics have a limited "shelf life" before they lose their strength. Also, antibiotics can cause side effects, and unless you store and take the drug properly, it may not work or may cause you to become ill. For most bacterial agents, the antibiotic regime must be specific for the agent and prescribed by medical personnel.

Is it safe to drink water from the tap? It would be extremely difficult for a terrorist to contaminate our drinking water supplies to cause widespread illness. Anything deliberately put into the water supply would be greatly diluted, and water treatment facilities routinely filter the water supply and add chlorine in order to kill harmful germs. However, citizens can protect themselves by boiling their drinking water, which will kill any microorganisms that may have survived the municipal filtration systems.

How can I recognize a bioterrorism hoax?

If you are not sure whether a bioterrorism report is true or not, check with credible sources, such as CDC's Health-Related Hoaxes and Rumors Web site at http://www.cdc.gov/hoax_rumors.htm. A number of Internet sites are available regarding urban legends and hoaxes, such as the Urban Legend Reference Page at <http://www.snopes2.com> and the Computer Incident Advisory Committee, and Department of Energy's HoaxBusters site at <http://hoaxbusters.ciac.org>. You can also get more information from Centers for Disease Control and Prevention Public Response Hotline (CDC):

- English (888) 246-2675.
- Español (888) 246-2857
- TTY (866) 874-2646

Should I purchase disposable masks as part of a home emergency disaster kit? Having disposable masks in a home emergency disaster kit is not a bad idea, but they are not absolutely necessary. In an emergency, you can get the same amount of protection by placing an article of clothing—a shirt or blouse, or a handkerchief—over your mouth and nose. It will likely be several days before we recognize that a biological weapon has been used against us. In some cases, even several days after an attack, medical authorities may want you to wear a simple paper mask when you go outside, so having them on-hand would be convenient. (Listen to the radio and television for instructions.) Paper masks offer little, if any, protection against chemical weapons, though. In an emergency, simply covering your mouth and nose with clothing—until you are out of the danger area—is a better idea. (Remove the covering and breathe fresh air, once you are out of the chemical cloud.) In any situation where there is a lot of dust and debris—for example, following any type of explosion—it is a good idea to cover your mouth and nose, to prevent your lungs from being damaged.

Chemical Attack

Threat	Immediate Action	Symptoms	Treatment (If Exposed)	Contagious ?
<p>Nerve Agents (VX, Sarin, Tabun)</p> <ul style="list-style-type: none"> - Can be liquid or gas Enters the body thru: <ul style="list-style-type: none"> - skin and eyes - breathing in (inhalation) - the mouth (ingested form from contaminated food) 	<ul style="list-style-type: none"> - Immediate actions for all chemical agents are very similar - If you are exposed, the effects will be fairly rapid -People around you may begin fainting, vomiting and have difficulty breathing - Birds and insects may die quickly and fall from the sky 	<ul style="list-style-type: none"> - First, pupils of the eyes shrink to pinpoints and victim begins sweating and twitching - Then, victim experiences runny nose, watery eyes, drooling, excessive sweating, difficult breathing, dimness of vision, nausea, vomiting 	<ul style="list-style-type: none"> -Remove clothing and flush eyes and skin with plenty of water - Seek medical attention immediately; there are antidotes for specific chemical agents - Atropine, a drug normally used in hospitals to treat cardiac arrest, is an effective nerve gas antidote, but should be administered only by qualified personnel 	No
<p>Sulfur Mustards</p> <ul style="list-style-type: none"> - Generally thick liquid, yellow or brown in color, with a slight garlic or mustard odor Enters the body thru: <ul style="list-style-type: none"> - skin and eyes - breathing in (inhalation) - the mouth (ingested form from contaminated food) 	<ul style="list-style-type: none"> - IMMEDIATELY leave the area - Avoid puddles of liquid -If the attack was outside, you should get inside a building or a car - If the attack was inside, get to the outside - If you were directly exposed, remove clothing (place in plastic bags, if possible) 	<ul style="list-style-type: none"> - Mustard gas is a blistering agent, burning eyes and skin exposed to it and lungs, mouth and throat if it is breathed in (inhaled) - Symptoms are not usually noticed until 1-6 hours after exposure 	<ul style="list-style-type: none"> - Remove clothing and flush the eyes and skin with plenty of water - Seek medical attention immediately; there are antidotes for specific chemical agents 	No
<p>Hydrogen Cyanide</p> <ul style="list-style-type: none"> - Hydrogen cyanide is an extremely flammable, colorless gas or liquid Enters the body thru: <ul style="list-style-type: none"> - skin and eyes - breathing in (inhalation) - the mouth (ingested form from contaminated food) 	<ul style="list-style-type: none"> -Removing contaminated clothing is more important than modesty - Do not remove contaminated clothing over your head; cut or tear it off to avoid contact with the eyes, nose, and mouth - Thoroughly flush all areas where agent contacted your skin using nearest water available 	<ul style="list-style-type: none"> - Symptoms include burning and redness of the skin and eyes - Breathing in hydrogen cyanide (inhalation) causes confusion, drowsiness, shortness of breath, leading to collapse 	<ul style="list-style-type: none"> - Get fresh air immediately - Flush skin or eyes with plenty of water - Seek medical attention immediately; there are antidotes for specific chemical agents 	No
<p>Chlorine</p> <ul style="list-style-type: none"> - Chlorine is a greenish-yellow gas with stinging odor - Heavier than air, so it will settle in low spots Enters the body thru: <ul style="list-style-type: none"> - skin and eyes - breathing in (inhalation) - the mouth (ingested form from contaminated food) 	<ul style="list-style-type: none"> - Hazmat/fire crews are trained for immediate response and medical treatment is available at most hospitals 	<ul style="list-style-type: none"> - Chlorine is very harmful to the eyes and skin and can cause tearing, blurred vision, difficulty breathing, and burns 	<ul style="list-style-type: none"> - Get fresh air immediately - Flush skin or eyes with plenty of water - Seek medical attention immediately; there are antidotes for specific chemical agents 	No

FAQs for Chemical Attack

Should I purchase a gas mask as protection? No. A mask would only protect you if you were wearing it when a chemical (or biological) attack occurs. A release of a chemical (or biological) agent is most likely to be done without anyone knowing it, so you would not know ahead of time to put on your mask. Wearing a mask continuously or "just in case" an attack occurs, is impractical, if not impossible. Masks that are not properly fitted will NOT give you adequate protection. For example, it is difficult to obtain a proper seal with the mask if you have facial hair such as a beard or long sideburns. Protective masks do not fit small children. There are reports of accidental suffocation when people have worn masks incorrectly, as happened to some Israeli civilians during the Persian Gulf War.

Should I keep a stockpile of water? You can live only a few days without water, so it is very important that you create an emergency supply of safe water. One gallon of safe water per person per day is the bare minimum for survival. Most surplus stores can sell you inexpensive, 50-gallon plastic drums. Properly chlorinated tap water can be safely stored for up to three months. Water purification tablets are also readily available from many surplus and camping supply stores.

What are the signs of a chemical attack? Many chemical agents cannot be seen or smelled. Observe the following rule of thumb: If a single person is on the ground, choking or seizing, this individual is probably having a heart attack or some type of seizure. However, if several people are down, coughing, vomiting, or seizing, they could be reacting to the presence of a toxic substance. Leave the area immediately, call 911, and tell the dispatcher a hazardous gas may be present.

What should I do during a chemical attack?

If the attack occurs indoors:

Exit the building immediately. Avoid puddles of liquid. Once outside, if you were directly exposed to a toxic substance, discarding your modesty and shedding your clothes could save your life. Taking off your outer clothing can remove roughly 80 percent of the contamination hazard. Look for a nearby fountain, pool, or other source of water to quickly and thoroughly rinse any skin that may have been exposed (e.g., jump in a pool). Water alone is an effective decontaminant. Try to remain calm. Rescuers will give medical attention to the most seriously injured individuals first.

If the attack occurs outdoors:

Birds and other small animals would very quickly be overcome by a poison gas, so if birds and insects are dropping from the sky, this is an indication of a possible chemical attack. The most important thing to do is to get a physical barrier between you and the toxic cloud. Get indoors quickly--into a building or a car. Shut all windows and doors and turn off the air conditioner or heater. Plug any air drafts (e.g., under doors). Call 911 and notify authorities that a hazardous gas may be present. The wind will carry the toxic hazard away within a relatively short period of time. Stay indoors, and turn on the television or radio for news. Authorities will notify you when it is safe to go outside. If you are at home, put your clothes in a plastic bag and take a shower to remove any contamination to which you may have been exposed.

“Dirty Bomb” Attack

Threat	Immediate Action	Symptoms	Treatment (if exposed)	Contagious ?
<p>“Dirty Bomb”</p>	<p>AT THE BLAST SITE</p> <ul style="list-style-type: none"> - Follow instructions of the emergency personnel - Stay calm—you have time—decontamination does not need to begin immediately - REMAIN in the area until released by emergency personnel - Cover your mouth and nose with a handkerchief <p>NEAR THE BLAST SITE</p> <ul style="list-style-type: none"> - Stay calm—you have time—decontamination does not need to begin immediately - Cover your mouth and nose with a handkerchief or other material - Proceed on foot away from the area - Do not take public transport, so you do not contaminate buses, subways, railcars, etc. - If you drive your car or truck, do not use the air conditioner or heater - At home, remove clothing OUTSIDE and place in plastic bag - Shower twice, wash all hair thoroughly - News broadcasts will instruct you on how to discard contaminated clothing and how to clean your car or truck 	<ul style="list-style-type: none"> - Symptoms depend on amount of radiation received - Radiation doses are referred to as the number of “rem,” just like temperature is referred to as the number of degrees - A chest x-ray is about 1/100th rem - An exposure of 5 – 75 rem produces few observable symptoms - An exposure of 75 – 200 rem causes vomiting, fatigue and appetite loss—recovery takes a few weeks - An exposure of more than 300 rem causes bleeding and changes in blood cells - An exposure of more than 600 rem causes hair loss and an inability to fight infections—it is usually fatal 	<ul style="list-style-type: none"> - Treatments are available for some types of radiation exposure - Wash any open wound several times with soap and water - Antinausea drugs and painkillers can relieve some symptoms - Antibiotics can fight secondary infections - Blood transfusions may be needed 	<p>No</p>

FAQs for “Dirty Bomb” Attack

<p>What is a “dirty bomb?” A “dirty bomb” is a conventional explosive such as dynamite packaged with radioactive material that scatters when the bomb goes off. (The radioactive material would likely be material stolen from hospitals, nuclear power plants, or other industrial sites. It is not the same as an atomic bomb.) Most “dirty bomb” casualties will be from the initial blast of the conventional explosive. The radioactive material that is scattered as a result of the explosion causes the “dirty” part. The TNT in such a bomb may still be more dangerous than the radioactive material. Its destructive power would depend on the size of the conventional bomb, and the amount of the nuclear material used.</p> <p>What is Radiation? Radiation is a form of energy that is present all around us. Different types of radiation exist, some of which have more energy than others, and some of which cause more harm to people than others. The dose of radiation that a person receives is measured in units called rem. For example the average person gets about 1/3 of a rem from natural exposure during a year, and approximately 1/100th of a rem from one chest x-ray. Radiation comes from man-made sources such as x-ray machines, from the sun and outer space, and from some radioactive materials such as uranium in soil.</p> <p>Will a “dirty bomb” make me sick? The effects of a “dirty bomb” can vary, depending on what type of radioactive material is used and on how much material is scattered. Although a “dirty bomb” could cause serious injuries from the explosion, it most likely would not have enough radioactive material in a form that would cause serious radiation sickness among large numbers of people. Just because people are near a radioactive source for a short time or get a small amount of radioactive material on them does not mean that they will get radiation sickness or cancer. However, radioactive material is much more dangerous if it gets inside your body by eating or drinking, breathing, or through an open wound than if it remains outside. If you come into contact with radioactive material from a “dirty bomb,” take the following precautions: Do not eat, drink, or smoke, do not lick your lips, and do not touch your hand to your face or to an open wound until you have left the contaminated area and have been properly decontaminated by experts.</p> <p>What Types of Terrorist Events Might Involve Radiation? Types of terrorist events could include introducing radioactive material into food or water supply (powdered or liquid radioactive material can be spread without using explosives), using explosives (like dynamite) to scatter radioactive materials (called a “dirty bomb”), bombing or destroying a nuclear facility, or exploding a small nuclear device. Although introducing radioactive material into the food or water supply would cause great concern, it probably would not cause much contamination or increase the danger of adverse health effects.</p> <p>What are the signs of a radiation attack? There will be signs of an explosion, but you cannot see or smell radiation.</p>	<p>How fast do I have to leave the area? For the most likely “dirty bomb,” anyone who survives the explosion will actually have hours to evacuate. There is no need for panic. It takes hours to accumulate enough radiation from a “dirty bomb” to cause you to get radiation sickness or develop cancer.</p> <p>How can I protect myself during a radiation emergency? <u>If you are advised to stay at home or office, you should do the following:</u> Close all doors and windows, Turn off ventilators, air conditioners, and forced-air heating units that bring in fresh air from the outside. Only use units to re-circulate air that is already in the building, close fireplace dampers, move to an inner room, keep your radio tuned to the emergency response network. <u>If you are advised to evacuate:</u> follow the directions from your local officials, and if immediately available, take a flashlight, portable radio, batteries, essential medicines, and cash and credit cards.</p> <p>You recommend NOT using public transportation when evacuating from a “dirty bomb” attack, but what about using my private vehicle? If you drive your car or truck, some radiation material may get inside and will have to be cleaned out. Listen to local news broadcasts for instructions about cleaning your vehicle. If you drive your private vehicle, do not run the heater or air conditioner. When you get home, remove your clothing OUTSIDE and place it in plastic bags. Listen to local news broadcasts for instructions on how to discard these contaminated clothes.</p> <p>I was a mile from the detonation -- am I going to be sick? Listen to emergency broadcast information for instructions that will depend on the size of the attack, direction of the wind, and components of the “dirty bomb.” It is extremely unlikely that anyone who survives the blast will become sick from radiation. In addition, your ability to have children will not be affected.</p> <p>Will I be able to decontaminate my home and continue to live in it during and after the attack? Yes. Decontamination is difficult but possible, and with reasonable effort and care you should be able to return to a normal safe life in your home.</p> <p>Should I buy a radiation detector? No. Unless you have been trained you won’t be able to interpret the readings. Many of the Geiger counters available commercially are worthless or uncalibrated.</p> <p>Should I purchase potassium iodide tablets for protection against radiation? No. Potassium iodide (KI) (available over-the-counter) protects people from thyroid cancer caused by radioactive iodine, a cancer-causing agent that can be released in nuclear explosions. KI should only be taken in a radiation emergency that involves the release of radioactive iodine, and <u>only</u> radioactive iodine, such as an accident at a nuclear power plant or the explosion of a nuclear bomb. A “dirty bomb” will not contain radioactive iodine, so KI pills are of no use for a “dirty bomb”.</p>
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