Executive Summary

Office for Domestic Preparedness
Training Strategy

An Introduction to ODP

The Office for Domestic Preparedness (ODP) is part of the United States Department of Justice's Office for Justice Programs (OJP). Its predecessor, the Office for State and Local Domestic Preparedness Support (OSLDPS) was established in April of 1998. The Mission of ODP is to build and enhance domestic preparedness capacity within state and local governments to assure effective response to Weapons of Mass Destruction (WMD) incidents. To fulfill this mission, ODP operates programs for equipment, training, exercises, technical assistance and research and development.

Executive Summary
An Introduction to The ODP Training Strategy

The Office for Domestic Preparedness (ODP) Training Strategy focuses on the most basic of issues and questions confronting the preparation of our nation to respond to WMD incidents. These questions include: **Who** should be trained? **What tasks** should they be trained to performed? **Which training/instruction methods and training sites** need to be paired with which tasks to maximize success in training? **What methods** are most capable of evaluating competency and performance upon completion of training; and **What gaps** need to be remedied in existing training to assure consistency with the findings of the training strategy?

Key Questions Addressed in ODP Training Strategy

- Who should be trained?
- What tasks should they be trained to perform?
- Which training instruction/delivery methods and training sites should be paired with which tasks to maximize success in training?
- What methods are most capable of evaluating competency and performance upon completion of training?
- What gaps need to be remedied in existing training to assure consistency with the findings of The Training Strategy?

Part I, Prominent Approaches to the Development, Delivery, and Revision of Training Programs, **Part II**, Model Process for WMD Training, and nine appendices constitute the bulk of The ODP Training Strategy. This Executive Summary highlights the **Fundamentals of the WMD threat**, the **Strategic approach to training** and the **Findings, Implications and Conclusions** that approach suggests so that they may be easily understood and implemented, and their impact expedited and maximized.

FUNDAMENTALS OF THE WMD THREAT

The threat of incidents employing Weapons of Mass Destruction (WMD) - nuclear/radiological, biological, chemical weapons and conventional explosives - is well documented and demands a response. Groups and individuals declaring this threat/issue to be valid cite the potential for unprecedented levels of devastation to be brought by such an incident, focusing on the latter portion of the "low probability, high consequence" mantra leveled at WMD. They also stress an overall lack of national preparedness to effectively respond to WMD incidents, as well as exponential increases in our society's inability to be inclusive and related increases in alienation coupled with greater knowledge of and easier access to the necessary ingredients for WMD. This combination is seen as

suggesting a "when, not if" dimension to full execution of the WMD threat. This dimension was coldly and demonstratively illustrated in attacks demolishing New York City's World Trade Center and significantly damaging the Pentagon in September, 2001. Other recent terrorist incidents around the globe and within the United States involving either conventional explosives or other weapons of mass destruction, including the Anthrax attacks in October 2001, underscore and confirm the legitimacy of the WMD threat.

Response to the Threat

The response of the federal government's legislative and executive branches to the WMD threat has been manifold with over 40 federal agencies and more than a dozen congressional committees sharing the lead. This response has been further magnified with the White House's creation of the Office of Homeland Security and complementary actions by the United States Congress.

A significant portion of the federal government's response to the WMD threat has been embodied in the United States Department of Justice's Office of Justice Programs (OJP). In 1998, the Department of Justice (DOJ) established ODP's predecessor, the Office for State and Local Domestic Preparedness Support (OSLDPS) within the OJP. The ODP provides funds and facilitation for equipment, training, exercises, and technical assistance to state and local emergency responders with the ultimate goal of building a solid, sustained domestic preparedness capacity throughout the United States. Successful achievement of ODP's mission and execution of its programs requires constant, ongoing assessments and reassessments of relevant information and knowledge.

An abundance of domestic preparedness training providers, courses, and facilities exist at all levels of government throughout the United States, as well as in the private sector. These resources must satisfy several million individual responders in need of initial training and sustainment training. However, the availability of training courses and facilities often does not imply that sufficient funds are available to actually execute training. In fact, funding availability to mobilize and conduct training is an exceptional and significant problem. Part of the difficulty may be that resources and workload are not well coordinated and that little, if any, central strategy exists to conduct training that meets training needs. *The ODP Training Strategy* provides guidance for planning, organizing and delivering the most appropriate and successful training for the most appropriate audience. Accordingly, it is a valuable resource for maximizing the impact of available funding.

Complexity of the WMD Threat

Numerous needs assessments, across disciplines and jurisdictions, have consistently identified a lack of training as a major obstacle to domestic preparedness. This finding is especially consequential alongside the realization that at least 10 distinct disciplines/professional groups are involved in responding to WMD incidents, performing over 152 separate tasks. Further, both the disciplines and tasks are likely to involve multiple dimensions in a WMD incident.[1]

These complexities are spread across an emergency responder community in the United States that is estimated at over 4 million individuals in thousands of agencies in some 3,400 jurisdictions - numbers which increase and regenerate due to attrition, reorganizations and especially due to advances in knowledge, technology and procedure. In this context, a strategic approach to successful

implementation of training and exercise programs to build domestic preparedness response capacity is required.

A STRATEGIC APPROACH TO TRAINING

The *ODP Training Strategy* provides a strategic approach to training and a national training architecture for development and delivery of ODP programs and services. The research, the work, and the goals of The *ODP Training Strategy* center on addressing and answering five critical questions encompassing smaller, derivative issues and concerns. The Findings and Implications section, and the Conclusion section within this Executive Summary address these questions specifically:

Who should be trained?

What tasks should they be trained to perform?

Which training instruction/delivery methods and training sites should be paired with which tasks to maximize success in training?

What methods are most capable of evaluating competency and performance upon completion of training?

What gaps need to be remedied in existing training to assure consistency with the findings
of The Training Strategy?

Tasks of the Strategic Approach

The initial task for *The ODP Training Strategy* was a thorough examination and documentation of prominent approaches to the development, delivery and revision of training programs. It was clear that no topic-specific models were available to direct the curricular processes related to response to incidents involving Weapons of Mass Destruction. The starting point, therefore, was the existing literature addressing teaching and training professionals in activities somewhat consistent with those of a WMD incident. The work for this task is fully documented in *Part I, Prominent Approaches to the Development, Delivery and Revision of Training Programs*, which provided the Strategy with an understanding of six issues critical to all learning endeavors.

Key Issues for Part I

- Different ways that people are able to learn and disseminate information and knowledge;
- Different ways curricula can be constructed;
- Different ways to identify what should be learned and different approaches to how it could be learned;
- Different ways to construct and integrate courses;
- Different ways to teach and deliver training courses: and
- Different ways to evaluate and test the learning of individuals and groups.

Succinctly stated, the information contained in Part I educated ODP regarding the existence of numerous approaches to learning and the relationship of those approaches to success in fulfilling the ODP mission.

The next major task for *The ODP Training Strategy* was to develop and apply a step-by-step strategic process for training specific to WMD incidents - a model process for WMD training. The work for this task is embodied in *Part II, Model Process for WMD Training.*

To develop the model process, the numerous protocols described in the literature review of Part I were synthesized, condensed, made appropriate to, and made specific for ODP-related training. This adherence to a legitimate, literature-based process provided the structure and rigor needed in developing *The ODP Training Strategy*. To ensure accuracy and objectivity, it required the input of external Subject Matter Experts (SMEs) from throughout the nation's emergency responder community, and relied upon research, examination, discovery and independent validation and revalidation, distrusting the potential bias inherent in conventional opinion and wisdom. One consistent caveat emerged from the work of this task - consistent with ODP's constant assessment and reassessment policy - neither knowledge, process or people are stagnant, hence a strategic approach should not be a one-time event, but a continuum of effort with a beginning, but no finality. The model process that was finally applied is illustrated on the following page.

Model Process for WMD Training

❶ Determine the "Mission" of Training Initiative.

❷ Identify the Disciplines or Organizations Housing Emergency Responders to WMD Incidents.

❸ Develop Matrix Task Needs Assessments for Emergency Responders in WMD Incidents.

❹ Establish the Tasks (Knowledge, Skills, and Abilities) Unique to WMD Incidents.

❺ Determine the Criticality of Each Task, as Well as the Complexity of Each Task.

❻ Specify the Training Methods and Site Most Appropriate for Each Task.

❼ Articulate Enabling Objectives or Learning Objectives for Each Task.

❽ Identify the Tasks not Addressed in Existing Training.

❾ Develop or Influence Training for Those Tasks.

❿ Courses Should be Sequenced Based on Complexity and Competencies/Proficiencies.

The process shown in the steps above was necessary to objectively determine and document the training mission, the training audience, work tasks performed in responding to WMD incidents and training needs. It was also critical to matching types of training with learning objectives, and delivery and evaluation methods.

To make these determinations and discoveries, and to document them, the application of the process was done in a sequential fashion. That is, after the completion of each step, there was reflection as to what that step suggested for the next. There was not a *pre hoc* determination of each step, each direction, and each element. The process provided a general blueprint or map, but it was constantly subjected to re-examination and revalidation.

At the completion of each task or step in applying the process, there was discussion, reflection, and examination of the participants' confidence in the comprehensiveness and results of that step. Further examination was appropriate in many instances, prior to moving to the next step.

The general evolution of the strategic process development and application followed a *graduated sequence* of activity representing an exhaustive application of the expertise of each tier, followed by the employment of an expanded group.

Graduated Sequence

Step 1 ODP management and administration frames initiative

Step 2 Small group of planners explore all possible models and variations that can be applied to WMD training

Step 3 Larger group of ODP staff critique strategic approaches being considered

Step 4 Results submitted to expanding iterations of Subject Matter Experts for input and final review

The graduated sequence is further evident in a more detailed chronology of events occurring during the conduct of *The ODP Training Strategy*. This chronology is presented on the next page.

Chronology of Events in the Application of the Strategic Planning Process

July, 1999

- ODP Director expresses concern with curricula development potential and ability to meet present and future needs of jurisdictions served.
- ODP Director begins dialogue with staff to develop strategic process and initiates first step of mission statement development to provide guidance for all subsequent steps.

September, 1999

- Development of strategic training process discussed at the National Domestic Preparedness Consortium (NDPC) meeting in Seattle (27^{th} - 30^{th}) and initial plans developed to proceed.
- Collaboration begun using three experts - a strategic planner, a WMD training developer, and an educational curriculum development specialist.
- Draft and revise "Architecture for WMD Training Delivery" - becomes basis for "Part I, Prominent Approaches to the Development, Delivery, and Revision of Training Programs" - is guided by taxonomies of education objectives common to all major curriculum development initiatives.

November, 1999 - March, 2000

- Continue to draft and revise "Architecture for WMD Training Delivery" (earlier draft of the Training Strategy for ODP continues with Part II initial drafting).
- ODP staff completes mission statement development including goals and objectives.
- Staff revisits and revises existing strategic plans related to training and training delivery focusing on who should be trained and what tasks they should be trained to perform.
- Work on task questions draws on research of ODP National Needs Assessment, (Responding to Incidents of Domestic Terrorism: Assessing the Needs of State and Local Jurisdictions - 1999).

July, 2000

- Meetings of Subject Matter Experts (SMEs) begin to address questions of who should be trained, what tasks they should be trained to perform, and whether existing training addressed all necessary tasks.

August, 2000 - December, 2000

- Full process described to the participants at the NDPC meeting. Process is discussed and approved.
- Key decision reached regarding expanded questionnaire of SMEs.
- Administration and analysis of questionnaire.

January, 2001 - March, 2001

- Questionnaire analysis results reviewed by ODP staff. Additional SME meetings conducted to review questionnaire responses and perfect learning objectives related to survey training tasks.
- Duplicative training tasks deleted following SME review.

April, 2001 - August, 2001

- ODP staff initiates and completes the assessment of which gaps need to be remedied in existing training by comparing SME approved tasks against existing WMD training programs.
- Concurrently, initial collaborators review product of strategy research produced by administrators, staff, and external SMEs.

FINDINGS AND IMPLICATIONS

The findings and implications of *The ODP Training Strategy* are prescriptive. They articulate or point toward a desired "state" - what ought to be. Given the multiplicity of disciplines, tasks and dimensions and the potential permutations and combinations, the findings and implications are numerous. However, exceptional themes did emerge. These are provided and organized consistent with the five major questions introduced at the initiation of *The ODP Training Strategy* in 1999.

Who should be trained?

Discussion

The most basic of the discussions among ODP staff and the SMEs surrounded the comprehensive list of "disciplines" involved in or affected by a WMD incident. Of course, the list is endless if taken literally, since everyone within a jurisdiction can be affected. It was determined to be over-reaching to include disciplines such as retail businesses, recreational facilities managers, and other similar groups. While affected, they do not represent a training target.

Findings

The Strategy identified 10 key disciplines whose personnel should be trained to respond to incidents involving WMD. These disciplines included Emergency Management Agencies, Emergency Medical Services, Firefighters, Governmental Administrative, Hazardous Materials Personnel, Law Enforcement, Public Health, Health Care, Public Safety Communications, and finally Public Works,. The following are definitions and categories relative to these disciplines.

Disciplines Requiring WMD Training

Emergency Management Agency
Organizations, both local and state, which are directed to coordinate preparation, recognitions, response, and recovery for WMD incidents. Titles - state and local EMA, voluntary organizations (VOAD), professional associations (American Society of Civil Engineers, American Institute of Architects, and so forth), human service agencies, and private agencies supporting EMA activities .

Emergency Medical Services
Individuals who, on a full time, part time or volunteer basis, serve as emergency responders, EMT (basic) and paramedic (advanced) on ground-based and aeromedical services to provide pre hospital care. Titles - emergency responders, EMT (basic), and paramedic (advanced).

Firefighters
Individuals, who on full-time, volunteer, or part-time basis, that provide life safety services including fire suppression, rescue, arson investigation, public education, and prevention. Titles - firefighters, company officers, and fire marshal’s office, US&R, and technical rescue.

Governmental Administrative
Elected and appointed officials responsible for public administration of community health and welfare during an incident. Titles - mayors, elected officials, executives, and chief administrative officers (city manager and supporting staff).

Hazardous Materials Personnel
Individuals, who on a part-time, full-time or volunteer basis identify, characterize, provide risk assessment, and mitigate/control the release of a hazardous substance or potentially hazardous substance. Titles - technician, specialist, MMRS, and private companies and contractors supporting hazardous materials activities.

Health Care[2]
Individuals who provide clinical, forensic, and administrative skills in hospitals, physician offices, clinics and other facilities which offer medical care including surveillance (passive and active), diagnosis, laboratory evaluation, treatment, mental health support, epidemiology investigation, evidence collection, along with fatality management for humans and animals. Titles - physicians, nurses, facility management, physician extenders (physician assistants and nurse practitioners), dentists, medical examiners/coroners, therapists, veterinarians, epidemiologists, pharmacists, technicians, security, environmental investigators, and medical records.

Law Enforcement
Individuals, full-time, part-time, or on a voluntary basis, who work for agencies at the local, municipal, and state levels with responsibility as a sworn law enforcement officers." Titles - patrol officer, SWAT, bomb technicians, evidence, supervision/management/incident command, and investigations.

Public Health
Individuals whose responsibilities include the prevention of epidemics and spread of disease, protection from environmental hazards, the promotion of healthy behavior, responding to disasters and assistance in recovery as well as assuring the quality and accessibility of health services. Titles - epidemiologist, environmental engineers, environmental scientists, occupational safety and health specialists, health educators, public health policy analysts, community social workers, psychologists and mental health providers and counselors.

Public Safety Communications
Individuals, who on a full-time, part-time, or volunteer basis, who through technology, serve as a conduit and link persons reporting an incident to response personnel and emergency management, to identify an incident occurrence and help to support the resolution of life safety, criminal, environmental and facilities problems associated with the event. Titles -call takers, shift supervisors, medical control centers, and dispatchers (EMS, police, and fire).

Public Works
Organizations and individuals that make up the public/private infrastructure for the construction and management of these roles within the federal level. The titles/roles include administration, technical, supervision, and craft (basic and advanced) in the areas of environmental services (water quality), solid waster, animal services, water treatment, public buildings, public parks, telecommunications, engineering, equipment services, electric districts, and digital cable.

What tasks should they be trained to perform?

Discussion

The initial inquiry into the tasks necessary to be performed began with ODP staff independently developing a list of tasks for each discipline involved in response to a WMD incident and then reviewing those tasks against tasks identified in ODP's 1999 needs assessment, *Responding to Incidents of Domestic Terrorism: Assessing the Needs of State and Local Jurisdictions*. Gradually through repeated reviews with expanded groups of ODP staff and SME's, an extensive list of tasks was developed by discipline, which professionals would be required to perform prior to, during, and immediately following a WMD incident. There were many duplications of tasks and much discussion turned on the amalgamation of tasks which were substantially the same and crossed all disciplines. These tasks, labeled "Global Tasks," required an examination of similar-appearing tasks as well as those determined to be substantively the same. The overall list of tasks, developed, refined, verified as unique to WMD in the application of the task, and organized by discipline or as applying to all disciplines, became the foundation of the answer to the question "What tasks should be the basis of WMD training?" Tasks were verified and validated by ODP staff and state and local SMEs, and additional information was gathered on each task.[3]

It was determined that a relatively large group of Subject Matter Experts (SMEs) would be surveyed to assess the tasks previously developed by the core group of SMEs. A total of 50 questionnaires from SMEs were received and 235 tasks assessed across 10 disciplines. Each task was assessed multiple times, from two to 18, depending upon the number of SMEs for each discipline. All totaled, 1,019 duplicated tasks were assessed, using twelve variables per task. The specific results of this survey are included in Appendix 1 of The ODP Training Strategy.[4]

Findings

- A total of **152 unduplicated tasks** were identified as comprising the universe of necessary tasks to be performed prior to, during and immediately after WMD incidents. It should be noted that these 152 identified tasks are dynamic and as new threats and responses are articulated, the list may expand or contract (see Appendix 2).

- All disciplines had tasks which were rated as "essential," but one in particular reflected a uniformity of **critical tasks**. The discipline with the highest average rate of criticality for the tasks inherent in that discipline was Emergency Management Agency. This may be due to the integral position of that discipline in the planning, coordination, and recovery regarding a WMD incident.

- Some tasks were common to all disciplines. The category of **Global Tasks** represents those tasks which, in the opinion of the SME groups, were applicable to all disciplines. These tasks represent the building blocks of basic curricular components which are necessary for every discipline. In the curriculum spiral, basic courses must be mastered before advanced courses are attempted. These "Global" tasks can serve as prerequisites or required course components in curricular planning.

Which training delivery or instruction methods and training sites need to be paired with which tasks to maximize success in training?

Discussion

The ODP Training Strategy addressed several delivery issues. It was important to learn that most of the tasks were placed in the lower levels of the cognitive domain. The implication of this finding is that those tasks are most often applicable to traditional methods of instruction. The complexity of the task, the dependence on particular equipment or expertise, location-specific issues, all contributed to the determination of the optimum site and delivery/instruction method of training necessary for each task.

Findings

- The placement of the tasks in and along a taxonomy of educational objectives suggests the type of training needed to affirm performance of the task, as well as the complexity of the training, the site, and the delivery methods or protocols. It allows resolution of issues associated with how and where training should be delivered to best accommodate the discipline-specific needs. The vast majority of all tasks fell within the cognitive domain and were in the lower half of that domain. This suggests that **traditional training methods are appropriate for most of the tasks**, and most of the tasks can be evaluated more easily than would be the case if they were in the higher levels of complexity of cognition. Traditional training methods include self-paced readings, videos, classroom lectures and discussion, and problem solving exercises.

- The **preferred location** for training for most tasks was "on-site" in the agency receiving the training, using those resources available to the agency should the event be real.
- **Centralized delivery of training** was determined to be preferable for a smaller number of tasks, and was viewed as important for exposing personnel to resources which might be available later, and to standardizing training in a controlled situation.

- The **preferred method for providing training** as well as testing or evaluating training was **projects and exercises**. Most specifically this means training methods that allow for demonstration and application of knowledge, skills, and abilities. Consequently, "projects and exercises" connote training emphasizing practical application, which can be conducted in any of several domains; e.g., the classroom and the field. "Simulations," "games," and "exercises" represent far more than an opportunity to display readiness. These are viable

training methods in which the learner recognizes deficiencies, repairs the deficiencies, and "learns" to perform the task. Additionally, training/trainees are evaluated on the competency and proficiency shown. The degree to which the tasks are performed is assessed in a risk-free environment so that when or if the environment is a real WMD event, the performance is more likely to be adequate.

What methods are most capable of evaluating competency and performance upon completion of training?

Discussion

A dominant theme in the literature, as well as in the policies and practices of ODP, is the need to evaluate training. If there are no expectations for the competency or performance of those being trained, there is little chance of determining the degree to which needs are being met.[5] The evaluation of training suggests the degree to which the training is successful, the degree to which knowledge, skills, and abilities are taught, and a level of confidence that the public is being adequately served by the agencies and professionals who are trained. For some tasks, the most appropriate evaluation methods are rather traditional. As the tasks become more complex or require the demonstration of skills and abilities, the evaluation becomes more demonstrative.

Exercises (both small and large), were frequently identified as most appropriate to show competence and evaluate performance. Individual tasks were more "competence" related while group or team tasks were more "performance" related. Indeed, exercises seemed likely to perform not only a critical role as a delivery method but also as an evaluation method.

One aspect of evaluation not addressed by the SMEs, but clearly identified in the literature, is the function of evaluation as a curricular revision tool. If training methods or approaches fail to produce the desired performance or competence, the curriculum should be revised or the methods reexamined to better accomplish the purposes.

Findings

- The **preferred method for** providing training as well as testing or **evaluating training** was **projects and exercises**. Most specifically this means training methods that allow for demonstration and application of knowledge, skills, and abilities. Consequently, "projects and exercises" connote training emphasizing practical application, which can be conducted in any of several domains; e.g., the classroom and the field. "Simulations," "games," and "exercises" represent far more than an opportunity to display readiness. These are viable training methods in which the learner recognizes deficiencies, repairs the deficiencies, and "learns" to perform the task. Additionally, training/trainees are evaluated on the competency and proficiency shown. The degree to which the tasks are performed is assessed in a risk-free environment so that when or if the environment is a real WMD event, the performance is more likely to be adequate.

- While the general preference for methods to test and evaluate training was projects and exercises, some tasks were viewed as amenable to testing using individual testing methods capable of determining competency. "Demonstration" of competence was mentioned frequently as a preferred method of testing, assessed during or independent of exercises. Some of the tasks frequently associated with demonstration of competence involved the development of plans, documentation, and equipment restoration. Written examinations or oral examinations were selected as the most appropriate testing method for tasks such as when to wear PPE, knowledge of different kinds of agents, special hazards of a terrorism incident, maintenance of data inventory, and terms or terminology associated with WMD incidents. These traditional types of evaluation are most appropriate as precursors or prerequisites to performance-measuring exercises and generally appropriate to idiosyncratic, lower-level (Knowledge, Comprehension) cognitive tasks which would then be consolidated or amalgamated in a small group or large group exercise.

What Gaps Need to be Remedied in Existing Training to Assure Consistency with The ODP Training Strategy?

Discussion

The clearest, most straightforward method of determining which tasks were covered by existing training programs was an inspection of the 152 tasks identified by *The ODP Training Strategy* by a team familiar with the training currently provided by ODP, the training under development by ODP, and the training offered or being developed by other federal agencies. This approach was able to identify those tasks being accommodated and, most importantly, those tasks not being accommodated by any training.

The team inspected each task, the learning objectives of each task and matched the task to the knowledge, skills, and abilities produced in existing ODP training. The tasks were categorized as (1) already accommodated in one or more ODP training initiatives or courses, (2) included in courses currently under development, (3) included in courses or training initiatives of a sister agency, or (4) recommended for the development of a new course or the enhancement of an existing course to include the task, knowledge, skill, or ability (See Appendix 4 of *The ODP Training Strategy* for the list of tasks and the gap analysis assessment).

Findings

- Of all unduplicated tasks, 55.3 percent were deemed to be accommodated through existing ODP training. Another 17.8 percent were included in courses currently under development. A few tasks, 9 total, were offered by sister agencies. These results suggest that **ODP has accommodated or is accommodating 73.1 percent of the tasks unique to WMD** identified by different, independent groups of SMEs, using different methodologies. An additional 5.9 percent of the tasks are within the purview of other sister agencies. The implication is that at the federal level, ODP is the dominant provider of training on all tasks associated with WMD and that it has been accomplishing its mandate appropriately.

- Thirty-two tasks, or **21 percent of all unduplicated tasks, were not accommodated by existing training** and were recommended for inclusion in existing courses or the development of new courses.

- An inspection of the **32 tasks** recommended for course development and **not being accommodated** through existing training suggests that most of these tasks are **complex ones**. These complex tasks generally involve coordination among and between disparate agencies and organizations or the management of activities within the agencies.

In the Global tasks applying to all disciplines, for example, one of the tasks identified as a gap is "Integrate volunteers, community groups, and individual expertise, as appropriate, into the WMD response plan. Indeed, "Coordinate," "Integrate," or "Manage" are the verbs associated with most of the tasks recommended for future development. This observation is important and problematic. These complex tasks, often at the higher levels of the cognitive domain, are the most difficult to teach or train and are almost always assessed through demonstration or exercise. Additionally, the content and scope of the complex tasks are often not evident until a level of practice has been achieved at the lower levels. Additional information gleaned from the more basic programs and curricula can inform and change the structure of the complex tasks. The basic level tasks are predicates for the more complex ones and most of these base tasks have already been developed or are being developed for delivery. The curriculum spiral suggests that this is an orderly progression and a necessary one for the future development of complex tasks, knowledge, skills, or abilities. Prudence would suggest, however, that the development of training to accommodate these tasks proceed immediately, especially considering the importance placed on many of the tasks by the SMEs and the clear need for development of training within a discipline as key to coordination as is EMA.

- Some disciplines represent a greater need for training due to the lack of WMD-specific training within the existing training available in those disciplines. **The disciplines showing the greatest need for WMD training due to the absence of existing training are**:

  Law Enforcement
  Public Safety Communications
  Governmental Administrative

  Each of these disciplines has only about one quarter of the tasks associated with WMD covered through existing training available within the discipline.

- Some disciplines have done an admirable job of incorporating WMD-specific issues and tasks into existing training. Those **disciplines which have high levels of accommodation of WMD-specific tasks in existing training are:**

  Hazardous Materials
  Firefighters

  Each of these disciplines has almost two-thirds of the WMD-specific tasks already addressed within existing training in those disciplines. It is evident that these disciplines have standards of training, performance, and competency which may have helped to encourage the inclusion of such issues and tasks, while monitoring their accomplishment.

- The development of new courses is a difficult and arduous process. **The disciplines of Emergency Management, Governmental Administrative, and Public Works represent those in greatest need of new courses** and the new courses are likely to involve higher levels of complexity, according to the SMEs. About one-third of the tasks requiring new courses in each of these disciplines are in the highest categories of the cognitive domain. These tasks typically require the greatest resources and time in order to assure competency. Most of the other tasks in those disciplines are in the lower categories of the cognitive domain. However, the Global tasks which need new courses are all in the higher levels of the cognitive domain.

CONCLUSIONS

The **first** major conclusion of The ODP Training Strategy, a point of uncertainty at the initiation of the study, is that **the WMD environment is one in which disciplines, tasks, and definitions can be articulated so that courses can flow logically from the competencies desired or needed.** This is no minor issue. Some phenomenon are so amorphous that they must have time to develop to the point that tasks can be identified in "successful" completion. Typically, practice provides the experience necessary for a phenomenon or focus of inquiry to mature to the point that curricular elements are identifiable. The experience with WMD is, fortunately, immature. The maturity of the disciplines associated with WMD, combined with the expertise of the SMEs, however, made the process possible.

A **second** conclusion is that **the strategic planning process used here is the superior process for current and future curricular development for training in a critical, sensitive arena such as WMD that has practical, applied aspects as well as planning and analytical aspects.** The synthesis of a variety of mature disciplines with relatively standardized training regimes with disciplines with little or no standardized training creates unusual problems. ODP is in the difficult position of bridging the territoriality of these disciplines such that if and when they must work together in responding to a WMD threat, they can do so with some sense of unity. This sense of unity can only be developed through the training process. Two common philosophical positions are (1) public service, and (2) strategic planning. Building on both predicates, the curricular development initiative has broad, accepted implications for WMD issues, as well as, other issues, threats, and agencies. This initiative can, therefore, serve as a model for the coalescing of disparate disciplines to achieve a unity of action in a crisis situation. This is perhaps the most important implication to draw from this initiative. The curriculum will change and be refined in the future, the tasks will change as new technologies and new threats become evident, and the disciplines will change as imperatively coordinated associations develop. The process described here will remain largely the same for ODP and any other organization adopting this approach. In fact, it is the strength and continuity of the process which will allow, encourage, and manage change.

A **third** conclusion of major importance is that there is a **clear and present need for the standardization of expectations and performance measures for tasks associated with the response to WMD threats.** That is not to say that standards are absent. They are certainly present, to a greater or lesser degree in the disciplines identified in this process. Some disciplines have firmly and clearly articulated standards for training and performance, based on the objectives for each tier

of practitioner in the discipline. Others have "standards" requiring or mandating a certain amount of training but not consistently specifying the topics, performance measures or competency levels. Others have virtually no specified standards of performance, training, or competency. All of the disciplines lack the requirements for comprehensive training on coordination with other disciplines during crisis situations. The lack of recognized, accepted standards of training for all disciplines as related to WMD threats is a major deficit. Correction of this deficit will require the leadership of ODP, other federal agencies and the cooperation of training partners as well as the disciplines in formulating, testing, implementing, and evaluating hypothetical standards of training which can ultimately be adopted as WMD standards. For those disciplines with established standards of performance and training, this goal will not be considered alien or even problematic. The segue will be almost seamless. Those disciplines relatively young in the development of standards will likely be resistant to such an initiative but the result can, again, serve as a model. What is accomplished for WMD threats can be accomplished for other types of crises, threats, and situations facing these disciplines and requiring that those disciplines clearly articulate standards of training, performance and competence. This implication is not intended to be pejorative or to suggest incompetence, poor performance, or immaturity within the disciplines nor inflammatory to anyone by the use of standard in any legal sense. After recognizing, testing, and validating the differences in tasks from discipline to discipline, a need for uniformity or consistency is evident.

A common theme in The ODP Training Strategy is the need for greater integration and coordination, discipline-to-discipline. This leads to the **fourth** conclusion that **it is critical for ODP to maintain its position of prominence in facilitating the training efforts of each of the disciplines as well as coalescing and coordinating the combined efforts of some or all of them.** For agencies, organizations, and disciplines to come together during a crisis situation and function as one, each with their own expertise and responsibility but coordinated in their accomplishment of the goal of public safety, requires a coordinating force. At the federal level, ODP is that force. The mission is to "build capacity" of the local and state agencies and organizations, in a collegial fashion.

A **fifth** conclusion of this initiative is **that the curricular development for WMD training appears to have progressed in an orderly fashion but can proceed in even more appropriate directions in the future.** That is not to say the assessment is over and the job is done. Quite the contrary. More information on the appropriate direction, tasks, training methods, testing methods, and sites is available now and better courses can be developed, providing more appropriate training for the disciplines. Additionally, many of the tasks are recommended to be combined with existing training in the disciplines, enhancing that existing training and not requiring new courses at the federal level. It is unusual for an organization to accept the notion that it should influence the work of others rather than do the work itself. With the information gleaned from this initiative, ODP should develop those courses needed to accommodate tasks which are not covered by existing training OR to influence disciplines to expand or bridge the existing training to accommodate the tasks.

A major implication associated with this conclusion is that **the training initiatives underway have face validity and are consistent with the general needs of the disciplines representing the audience.** This was not assumed at the outset of The ODP Training Strategy. It became evident that

the process used to develop the initial courses and curricula was consistent with the DACUM (Develop a Curriculum) models described in the literature. It relied on SMEs, experienced administrators, and a keen understanding of risks, threats, and response. This face validity does not invalidate the project, nonetheless, no curriculum is so appropriate that it cannot be refined. The refinement described in this process is so extensive, it is likely to be the most appropriate, most examined, and most validated set of tasks developed in such a short period of time. Over many years, some disciplines have refined the tasks and courses successfully, as is the case with Fire. The process described here is one that occurred actively in only one year yet it has the rigor seldom seen in similar processes lasting far longer.

Notes to the Executive Summary

1. The type of WMD incident is a critical factor. A WMD incident could involve a highly toxic chemical, or biological agent, or a radiological isotope, such as sarin, anthrax, or cobalt-60, respectively. These materials could be disseminated through an improvised explosive device in addition to other, secondary dispersal devices designed to harm the public in general and responders arriving at the scene.

The emergency responder community is a large one - involving emergency managers, emergency medical services, firefighters, hazardous materials (HazMat) personnel, law enforcement, public health personnel, public works personnel and potentially many other officials. Consequently, the matter of who should respond to a WMD incident has become an important, but not a simple issue joined by the issue of who among the emergency responders should command and control, the scene when numerous responders are present.

The different phases of WMD incidents involve another challenge: Whether the incident is the pre-incident, the crisis response and management, or the recovery and consequence management stage, has a major impact on all other dimensions of preparation and response.

The numerous jurisdictions of the United States present a wide and dynamic range of risk and threat factors relative to WMD incidents and thereby introduce the dimension of where to prepare for WMD response and the related matter of preparedness priority.

An overriding, if not final, dimension of WMD preparedness relates to what is intended to be achieved in preparedness efforts. Is the goal of these efforts awareness, deterrence, prevention, detection, effective response and management, crime scene management, full recovery and consequence management or some combination of each? Goal choice has perhaps the most controlling impact on preparedness and its actual substance. Each of these dimensions of a WMD incident has a great singular importance, but the ultimate challenge is to integrate all of these dimensions so that they are fully understood and coordinated and so that they function effectively in practical exercises and actual incidents.

ODP’s training program is its dominant effort toward realizing its mission. However, the terms "training" and "exercise" are often used interchangeably. And, in fact, exercise is generally viewed as the "highest" form of training. ODP operates both a training program and an exercise program. The special attention directed to exercises as a form of training by the organization is consistent with the findings of the Training Strategy of ODP. To wit, exercise is the method of training most capable of maximizing preparedness for response to a WMD incident.

2. We are reluctant to include the 63 Public Health and Health Care tasks in these data because they were not subjected to the full range of SME assessment in The ODP Training Strategy, particularly the last SME meeting in March, 2001 and subsequent ODP assessments. The Public Health tasks, along with those of Health Care were included in the SME survey conducted in late 2000. While these tasks are not reflected in the findings in this section, they represent important components in the coordinated response to WMD incidents and are likely to be further explored through the

continuing work of sister agencies such as those listed below. Midway through the ODP Training Strategy process, it was determined that, to reduce duplication of effort, those other agencies would move forward on Public Health and Health Care tasks and issues. The summary findings for these disciplines are presented here only to serve as benchmarks for these other efforts.

> There were 36 tasks identified early in the process as WMD-specific in the field of Public Health. The average criticality, according to the SME questionnaires, was 4.11 and the degree to which the tasks are accommodated by existing training in that discipline was 17.07%. The most evident gaps in existing training were associated with the development of plans for mass fatality management, mass medication and immunizations, and epidemiological coordination, all rated very high in criticality and very low in current implementation. Several of the most critical tasks involved coordination with EMA. Similarly, some of the most critical of the 27 tasks in Health Care involved coordination with EMA and the development of plans for mass medication and immunization. The average criticality level of Health Care tasks was 4.28 and, on the average, the rate of accommodation through existing training was 30.57%. Key findings associated with Public Health and Health Care, based on this inchoate assessment, focus on the pressing and unmet need for training in the development of coordination and collaboration plans between Public Health, Health Care, and EMA, particularly for mass medication and immunization, as well as plans to clarify epidemiological responsibilities within the disciplines.

Work for determining WMD training content for public health and health care professionals was conducted separately by the United States Department of Health and Human Services (DHHS), Office of Emergency Preparedness (OEP) via contract with the American College of Emergency Physicians (ACEP) to develop the strategies required to prepare emergency medical personnel- specifically emergency medical service providers, emergency physicians, and emergency nurses- to respond to WMD incidents. This work relied on a task force of Subject Matter Experts (SMEs.) The entirety of the work is contained in ACEP's Task Force of Health Care and Emergency Service Professionals on Preparedness for Nuclear, Biological, and Chemical (NBC) Incidents, FINAL REPORT on Developing Objectives, Content, and Competencies for the Training of Emergency Medical Technicians (EMT), Emergency Physicians, and Emergency Nurses to Care for Casualties Resulting From NBC Incidents, Contract No. 282-98-0037.

3. For example:
The degree of agreement among the SMEs for each discipline was remarkable. This agreement was measured using Kendall's W (Coefficient of Concordance) statistic and the lowest degree of agreement within the disciplines was .754 (Governmental Administration) and the highest was .94 (Public Works) showing almost perfect agreement. Even for the Global tasks, the coefficient of concordance for the 18 respondents was .892. These unusually high levels of agreement (1.0 would indicate perfect agreement and 0.0 shows perfect disagreement) validate the results since there is little variance in the responses across SMEs.

Key findings from the survey addressed the issues of criticality of the tasks (the exact question was "Indicate, on the scale below, the level of 'criticality' you associate with someone in your discipline being able to perform this task - How important is the task?" with a scale from Not Important (1.0)

to Essential (5.0)) and the degree to which the tasks are accommodated through existing training (the exact question was "Select the likelihood that the knowledge, skill, or ability associated with the task is already a part of the training received by most professionals in this discipline." with the range from Not Part of Any Existing Training (0%) to Already Part of All Training (100%)). Additional items from the questionnaire were selected and assessed for this summary. On average, the Emergency Management Agency tasks and the Hazardous Materials responder tasks were viewed as having the highest levels of criticality, although there was no effort to compare tasks across disciplines. The tasks listed within the Fire discipline and those under HazMat showed high levels of accommodation within existing agency and discipline-specific training (59.8 percent and 68.7 percent) suggesting that those disciplines have already addressed most of the key issues related to WMD through existing training. At the other extreme were the disciplines of Governmental Administration (22.4 percent of the tasks were accommodated through most existing training), Public Safety Communications (22.5 percent of the tasks were accommodated through most existing training), and Law Enforcement (26.7 percent of the tasks were accommodated through most existing training).

For all 235 tasks, the average criticality level, on a scale of 1 (Not Important) to 5 (Essential) was 4.2316. For all 235 tasks, the likelihood that the task is already part of the training received by most professionals in the discipline surveyed was 36.9833 percent.

4. Appendix 1 of The ODP Training Strategy includes detailed results of many aspects of the analysis, including the level of training and the method of delivery. The vast majority of the responses (98.6 percent) placed the task in the cognitive domain and 68.5 percent were placed in the lower half of that domain, in the categories: percent) placed the task in the cognitive domain and 68.5 percent were placed in the lower half of that domain, in the categories:

Knowledge	identify, specify, state
Comprehension	explain, restate, translate
Application	apply, solve, use

The preferred location of the training was "on-site" in the agency, described as "This traditional method could be offered at agency-specific locations, jurisdiction-specific locations, or regionally. Traditional methods are most appropriate for many clientele but time and travel restrictions may limit the audience."For some tasks, however, computer-based instruction (described as "This method may incorporate Internet instruction with the now established computer-based models for delivery of instruction to different audiences. This approach offers the most flexibility for the clientele but may compromise interaction, demonstration, and feedback.") was viewed as a viable alternative to traditional face-to-face instruction ("For some of the most complex tasks or tasks requiring particular equipment, centralized instruction was selected as the best option Some training courses are best offered in central locations. The reasons for transporting participants to central or regional locations can include issues such as models, rare equipment, instructional continuity, and the like.") It was not uncommon for the SMEs to designate two options as acceptable (generally On-site and Centralized were the options selected most frequently).

5. In the SME survey, "Projects and Exercises" was the method selected most frequently for providing the training, as well as testing or evaluating competence and performance for the tasks. Small group exercises were selected twice as frequently as large group or multi-agency exercises but those two categories represented the most often selected evaluation methods. Consistent with the literature, those tasks in the lowest levels of the cognitive domain were selected for written tests and those selected for computer-based instruction were often selected for self-assessment.