Acknowledgments

The Association of State and Territorial Health Officials (ASTHO) is the national nonprofit organization representing the state and territorial public health agencies of the United States, the U.S. Territories, and the District of Columbia. ASTHO's members, the chief health officials of these jurisdictions, are dedicated to formulating and influencing sound public health policy, and to assuring excellence in state-based public health practice.

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2006 ASTHO Delegation to Israel

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Public Health Preparedness Infrastructures
Comparing Israel to the United States

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EXECUTIVE SUMMARY

As U.S. health agencies continue to prepare for public health threats such as bioterrorism, pandemic influenza, and natural disasters, they have much to learn from the State of Israel. Israel has faced threats to national security since its inception in 1948. Since this time Israelis have had to prepare for conventional war, mass casualty events associated with suicide bombings, the potential of chemical warfare from Iraq, and most recently large-scale rocket attacks against civilians. A delegation from the Association of State and Territorial Health Officials traveled to Israel in December, 2006 through the Georgia International Law Enforcement Exchange to meet with representatives of the Israeli Ministry of Health to learn more about how Israel has responded to these threats. Along with specific promising practices, the delegation took back from this encounter a better understanding of some of the general principles for Israeli preparedness that should be considered for application in the U.S. These principles include continuous training and exercising, common doctrine, community engagement, and the targeted use of technology.

INTRODUCTION

In December, 2006 a delegation from the Association of State and Territorial Health Officials (ASTHO) traveled to Israel for a ten-day trip to explore the country’s public health preparedness infrastructure. The trip was organized by ASTHO, the Georgia International Law Enforcement Exchange (GILEE) program of Georgia State University, and the Israeli Ministry of Health. The goal of the trip was to identify practices that might be brought back to the United States for implementation in state public health agencies.

Through briefings, discussions, site visits, and the observation of two preparedness exercises, the delegation learned about the unique public health threats faced by Israel and the practices that they have adopted in response. This report provides an overview of the Israeli public health and homeland security infrastructure, the unique practices that Israel has undertaken in public health preparedness, and the opportunities and challenges to implementing those practices in state public health agencies.

History

While the September 11th attacks and subsequent anthrax mailings served to galvanize public health preparedness programs in the United States, the analogous sequence of events in Israel occurred ten years earlier during the first Gulf War in 1991. Although the country had been under threat since its inception and had already experienced suicide attacks on civilians, the Gulf War clearly signaled that the country was now dealing with a new type of unconventional threat. During this time, the launching of 39 scud missiles on Israeli soil by Iraq and the threat of chemical warfare pushed the government and the public to prepare for the worst. As precautionary planning, the Israeli government made the decision to distribute Gas Defense Kits (GDKs) to the entire population and recommended that each household create a “safe room” that could be air sealed in the case of a chemical attack.1 A preparedness mentality was burgeoning in Israel eight years before federal public health preparedness funding would be awarded in the United States and ten years before September 11th.

Terrorism continues to be a constant threat in Israel due to the unstable political backdrop of the Middle East. Many of the most deadly and highly publicized attacks have been acts of suicide terrorism with explosives.
More recently, the country was bombarded by rocket attacks from within the territory of Lebanon. The history of terrorism and conflict in Israel and the resulting public health consequences have compelled Israeli health officials to establish the necessary response systems needed to mitigate the effects of a large scale public health event.

Health Infrastructure

Israel’s Ministry of Health bears the burden of ensuring the public’s health. While not fully analogous to the U.S. Department of Health and Human Services (HHS) because of its more centralized authorities, the Ministry of Health has a similar leadership role to HHS with responsibilities including provision of health services to the country’s population and overall planning, supervision, and coordination of the healthcare system. The Ministry of Health partners with health funds, public institutions, and private agencies to provide services in five main areas:

1. Hospitalization including general hospitals, mental hospitals, and chronic care facilities.
2. Outpatient clinics both in and out of hospitals.
3. Preventive environmental health services to protect against environmental pollution, health hazards, and the spreading of disease.
4. Community services including psychiatric services, geriatric care, day care, and home care.
5. Supplementary services such as first aid and emergency transport.

These health system sectors are managed in some cases by specific departments within the Ministry of Health, such as the Nutrition Department, Dental Health Department, and the Health Education Department, and in other cases jointly by a conglomeration of private, public, and governmental institutions. The Israeli Center for Disease Control (ICDC) provides disease surveillance for the country within the Ministry of Health.

District and regional level health offices supervise overall medical services within their jurisdiction and implement public health preparedness programs at the community level. These local efforts deliver the higher level work of the Food Service and Environmental Health Department, the Psychiatric Service, the Nutrition Department, the Dental Health Department, the Health Education Department, and the Medical Road Safety Institute. In addition, 580 family clinics throughout the country advise the public on family planning, prenatal care, the care and treatment of infants, and the health of schoolchildren. The Mother and Child Department oversees these efforts and is responsible for their enactment.

The National Health Insurance Act of 1995 guarantees equal medical care to all residents of Israel, granting all health plans equal status. Four health funds, also known as sick funds, provide health insurance to 100 percent of the Israeli population: Kupat Holim Clalit, Kupat Holim Maccabi, Kupat Holim Meuhedet, and Kupat Holim Leumit. These health funds take the form of a health maintenance organization (HMO). Even though only a portion of Israel’s general hospitals are owned and operated by the government (11 out of 29), the government coordinates the preparedness of all general hospitals.

Emergency Response Infrastructure

When an incident occurs, responders from multiple agencies are dispatched to the incident scene. The incident command role, during routine times, is in most cases taken by police (with the exception being a radiological event), as opposed to the U.S. where that role changes depending on the type of incident. The incident commander wears a brightly colored uniform and hat for easy identification. The incident commander is responsible for directing all responders at the scene, regardless of agency. There are fewer jurisdictional divisions among agencies in Israel than in the U.S. (for example, only one national police department), which helps to simplify incident command challenges. Included among the responders is Magen David Adom, the Israeli ambulance service. Magen David Adom is semi-private, and operates in a manner similar to a national Red Cross.

An Israeli incident scene is divided into an inner and outer circle. The most crucial response activities take place in the inner circle, and the outer circle is used for communication, crowd control, security, and evacuation. How the incident is classified and managed outside of the incident scene depends upon the number of casualties. If the incident creates a greater number of casualties than can be handled by the normal operating capacity of nearby health care facilities (or even if the consequences of a smaller event appear likely to lead toward such a situation), the incident is declared a mass casualty event.

In a mass casualty event the authority to alert hospitals and manage secondary relocation of patients may be given to the Home Front Command, a division of the Israel Defense Force. Analogous to
the Emergency Operations Center (EOC) model, Home Front Command bases its multi-agency coordination and management operations in an outer-perimeter command post which includes representatives from all agencies and organizations that have an incident response role. Every representative present in the outer-perimeter command post maintains constant communication with his or her parent organization and retains direct access to his or her organization’s computer systems. In addition, an inner-perimeter command post conveys key information during an area-specific event. Home Front Command has three main preparedness goals which augment its role during an event. These goals directly link the public health response system to the military and its resources, including reserve soldiers:

1. Unify terminology among all agencies involved in a large-scale public health event.
2. Establish a central command post to control the flow of resources and ensure a smooth response to an incident.
3. Establish a clear command structure and assign responsibility at every stage of crisis management.¹

Through the Home Front Command, the Israeli government has the authority to mount a full multi-agency response to public health events in a more centralized manner than is possible in the U.S. All heavy mechanical equipment that is registered with the government, such as bulldozers, tractors, and cranes, can be redeployed for service in an emergency. Bus companies must maintain a predetermined number of vehicles ready to evacuate people and transport workers to the site of a large scale event. All media outlets are mandated by Israeli law to provide the military immediate access to broadcasting and publication channels in an emergency. A group of government agencies created 20 prerecorded messages providing specific instructions for the public that are aired on Israel Television at the discretion of the Ministry of Health. These provisions grant the Israeli government control over resources and communications channels in order to effectively and efficiently respond to an incident.¹

**PROMISING PRACTICES**

The ASTHO delegation observed many unique and effective Israeli practices for public health and medical preparedness, several of which are explained in more detail below. In general, the practices demonstrate a commitment to preparedness based on Israel’s unique threat environment, geography, and governmental structures. The ASTHO delegation observed some unique practices that may have application in the U.S. as well as others whose implementation would be challenged by dispersed jurisdictional authorities, greater private sector ownership of hospitals and other response assets, different social norms and expectations, and larger geographic scope, among other factors.

**Public Health Preparedness and Response**

The greatest challenge presented by the mass casualty events that Israel has seen in recent years have been the need for rapid mobilization of health care assets within the EMS and hospital system in response to explosive terrorism. However, threats such as biological terrorism, pandemic influenza, and industrial chemical accidents are becoming increasingly important to Israeli planning. Israel is at high risk from biological terrorism given the country’s geographic location and the politics of the region. Israel also lies within a major wild bird flyway, and experienced an outbreak of H5N1 avian influenza among commercial poultry in March, 2006.

In Israel there is not as sharp a dividing line between public health and medical preparedness as exists in the U.S. Both are functions of the Ministry of Health and rely on closely tied funding streams, command structures, and data systems. This section focuses on the Israeli response functions that would be categorized as “public health” under the U.S. system. Among those activities are epidemiology, public health laboratories, and countermeasure management and distribution.
**Disease Surveillance**

Israeli disease surveillance practices are in large part shaped by the structure of the country’s healthcare system. There are four governmentally sanctioned HMOs in Israel that provide regular disease reporting to the Ministry of Health. The HMOs rely on electronic medical records that are helpful for feeding data into disease surveillance systems. The Ministry’s Israeli Center for Disease Control (ICDC) has developed a syndromic surveillance system called the Medical Information Support System for Managing Infectious Disease Outbreaks of Non-Conventional Origin (MISSION) based on the data received from HMOs.

Based on the initial results of the system, its designers have concluded that early detection is hard to achieve in fast, localized outbreaks, such as acts of bioterrorism. The Israeli concept of operations still assumes that bioterrorism events will be identified first through hospital diagnosis and laboratory confirmation. However, they have also concluded that the timely information produced by syndromic surveillance is of high value in supporting outbreak management. For example, the ICDC has found the system to be effective for monitoring hospital admissions for influenza-like illness and expects the system to have utility for hospital resource allocation in the event of a pandemic.

**Laboratories**

Laboratories play a key role in detection of an act of chemical or biological terrorism. The Israeli concept of operations does not rely on field testing for these agents, but on rapid transportation of samples to laboratories. There is no passive air surveillance system for threats such as the U.S. BioWatch system. Even for explosive incidents, laboratory analysis is important to ensure that there is no spread of infection from a suicide bomber to a victim or from victim to victim.

**Medical Countermeasures**

The Israeli Ministry of Health maintains seven warehouses across the country stocked with medical countermeasures. They are developing a stockpile that will include sufficient antiviral drugs for pandemic influenza to provide post-exposure prophylaxis to 25 percent of the population and pre-exposure prophylaxis to up to 100,000 healthcare and other essential personnel.

The decision to purchase this amount of antiviral drugs was based on a peer-reviewed cost-benefit analysis performed by the Ministry of Health\(^3\). Antiviral stockpiles do not contain product expiration dates on individual units in order to make it easier to adjust shelf life requirements based on new information.

Israel also maintains stockpiles against likely agents of biological terrorism. Included in this stockpile are antibiotics for anthrax and vaccine for smallpox. Should a case of smallpox present itself anywhere in the world, Israel plans to immediately vaccinate its entire population within four days by closing public schools and using them as emergency vaccination centers.\(^4\)

Israel does not place the entire responsibility for mass prophylaxis on health agencies. The Home Front Command is responsible for maintaining the capability for four-day mass vaccination, and provides most of the logistical support for this response. The Ministry of Health is responsible for vaccinating medical personnel, patients who are confined to their homes, and individuals who need re-vaccination or were missed during the initial mass vaccination.

**Opportunities and Challenges for U.S. Implementation**

Israel and the U.S. are currently implementing many of the same systems for public health preparedness in slightly different ways. For example, while some U.S. jurisdictions are already implementing electronic disease surveillance systems, the lack of uniform electronic health records and lack of automatic government access to private sector data sources makes this a much more challenging system to implement in the U.S. Jurisdictions that have
begun developing these systems may look toward the Israeli experience to gain a better understanding of realistic expectations and best uses of those systems.

**Hospital Preparedness and Response**

Israeli health and medical preparedness is based on a system of centralized healthcare and emergency response authorities. This provides significant legal authority to the Ministry of Health over the operation and regulation of hospitals. Even with this legal authority, the relationship between the Ministry and the hospitals in emergency preparedness is one of cooperation and collaboration. This relationship is driven by a sense of shared responsibility for being prepared. The Ministry works with hospitals to develop common emergency response doctrine and to ensure compliance with this doctrine through regular exercises (described in further detail below).

Emergency preparedness considerations are important in the regulation of Israeli hospitals. The Ministry of Health requires hospitals to maintain the ability to provide 20 percent surge capacity in the event of an emergency, and has recently made purchases to enable access to six times the average ventilator need. In addition, all emergency department floor plans must be approved by the Ministry of Health. Hospital emergency departments are required to be able to quickly transform and expand to accommodate large inflows of patients. They must be partitioned in such a way that large spaces may be opened up during an emergency by the removal of curtains or temporary partitions. Other wards of the hospital are often fitted with gas lines and other fixtures that would be necessary in order to transform them quickly into annexes of the emergency department.

The Ministry of Health receives daily bed availability updates from all hospitals. A mass casualty event is declared when the number of casualties is too great to be handled by the normal operating capacity of the closest hospital. There are four levels of alert for Israeli hospitals:

- **I – Routine**
- **II – General Threat**
- **III – Focused Threat**
- **IV – Violent Event**
- **V – Mass Casualty Event**

When an emergency occurs, a hospital evacuates current emergency department patients to other wards of the hospital very quickly (often in five minutes or less). Patients in those other wards may be discharged to make more room, and elective procedures are canceled. Discharged patients are monitored after they leave the hospital. Hospital staff retrieve pre-stocked emergency supply carts and other supplies from storage rooms and don color-coded vests to signify individual emergency job functions.

If a disease agent is identified, posters describing the appropriate treatment protocols are hung on the walls.

The removal of curtains and deployment of emergency signage on pull-down screens creates a one-way patient flow so that there is no confusion in moving patients between services.
A senior surgeon determines admission of patients into the operating room in order to eliminate bottlenecks. If additional hospital staff are required, the hospital’s command center alerts off-duty staff through text messaging and other means.

**Opportunities and Challenges for U.S. Implementation**

Many Israeli hospital preparedness practices could be beneficial to the U.S. health care system. The challenge that exists is to implement those practices within a system of privately managed health care and insurance, less day-to-day visibility of mass casualty events, and less robust governmental authority to regulate hospitals.

There are few direct financial incentives for U.S. hospitals to undertake the same type of extensive emergency preparedness measures as their Israeli counterparts. Maintaining high levels of surge capacity is expensive, and mass casualty events may not be frequent enough for an individual hospital to benefit from maintaining high surge capacity levels at all times. Even the configuration of emergency departments becomes a challenge in a private hospital. It may be difficult to eliminate private rooms given the preferences of a facility’s paying patients. Funds are currently available through the National Bioterrorism Hospital Preparedness Program for states to fund hospitals to engage in preparedness activities. However, given the large number of U.S. health care facilities, the funds are not sufficient for the types of large-scale changes that have taken place in Israel.

Given the constraints of the U.S. system, the lesson from Israel that may be most easily applied is the importance of common response doctrine and continuous exercising for hospitals. Israeli hospitals have implemented some very inexpensive changes (such as supplying color-coded vests to specify individual emergency response roles to hospital personnel) that may assist hospitals in training staff and ensuring that they know their roles during emergencies. Further details on Israel’s training and exercise program for hospitals are provided later in this report.

**EMS, Decontamination, and Triage**

The Israeli emergency medical system is unified under the name Magen David Adom (MDA) which is often likened to the Red Cross. An MDA national dispatch center in Tel Aviv is supplemented with 11 regional dispatch centers throughout the country. The EMS response to mass casualty events is very rapid in Israel, with responders arriving within five minutes of notification of an incident and the evacuation of the critically injured occurring within a half hour on average. Fast response times are facilitated by GPS on-board computers that can receive assignments and direction through central dispatch monitoring.

Israel’s entire medical response system emphasizes continuous, ongoing triage at multiple levels to ensure that treatment is prioritized appropriately. Determination of acute stress disorder is an important part of this triage. Experience has been shown that up to 80 percent of all casualties from Israeli mass casualty events have acute stress disorder without any other underlying physical symptoms. These patients are brought to separate facilities, but are still examined thoroughly to ensure that no other physical injuries are present.

Because many Israeli mass casualty events are related to terrorism, care must be taken to ensure safety of EMS personnel. Personal protective equipment (PPE) against chemical and infectious threats is kept in all Israeli ambulances, as is body armor.
Much care is taken at the site of a bombing incident to ensure that responders are protected from secondary devices and that secondary devices are not brought back into ambulances or health care facilities. This requires careful coordination between EMS personnel and bomb squads. Close coordination with police is also required to map safe evacuation routes from the incident scene. All ambulances are given at least a brief inspection at hospital entrances due to previous attempts to attack facilities using bombs hidden in ambulances.

During a chemical emergency, police and fire personnel remove patients to a safe perimeter where they are loaded into ambulances by EMS personnel. Israeli response doctrine emphasizes evacuation to hospital and treatment over immediate on-scene decontamination for chemical incidents. This is due in part to the fact that EMS personnel are expected to have adequate protection from chemical agents. Also, it is assumed that most incidents will occur within a reasonable driving distance from a hospital given the geography of the country.

When it is needed, decontamination occurs at the entrance to the hospital. Areas of the driveway and parking lot are either pre-marked with painted lines or blocked off with barriers to direct traffic. Metal stretchers are lined up to receive patients from ambulances, and patients are taken immediately to have their airway checked. After this, they are washed using pre-installed hoses with warm water by personnel in personal protective equipment. They are then transferred to a separate stretcher and taken into the hospital.
U.S. EMS responders can learn from Israeli practices in safely approaching terrorism incident scenes and avoiding secondary devices. Israeli practices for triaging and treating acute stress disorder patients as part of normal response protocols may also be helpful to U.S. EMS and health care providers. Although the Israeli doctrine of decontamination at the hospital entrance differs from the standard U.S. doctrine of decontamination prior to boarding the ambulance, many U.S. hospitals have built capacity for hospital-based decontamination. The Israeli experience demonstrates that a large number of patients will bring themselves to the hospital in their own vehicles after an event, which provides an additional reason for U.S. hospitals to have the capacity for hospital-based decontamination regardless of EMS decontamination protocols. U.S. hospitals may consider enhancing their decontamination capacity by procuring additional personal protective equipment, installing appropriate outdoor plumbing, mapping out patient flows with outdoor signage, and instituting ongoing decontamination exercise programs.
Exercises and Training

In March 2002 a suicide bombing at the Park Hotel in Netanya killed 30 people and injured 140. The area in which the attack occurred was not one of the more populated parts of Israel, and the local hospital had to make an overwhelming effort to respond. This event and the collapse of a wedding hall, a year earlier, that killed 23 and injured almost 400, led Israel to focus even more intently on hospital surge capacity and training and exercising of medical personnel. It also led to an increased use of realistic medical simulation technology as part of this training.

Israel engages its preparedness community in exercises with high regularity in order to practice and refine doctrine which assigns specific roles and responsibilities in an emergency. Hospital drills follow a three year cycle with a different type of exercise held each year. In the first year, hospitals practice the response to a conventional mass casualty event. In the second year they practice the response to a toxicological or chemical mass casualty event. In the third year, the hospital designs a program to address a particular need or weakness of the institution or of the country as a whole. The five hospitals that are designated responsible for radiological response are drilled once every two years on this threat. Every year, each hospital is drilled for one type of biological event (anthrax, SARS, or pandemic influenza).

The Israeli Defense Force mandates that these drills occur and works closely with the Ministry of Health and hospitals themselves in planning, conducting, and analyzing each exercise. The Ministry of Health conducts an annual surprise exercise at each hospital to test preparedness. Results of these exercises are shared on an anonymous basis with all hospitals nationwide in order to develop a knowledge base of lessons learned and best practices. The Ministry will also occasionally test hospitals with mannequins or actors that simulate the symptoms of a bioterror attack in order to test whether a proper diagnosis is made.

In addition to these hospital exercises, individual health care providers are required to take part in regular training. Paramedics, physician, and nurses are required to train at least once each year on conventional and non-conventional mass casualty events. Some of this training is provided through medical simulation courses that use sophisticated mannequins as well as live actors to test the skills of providers. For military physicians, simulation courses simulate a combat environment through smoke, light, and sound effects. As with hospital exercises, the “mistakes” made by physicians in medical simulation are published anonymously for the benefit of others.

Physicians hone their skills through work in hospital emergency departments. All hospital physicians in Israel are required to work emergency department shifts, regardless of their primary area of practice. The emergency department shifts pay more, and allow physicians to earn an average of 60 percent of their salary through emergency work. During an incident, physicians from all wards of the hospital are called upon to respond in the emergency department, and are able to do so due to their ongoing training.
Opportunities and Challenges for U.S. Implementation

Physician training in emergency preparedness is not as far advanced in the U.S. as it is in Israel. Some training programs have been developed in the U.S. and even serve as international models, but are not applied as rigorously as in Israel. For example, the U.S. CDC funded the development of standardized national curriculum for Basic Disaster Life Support and Advanced Disaster Life Support. Israel relies on these courses for physician training, but does more than the U.S. to extend this training to all physicians and to require continuing education in emergency preparedness.

Developing a comprehensive training system like Israel’s would be difficult, but there are intermediate steps that might be taken to increase physician understanding of emergency preparedness. Even increasing the number of healthcare providers with BDLS/ADLS training or providing more emergency department work experience could help significantly with surge capacity. The curriculum and equipment needed to offer these courses is plentiful in the U.S., and much could be done by increasing interest and resources to make it possible.

Likewise, an exercise program comparable to Israel’s is unlikely to develop in the U.S. in the near future. As described above, the financial disincentives are too great and the need is not perceived as sharply. However, it is clear that an increase in hospital exercises would be both beneficial and achievable. Many hospitals already conduct exercises and train staff in incident command under the National Bioterrorism Hospital Preparedness Program. As hospitals and their staff grow more accustomed to these exercises as part of normal life, there may be opportunities to increase exercise frequency and participation. State health agencies play an important role in assisting hospitals with exercise design and providing incentives and encouragement.

Community and Psychosocial Services

The Israeli experience demonstrates clear linkages among national security, community resilience, and psychosocial services. This has been true from the time of the founding of the country, when Jews fleeing Europe and the Holocaust came to Israel to develop a new common identity. The scars of the Holocaust still remain in many Israeli citizens, and have caused complications in patients who are reminded of their experiences while in a hospital setting. For years Israeli hospitals have identified such patients upon admission so that they may follow special precautions so as not to stimulate those memories.

During recent mass casualty events Israeli medical responders have observed that up to 80 percent of victims are diagnosed with acute stress disorder without any other underlying physical harm. The recent war with Lebanon created an environment where many residents were on edge for long periods of time over the possibility of rocket attacks. Although relatively few rockets injured or killed Israelis, the effect of the war on psychosocial health was tremendous in areas facing continuous rocket attacks such as Sderot, near Gaza (see below). Several new techniques for managing psychosocial impacts were tested during the war and found to be effective.

Psychosocial support in Israel is provided simultaneously at the individual and community level. Recently, a new program was developed at the Tel Aviv Medical Center to identify individuals with psychosocial support needs and match them to the appropriate interventions. This program, called Hosen (“resilience”) is a concerted Israeli effort to identify and treat patients who are at risk for post-traumatic stress disorder (PTSD) and acute stress reactions, prevent secondary trauma as a result of hospitalization, address compassion fatigue, and give continuity to psychosocial care across hospitals units and into the community.

Hosen techniques were developed based on interviews with survivors of terrorist incidents who described their experiences being hospitalized. A “Hosen scale” is used to assess patient risk for psychosocial complications. Interventions are targeted toward at-risk individuals through in-house and community referrals. Other interventions such as debriefing, counseling, and group discussion are targeted toward ensuring that hospital staff members themselves do not suffer from “compassion fatigue.” Overall, the program has created a stronger bridge between medical staff and social workers in the hospital, and has allowed psychosocial concerns to become a key component of medical treatment.

The Israeli system also addresses psychosocial needs at the community level. Years of suicide bomb attacks have taught Israelis the importance of psychological healing from those events. A primary concern in the response to terrorist bombings is to quickly evacuate casualties, collect the needed forensic information, clean the scene, and remove police barriers as quickly as possible. The goal is to
accomplish all of this within six hours so that the community feels a sense of normality.

Community level interventions have been extremely important to areas that have been exposed to a long term threat of rocket attack. The town of Sderot is extremely vulnerable to rockets launched from Gaza, and received thousands of attacks between 2001 and 2006. Seven of the town’s 24,000 citizens were killed over this time period, and many more were wounded or psychologically affected. However, very few sought psychosocial support services. In cooperation with the Maccabi HMO, the town began a concerted campaign to reach out to at-risk residents by starting a Hosen program at the local hospital and developing community support groups for parents, children, and youth. They found that the participants in groups were helped by the program, and that the implementation of the program itself helped volunteers feel more control over their own lives so that they were better able to cope with attacks.

Opportunities and Challenges for U.S. Implementation

The psychosocial support services offered by Israel can be seen as a model for implementation in the U.S.. There are very few legal or financial barriers to implementing such programs in the U.S. system, and the benefits are many. Such programs would require primarily an identified need in a specific jurisdiction and volunteer will and enthusiasm to drive implementation.

Public Communication

Israel’s population is accustomed to acts of terrorism and other emergencies, but this has not necessarily reduced the challenges associated with risk communication. In fact, the country’s experience responding to terrorism may have actually increased public expectations of the government’s response and elevated tensions with the media during emergencies.

Recent non-terrorism events have further challenged Israeli risk communicators. In recent years the Ministry of Health has had to disseminate messages related to potential drinking water contamination, the death of four people soon after receiving seasonal influenza vaccination, and an H5N1 avian influenza outbreak in commercial poultry flocks. Each of these events posed unique challenges. When four people died after receiving influenza vaccination, the Ministry had to try to reverse the steep decline in public acceptance of annual vaccination. During the potential water contamination event, the Ministry had to communicate with religious communities who do not use mass communications on the Sabbath. During the avian influenza outbreak, the Ministry had to tell the public how to safely handle and cook chicken without referring to cooking temperatures (due to the lack of kitchen thermometers in many households). In each of these events, as in terrorism events, it was the Ministry’s responsibility to instruct the public, reduce public anxiety, prevent the spread of rumors, and provide true and reliable information.

The Israeli risk communication strategy begins well before an event takes place. All Israeli schoolchildren are taught the basics of terrorism preparedness and response as early as kindergarten. This helps them to be vigilant and watchful for suspicious activity, and provides a context for understanding events when they occur.

When an event occurs, the Israeli government takes a pro-active approach. Even at the level of the incident scene, passers-by are encouraged to act as volunteers to assist with the response. Even if the assistance is not always needed, the act of volunteering gives the public a greater feeling of ownership over the response. Other citizens receive information through a dedicated television channel (channel 33), which broadcasts the government’s public messages during emergencies. The government also has plans to reach key audiences who do not use mass communication during certain times for religious reasons.

The public is always very concerned about the possibility that loved ones may have been involved in an incident. To respond to the need to disseminate information about victims in a fast and efficient way, Israel launched a victim registry known as ADAM in 2003. As victims are admitted to the hospital, they are photographed immediately. Pictures are fed into a computer along with any other identifying information about the patient. Wallets and other personal belongings are often removed during evacuation or decontamination, so physical characteristics are extremely important for identifying the patient.
All hospitals and information centers in the country have access through the Internet to the ADAM system. Families may call any hospital for information from ADAM, and only people who have relatives that were identified as involved in the event are directed to the hospital where the victims are being treated. This prevents a crowd of people congregating at the hospital where treatment is being given while allowing the families to talk with hospital personnel and access the most current information available.

**Opportunities and Challenges for U.S. Implementation**

Many Israeli risk communication practices mirror similar practices in the U.S. For example, Israel has adopted U.S. practices such as the use of 1-800 lines. The challenges faced by the two countries are very similar, and their risk communication strategies reflect that.

The ADAM system is a unique solution to the issue of victim identification that may be applicable in the U.S. In the aftermath of both 9/11 and Hurricane Katrina, there was no standard, organized way to record and share information about victims. A system such as ADAM could serve that purpose, and does not face significant technological or legal challenges to implementation. The most difficult part of the system would be gaining acceptance for it in numerous independent jurisdictions, and this is most likely an issue that could be resolved over time.

**General Themes**

The practices described above vary in their applicability to the U.S. system. However, there are some general principles that the ASTHO delegation identified as important for any jurisdiction that can be implemented more strongly to improve U.S. preparedness:

- Continuous Training and Exercising
- Common Doctrine
- Community Engagement
- Targeted Use of Technology

**Continuous Training and Exercising**

Drills and exercises are seen in Israel as the most essential tools for building and maintaining an effective health and medical response. Israeli officials remark that Israel’s response capacity is the result of practice and continual learning. Israel trains its health and medical staff in emergency response using the most advanced techniques and technologies available. To maintain their skills, personnel are retrained on at least an annual basis and required to participate in emergency response exercises. The lessons learned from these exercises are shared throughout the response community nationally and are incorporated into subsequent generations of plans, procedures, and guidance.

**Common Doctrine**

The Israeli system relies on common doctrine across all jurisdictions and response disciplines in order to ensure a predictable and orderly response. During an emergency, well-defined command and control structures are activated and protocols are displayed prominently to minimize the amount of guesswork and improvisation that must go into the response. This may be easier to achieve in Israel than the U.S. due to a more centralized Israeli governmental structure. However, the U.S. has demonstrated an appreciation for common doctrine by implementing the National Incident Management System nationwide and organizing resource typing initiatives. There may be opportunities to come to greater national and regional consensus on common doctrine through focused efforts.
Community Engagement

In the White House evaluation document on the response to Hurricane Katrina, the Administration challenged the public health community and the nation as a whole to “foster a new, robust Culture of Preparedness.” Israel has already achieved such a culture. Barring religious, physical, and psychological exemptions, all Israelis must serve in the Israel Defense Force, which makes for a population that is personally invested in the well being of its nation. This provides Israelis with a working understanding of command structures from firsthand experience and a baseline of skills upon which to rely in an emergency situation. To this point, the majority of explosive devices placed in public areas in Israel have been discovered by civilians who alerted authorities before detonation occurred.\(^1\)

A well developed and practiced system of risk communication keeps residents informed and provides them with the needed instructions for keeping themselves safe. In Jerusalem, the establishment of Community Emergency Centers has strengthened the public’s role in emergency response and helped residents to prepare their neighborhoods for all hazards. Community Emergency Centers are staffed by both professionals and volunteers and provide residents with social services and communication support during emergencies.\(^6\)

Targeted Use of Technology

Israel has access to high technology resources both internally and from other countries and has developed technological solutions to many of its preparedness challenges. For example, Israel has an advanced GPS-based system for ambulance dispatch, has developed internationally recognized medical simulation centers using the latest training mannequin technology, and has developed innovative electronic systems for syndromic surveillance and victim identification. However, Israeli officials do not view technology as the most important component of their emergency response system. Rather, they use low technology solutions whenever they can for the sake of simplicity and efficient resource allocation, and focus their efforts on developing a well prepared workforce.

The Israeli concept of operations for bioterrorism detection relies on physician diagnosis and laboratory confirmation rather than air sampling or syndromic surveillance. While syndromic surveillance is used in Israel, its purpose is as a supporting tool for epidemiologists to use to determine resource allocation needs as an event unfolds. When technology solutions are deployed, it is for the purpose of assisting personnel in carrying out their duties. It is for this reason that Israel devotes significant resources to the use of technology for emergency response training and exercising, which are ultimately tools for effective workforce development.

CONCLUSION

The Israeli health and medical preparedness system evolved over time based on the country’s experience dealing with a unique set of threats. Challenges such as the first Gulf War, suicide bombings, and the war with Lebanon have each required a distinct health response. Lessons learned from these events have shaped the system into one that can respond to a variety of health threats. Despite challenges in implementing all lessons learned from Israel, adopting a common doctrine for emergency response and continuous exercising of hospitals could be a feasible starting point. As U.S. policymakers look toward Israel for unique practices, they should focus not only on individual practices implemented for Israel’s specific needs, but on the culture of preparedness that has developed over time within the Israeli government and population. This culture of preparedness has led the country to dedicate significant effort and resources to preparedness and to practice constantly so that their response improves over time. With this same dedication to continuous learning the U.S. can continue to improve its preparedness system into one that can respond to a wide variety of threats using a system that is uniquely suited to U.S. needs.


