Managing Antiviral Medication during the 2009 H1N1 Influenza Pandemic:

State and Local Public Health Department Responsibilities

January 2013

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EXECUTIVE SUMMARY

Antiviral distribution and dispensing are critical to reducing the number of cases and deaths from an influenza pandemic. This report summarizes the antiviral distribution and dispensing activities conducted by state and local health departments in response to the 2009 H1N1 influenza pandemic. This report is the first stage in a larger project that the Centers for Disease Control and Prevention (CDC), the Association of State and Territorial Health Officials (ASTHO), the National Association of County and City Health Officials (NACCHO), and other partners are conducting to explore alternative models for antiviral management during an influenza pandemic.

ASTHO and NACCHO used multiple approaches to gather information from state and local public health representatives about antiviral distribution and dispensing during the H1N1 outbreak. Both organizations conducted literature reviews, evaluated health department after-action reports (AARs) for the 2009 H1N1 pandemic influenza, and examined key informant interviews, with NACCHO focusing on local health officials and ASTHO addressing state and territorial officials. Additionally, NACCHO and ASTHO convened advisory groups comprised of state or local public health officials, respectively, to provide subject matter expertise, guidance, and leadership for the project. ASTHO and NACCHO jointly hosted roundtable discussions during the July 2011 Strategic National Stockpile (SNS) Summit to gather additional information from federal, state, territorial, local, and tribal representatives.

This report synthesizes information and anecdotal experiences from the state/territorial and local health department (LHD) perspectives. This review is not a comprehensive analysis and may not represent all experiences or viewpoints. Each state, territorial, and local health department managed how it released (for downstream distribution and dispensing) the stockpiled antiviral medications differently, which allowed for varied early successes and challenges in response to the 2009 H1N1 pandemic. At the onset of the 2009 H1N1 pandemic, most state and some local health departments already had some stockpiles of antivirals through a federal subsidy purchase program. This report focuses on antiviral distribution and dispensing from the CDC's SNS to state/territorial health departments (S/THDs) and then subsequently from state to LHDs during the pandemic.

Eleven key themes were identified for antiviral distribution and dispensing activities during the 2009 H1N1 pandemic and will be explored in this report:

Process Themes

1. Allocation
2. Receiving and Staging
3. Storage
4. Distribution
5. Dispensing
6. Returning, Redistributing, Relabeling, and Disposing of Unused Antiviral Medications

Overarching Themes

7. Communication
8. Legal and Policy Considerations
9. Security
10. Tracking and Reporting
11. Population Considerations

Process Themes

1. Allocation

The 2009 H1N1 pandemic emerged as a threat to U.S. citizens and prompted the federal government to release antiviral medications from the SNS to states based on predetermined pro rata (population-based) allocations. State and local health departments then managed and allocated these critical resources to their populations. Allocation decisions varied in state and local health departments, ranging from strict pro rata appropriations to allocation based on clinical need. In making allocation decisions, health officials worked to balance equity with clinical need and commercial product scarcity by assessing population demographics, epidemiological data, and healthcare sector distribution.

Allocation Planning—Considerations

- Consider ethical principles when making allocation decisions to ensure equitable access to antivirals.
- Explore and consider alternative allocation schemes that are flexible and equitable. Per capita allocation may not account for a population's clinical need.
- Consider alternative, more time-efficient allocation schemes. Allocation decisions based on epidemiological data are arduous and may prevent supplies from reaching populations in a timely manner.
- Properly communicate allocation decisions and rationale to all partners to increase efficiency in the response.
- Improve decision-making capabilities at the state and local levels by increasing dialogue between states and the federal government concerning the decision to release antivirals, proposed allocation methodologies, and guidance around distribution and dispensing practices.

2. Receiving and Staging

The phrase "receiving and staging" describes state and local public health departments' ability to secure locations and personnel to receive antivirals, conduct warehouse operations, and prepare these antivirals for delivery to dispensing sites. Many state and local health departments planned and exercised how to receive and stage medical countermeasures prior to the outbreak, which contributed to the many successes of these operations during H1N1. There were, however, some jurisdictions that had challenges, particularly with discrepancies in communicating the timing and contents being delivered to the jurisdiction.

Receiving and Staging—Planning Considerations

- Delays in receiving antivirals by either the state or local health departments can quickly result in community shortages.
- Effective and accurate communication around deliveries' timing and contents is essential for S/THDs and LHDs to receive and stage materiel smoothly.
- Conduct exercises that allow state and local health departments to test their receiving and staging capabilities for pandemic influenza preparedness.
- Having volunteers or dedicated personnel experienced in warehouse operations can decrease the burden on S/THD and LHD staff tasked with other response roles.

3. Storage

Storing medical countermeasures is a significant component of preparedness planning. For many states and localities, the 2009 H1N1 pandemic was the first event in which storage for antivirals had to be readily available; those storage facilities also had to retain stockpiles for longer than anticipated. Although storing antiviral supplies was a smooth process for most state and local health departments, the cost of long-term storage was burdensome.

Storage—Planning Considerations

- Continue to evaluate storage options and capabilities, including external and internal partnerships, because they could be beneficial in future preparedness planning efforts.
- Because the cost to store antivirals can be burdensome, federal, S/THD, and LHD partners should discuss careful and practical decision-making around initial distribution or consider initial supply/resupply models to mitigate costs.
- Consider ways for state and local health departments to leverage public or private entities' expertise regarding storage.

4. Distribution

The 2009 H1N1 pandemic was the first time many states and localities engaged in large-scale distribution. Distribution went well for most S/THDs and LHDs, particularly those that were able to harness both private and public resources.

Distribution—Planning Considerations

- Consider ways for S/THDs and LHDs to leverage the expertise of public or private entities in the business of distribution, which can be a large asset to public health.
- Consider establishing agreements with multiple entities (e.g., establish contingency plans) to ensure that S/THDs' and LHDs' needs are met even if some assets are not available during public health emergencies.

5. Dispensing

Dispensing is the process of providing medical countermeasures directly to the end-user. Although planning for large-scale exercises regarding dispensing medical countermeasures has been underway for some years, the 2009 H1N1 response was the first event in which this function had to be put into operation by S/THDs and LHDs around the country. S/THDs are not typically responsible for dispensing; they are, however, involved with disseminating guidance to dispensing entities, and they worked with many community partners on antiviral dispensing during the 2009 H1N1 pandemic. LHDs are typically responsible for dispensing; however, given the low severity of H1N1 and availability of antivirals in the commercial sector, LHDs dispensed limited amounts of antiviral drugs.

Dispensing—Planning Considerations

- Develop clear triggers for dispensing antivirals before an emergency so that S/THDs and LHDs can plan and respond appropriately. The low severity of the 2009 H1N1 virus and availability of antivirals in the commercial sector limited the need to dispense government stockpiles.
- Receiving increased assistance from both federal and national private sector associations in establishing memorandums of agreement (MOAs) with pharmacies or other dispensing partners could greatly benefit S/THDs and LHDs.

6. Returning, Redistributing, Relabeling, and Disposing of Unused Antiviral Medications

As the response to the 2009 H1N1 pandemic began to wane, many S/THDs and LHDs were left with large quantities of antiviral medications to manage. At the local level, unused antivirals were typically returned to S/THDs, which then determined further action. Although some of these antivirals were disposed of, most still continue to be stored in state managed stockpiles as of summer 2011.

Returning, Redistributing, Relabeling, and Disposing of Unused Antiviral Medications—Planning Considerations

- Increased planning should occur to ensure all assets are used, redistributed to populations in need, or given to entities (such as SNS or pharmaceutical distributors) that are better equipped

to handle long-term storage. Long-term storage of antivirals by state, local, or partner organizations can be expensive and complicated for some entities.
- Address legal and regulatory issues regarding redistributing and disposing of antivirals for each jurisdiction before an event.
- Consider the possibility of S/THDs redistributing supplies early in an event. Specifically, state and local jurisdictions must weigh the pros and cons of distributing all supplies too early in an event and build in the capacity to adjust distribution, if needed, as the event unfolds to best address the community's changing needs.

Overarching Themes

7. Communication

Communication is an essential activity during any response. Strong internal communication at state and local levels was essential during H1N1. However, federal, state, and local coordination and communication could be improved for the future.

Communication—Planning Considerations

- Consider ways for S/THDs and LHDs to improve internal communications, including using the incident command structure (ICS), before an emergency.
- Improve federal, state, and local coordination and communication by increasing visibility and information sharing among all stakeholders.
- Be cognizant of S/THD and LHD stakeholders' communication capabilities and incorporate alternative communication strategies into preparedness planning.
- Streamline messaging and requests at the federal, state, and local levels and establish a single point of contact to ease information exchange and improve response.
- Establish databases with the contact information for the medical community partners in the respective S/THDs' and LHDs' jurisdictions.
- Foster relationships with community partners that can share information with community members who do not access public health information through traditional mechanisms.
- Consider ways to increase staff training and develop more coordinated plans for how best to communicate with the public, media, and outside stakeholders during an emergency.
- Garner support from the national level of large private sector organizations (e.g., pharmacy chains, insurance companies) so local partnership activities between public health and local corporate branches can develop plans and boost confidence.

8. Legal and Policy Considerations

State and local health departments encountered many legal and policy challenges regarding antiviral distribution and dispensing during the H1N1 pandemic. As part of this review, James G. Hodge, Jr., JD, LLM, analyzed legal and policy issues encountered by federal, state, and local public health organizations during the 2009 H1N1 response.

Legal—Planning Considerations

- Increase S/THD and LHD staff awareness of their legal authorities during a declared public health emergency.
- Establish, where possible, contracts and MOAs with both public and private sector partner organizations before a public health emergency.
- Resolve legal barriers, where possible, to effectively manage antivirals before a public health emergency.

9. Security

Securing medical countermeasures during a public health emergency is an important consideration in preparedness planning. Because the severity of the 2009 H1N1 pandemic was lower than that of historical influenza outbreaks, the event did not create a large enough demand for medical countermeasures to elicit a security risk to state-held or locally held antiviral drug stockpiles. The response did, however, give many states and localities an opportunity to test their security plans. Most security plans for antivirals focused on ensuring product safety during transportation and storage. Because antivirals were stored longer than anticipated, security also remained in place for that duration.

Security—Planning Considerations

- Consider future security plans that are more scalable and easy to adapt depending on the severity of the event.
- Preparedness planning efforts should consider the need for long-term security because S/THDs and LHDs were responsible for storing antivirals longer than anticipated; therefore, security remained in place longer than anticipated.

10. Tracking and Reporting

Tracking and reporting inventory levels of antiviral drugs was an integral part of antiviral management during the 2009 H1N1 response. Maintaining situational awareness on product inventory at the state and local levels is critical to ensure that medications are available in the right place at the right time. During the 2009 H1N1 response, tracking and reporting processes and requirements varied greatly among S/THDs and LHDs.

Tracking and Reporting—Planning Considerations

- Develop a standardized set of data elements for tracking distribution and dispensing to minimize burden across organizations and more readily provide a common reporting method.
- Develop tracking and reporting systems that are easy for all partners to use and compatible with existing systems.
- Maintain situational awareness during an emergency by managing data regarding antiviral distribution and dispensing.

11. Population Considerations

During the 2009 H1N1 response, state and local health departments worked to ensure that certain populations were able to obtain information and access to antivirals. S/THDs and LHDs defined these populations to include the following groups: first responders/medical professionals; those at high risk for severe illness, complications, or death from the virus (pregnant woman, immunocompromised patients, etc.); those with limited or no access to healthcare (uninsured, underinsured, homeless, etc.); and those who may have challenges accessing needed health information (non-English speakers, those with visual, auditory, or cognitive impairment, etc.). S/THDs and LHDs should continue to consider the needs of these populations in their community and ensure they have access to medical countermeasures during an emergency.

Population—Planning Considerations

- Consider the role of first responders, medical professionals, and other critical infrastructure when planning all public health preparedness efforts; however, not all emergencies may warrant special provisions for these populations. Additional discussions regarding when such provisions may or may not be warranted should occur with these groups before an emergency.
- Develop better strategies for reaching priority groups, high-risk populations, or those with communications challenges before a public health emergency. It is particularly important to establish relationships with providers

or entities that already have strong relationships with these populations.
- Continue to consider the special needs of the populations with limited or no access to healthcare in their communities, and work to ensure these populations have access to medical countermeasures during an emergency.

Conclusion

Managing medical countermeasures during a public health emergency, particularly a pandemic, is a critical public health function during a response. Although there was considerable variability in how antiviral medications were managed at the state and local level during the 2009 H1N1 response, this report highlights 11 key areas that represent the common themes, experiences, successes, and challenges of both state and local public health departments during the H1N1 response.

Each section of the following report highlights planning considerations for federal, state, and local public health officials. Overall, many of these considerations point to the need for ongoing investment in a robust public health system. Many of the challenges discussed in this report resulted from eroding public health infrastructure. Although this report focuses on antiviral management, S/THDs and LHDs have many other roles during a response, including surveillance, epidemiology, and communication. Without solid investment in public health infrastructure (staff, information technology, equipment, etc.), it will grow increasingly difficult for S/THDs and LHDs to mount the proper response to an influenza pandemic. Federal, state, and local public health officials need to consider their essential roles during a response and what resources will be necessary to accomplish their mission to protect the health of their communities.

MAIN REPORT

Introduction

During the 2009 H1N1 influenza pandemic, the Centers for Disease Control and Prevention (CDC), through the Strategic National Stockpile (SNS), released 11 million courses of antiviral medication to state/territorial health departments (S/THDs), four directly funded cities, and the U.S. territories. These antiviral medications were then further distributed to local health departments (LHDs), hospitals, clinics, pharmacies, and other organizations responsible for directly dispensing medications to the public. Although antiviral distribution and dispensing during an influenza pandemic are critical public health functions required to help mitigate the disease's effects, little to no data exist regarding how best to distribute and dispense antivirals in such an emergency. This report summarizes the S/THDs' and LHDs' activities regarding antiviral distribution and dispensing in response to the 2009 H1N1 influenza pandemic, in an effort to collect and analyze data to assist decision-makers in future pandemics.

This report was coauthored by the Association of State and Territorial Health Officials (ASTHO) and the National Association of County and City Health Officials (NACCHO), and funded through a non-restricted cooperative agreement provided by the CDC's Influenza Coordination Unit. ASTHO and NACCHO are national-level organizations that promote sound public health policy and strengthen public health practice in support of their respective memberships. ASTHO represents the 50 state public health departments, the District of Columbia, and the eight territorial or freely associated state health departments. NACCHO represents the approximately 2,800 local public health departments in the United States.

This report is the first stage in a larger project that the CDC, ASTHO, NACCHO, and other partners have undertaken to explore alternative models for antiviral distribution and dispensing. The full project goals are to expand the understanding of how state and local public health systems manage antiviral distribution and dispensing, explore more efficient ways to distribute and dispense antivirals during a public health emergency by leveraging existing private sector systems, and contribute to the knowledge base regarding effective countermeasure enterprise, as called for by the National Health Security Strategy.

Background

Although medical countermeasure planning has been underway for more than a decade, its significance became heightened following the 2001 anthrax attacks in the United States and has remained in the forefront of public health preparedness planning through numerous federal reports, presidential executive orders, and legislation. From 2001 to 2011, billions of dollars and personnel time were devoted to ensuring the availability of medical countermeasures during a public health emergency. Historically, antiviral stockpiling and planning emerged in response to concerns about H5N1 influenza, which circulated in other parts of the world and contributed to the urgency for the federal government to increase pandemic disease preparedness activities, including stockpiling critical countermeasures. To ensure medical countermeasures would be available, the National Pharmaceutical Stockpile (NPS) was created in 1999 with a mission to provide large quantities of essential medications and supplies to states and territories during an emergency. In 2003, NPS became the Strategic National Stockpile (SNS).

The CDC manages this division, whereby medical supplies and pharmaceuticals are stockpiled and poised for deployment to areas where an emergency has occurred. The stockpile is designed to help supplement or resupply state and local assets during an emergency. Information on the stockpile's exact location, size, and composition is not publicly available; however, a large quantity of antivirals is known to be stored in

During the 2009 H1N1 response, S/THDs distributed antiviral drugs to the following:

- Public/private hospitals.
- LHDs (for dispensing and redistribution to community providers).
- Public/community health clinics.
- Tribal health clinics/hospitals.
- College/university student health centers.
- Regional distribution sites (including pharmaceutical distributors).

Although scarcity of antiviral resources and hoarding were not major issues during the H1N1 response, most pandemic preparedness plans contain strategies to prevent inequitable distribution of antivirals. In a severe pandemic scenario, where medication shortages could occur, S/THDs must continue to be cognizant of the potential for hoarding. Additionally, S/THDs may require clear guidance from the federal level on how best to verify need and respond to provider requests for scarce resources.

Local Perspective

Allocation decisions have a direct effect at the local level and are, therefore, very important to LHDs who are charged with the health and well-being of the communities they serve. From LHD 2009 H1N1 pandemic AARs and interviews, the topic of allocation came up in the following areas: S/THD decisions on initial allocation, resupply and supplemental supply, and LHDs allocation decisions to other local community partners.

Not all LHDs were allocated antivirals. Three LHDs reported that their state decided not to distribute antivirals to LHDs (one state did no distribution, one distributed directly to hospitals only, and one distributed to a single pharmacy chain). The LHD that reported that the state choose a single pharmacy chain noted that there were no branches of the pharmacy in their jurisdiction and therefore, functionally, no public health supplies of antivirals were readily available to their community.

Of LHDs that received antivirals, they reported that their initial allocation of antiviral medications from the state was based on population. Most LHDs thought that this allocation method worked well for serving their community, particularly given the availability of antivirals in the commercial supply chain. A few LHDs, however, asserted that the communities they serve have more at-risk populations than some of their neighboring LHDs. Therefore, in a more severe pandemic or during a shortage of antivirals, their LHD may have a harder time serving those most in need in their community.

As the 2009 H1N1 response continued, states offered additional allotments of antivirals. Due to uncertainties around the pandemic, many LHDs continued to accept their full allotments from the state despite having a surplus of antivirals in their storage facilities. LHDs were concerned that if they forwent their additional allotments then they would lose future claim to them.

Some states allocated directly to other local level community partners, relieving the LHDs from making allocation decisions. Although most of the LHDs in these states would have preferred to make the allocation decisions for their community, the bigger challenge was the SHD not informing them about which organizations in their community had received antiviral medications.

In most states, however, each LHD was able to select which partner organizations within their community should receive antiviral medications. Many LHDs had previously established allocation plans for their community partners. Types of organizations that received antivirals from LHDs (either through pre-planning or through decisions made during the 2009 H1N1 response) included hospitals, clinics, federally qualified health centers, rural community health providers, prison health services, tribal clinics, and

Because the information presented here and in the complete legal analysis does not provide an overarching assessment of all relevant state or local laws, state actors and their local counterparts may need to conduct further assessments to identify how their particular state legal infrastructure relates to several key issues identified here and in the larger legal analysis. Appendix VI, Relevant State Law Template and Examples Regarding Antiviral Distribution and Dispensing, provides an initial tabular guide of select legal issues for which states may seek to explore.

Pre-Emergency Strategic Planning and Preparedness

S/THDs and LHDs agreed that pre-planning efforts were critical in the response to the 2009 H1N1 pandemic. Formal and informal agreements with public and private entities for goods and services are essential. Such agreements allowed S/THDs and LHDs to set the terms under which antiviral management, distribution, and dispensing occur. The following three examples are formal and informal agreements that S/THDs and LHDs used during the 2009 H1N1 pandemic:

- Contracts: Formal contracts are legally binding documents that detail exactly how each party is obligated to perform under specific terms. Contracts that are binding may not be ideal for emergencies, whereas more flexible, scalable contracts would work well in this context.
- Memorandums of Understanding (MOUs) or Agreement (MOAs): MOUs and MOAs may be intentionally worded to be less constrictive than traditional, binding contracts. However, MOUs can be contractually binding if certain conditions are met.
- Multiagency Coordination Systems (MACS): MACS establish dispatch procedures, command structures, support activities, and other advanced strategies. MACS can be less formal than MOUs or contracts while still serving the interests of response and resource transfer.

Most S/THDs and LHDs entered into MOUs or contracts with public and private partners for transportation services and pharmacies for dispensing, storage, and warehousing operations before or during the 2009 H1N1 pandemic. Although these agreements helped to facilitate business between parties, developing and executing these agreements during an event can be problematic and potentially delay effective responses. Advanced planning related to these agreements helps obviate potential legal issues.

S/THDs were particularly concerned with negotiating MOUs or MOAs with pharmacies. S/THDs reported less difficulty negotiating with independent pharmacies to dispense antivirals. However, negotiations with larger chain or "big box" pharmacies did not always go smoothly. S/THDs specifically need assistance negotiating with big box and larger chain pharmacies for antiviral dispensing.

A best practice for S/THDs and LHDs is to arrange contracts and agreements before an emergency. Developing pre-existing agreements provides an opportunity to craft and delineate terms of collaboration instead of waiting until an emergency is declared and such negotiations potentially become compromised. To be effective, these agreements must either allow for considerable flexibility or attempt to reflect actual emergency conditions in which decisions will be made.

The Changing Legal Environment in Declared States of Emergency

During national crises that affect the public's health, such as the 2009 H1N1 pandemic, the federal government, every state, and many tribal governments, territories, and local governments declared either general states of "emergency," "disaster," or "public health emergency." These declarations change the legal landscape, authorizing public and private sectors to respond efficiently and leverage resources to facilitate an effective response.

10. Tracking and Reporting

Tracking and reporting inventory, distribution, and dispensing data were an integral part of antiviral management during the 2009 H1N1 pandemic. Tracking and reporting, for the purposes of this report, cover state tracking of antiviral medications from SNS/state supply to LHDs or other local community partners, state reporting to CDC or other federal agencies, LHD tracking of antiviral medication distributed to local community partners, LHDs reporting to S/THDs, and state and local tracking of commercial supply of antiviral medications in their communities.

State Perspective

It is essential for S/THDs to know the amount and location of antivirals to make allocation decisions, when to request more supplies, and issue dispensing guidance. Therefore, it is an important process for S/THDs to oversee tracking inventories of antivirals from the time they are received at state RSS sites; while they are in transit; when they are re-inventoried at alternative storage locations, distribution centers, and dispensing sites; and then dispensed to patients. The granularity of information collected, for whom it was collected, how it was collected, and tracking requirements for community partners all varied from state-to-state during the 2009 H1N1 pandemic.

Antiviral use was an important indicator of cases, disease burden, and the outbreak's progression. For allocation purposes, S/THDs needed to know where the demand was. Therefore, some states tracked to the county level, whereas others tracked to the end-user at dispensing sites.

S/THDs reported that data requests from the CDC changed multiple times throughout the response. States expressed concern regarding the variation in data requests. Often S/THDs were not able to provide the data requested and questioned the need for it. Given the ever-changing nature of an influenza pandemic, it is understandable that information needs may change, too. However, S/THDs reported challenges with meeting multiple, changing information requests from the CDC, state agencies, and other entities.

Therefore, having a standard set of data requirements prior to an emergency, which can be modified to fit the emergency if needed, would significantly decrease the burden on S/THDs while still actively responding to a public health emergency.

S/THDs used inventory and tracking systems, which varied from state to state, to monitor antiviral supplies. These systems included state-owned inventory management systems, CDC's RSS Inventory Tracking System (RITS), Medicaid systems and immunization registries (modified to meet H1N1 needs), and Excel spreadsheets. Each system had advantages and disadvantages. Some states preferred using in-house systems because they were familiar and adaptable. The benefits of using the Medicare/Medicaid system were that pharmacies could access it and it allowed them to charge Medicare for administrative fees rather than pass them on to patients. Also, inventory systems that were tied into geo-based systems, such as GIS, were very useful in helping states maintain supply chain visibility.

The CDC's Division of Strategic National Stockpile (DSNS) developed RITS for tracking and inventory management purposes. RITS is a web-based tool that DSNS maintains and is available to states and directly-funded cities for free. In some states, RITS was the primary tool for inventory tracking and management. Unfortunately, it did not function at a proper level to meet the S/THDs' needs. Some users were kicked out of the system due to infrequent use and some lost data. Some states using RITS had to hand count inventory and resort to using Excel spreadsheets to track inventory due to the system's inefficiencies. Because of the problems RITS had fully meeting the S/THDs' needs, many S/THDs bought inventory management systems from private firms. These systems were costly but necessary. Tracking also had to extend beyond RSS sites so S/THDs could maintain visibility on antiviral use, as well as for reporting purposes. LHDs and dispensing entities were often required to report back to S/THDs so that S/THDs could, in turn, comply with CDC reporting requirements. States that contracted

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Appendices

Appendix I: Acronyms

AAR	After-action report
ASTHO	Association of State and Territorial Health Officials
CDC	Centers for Disease Control and Prevention
CPA	Collaborative Practice Agreement
DEA	Drug Enforcement Agency
DHS	Department of Homeland Security
DSNS	CDC Division of Strategic National Stockpile
EMAC	Emergency Management Assistance Compact
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
EPDO	Emergency Prescription Drug Order
EUA	Emergency Use Authorization
FEMA	Federal Emergency Management Agency
FDA	U.S. Food and Drug Administration
FQHC	Federally Qualified Health Center
GSA	General Services Administration
HAN	Health Alert Network
HHS	U.S. Department of Health and Human Services
HIPAA	Health Insurance Portability and Accountability Act
ICS	Incident command structure
IRMS	Integrated Resource Management System
LHD	Local health department
LLIS	Lessons Learned Information Sharing
MACS	Multiagency Coordination Systems
MIMAL	Model Intrastate Mutual Aid Legislation
MOA	Memorandum of agreement
MOU	Memorandum of understanding
MSEHPA	Model State Emergency Health Powers Act
NACCHO	National Association of County and City Health Officials
NEA	National Emergencies Act
NPS	National Pharmaceutical Stockpile
PBMs	Pharmacy benefit managers
PHEP	Public Health Emergency Preparedness
PHER	Public Health Emergency Response
PHSA	Public Health Service Act
PODs	Points of distribution
RITS	RSS Inventory Tracking System
RSS	Receiving, staging, and storage
S/THD	State/territorial health department
SLE	Shelf-life extension
SNS	Strategic National Stockpile
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act
TAR	Technical Assistance Review
UEVHPA	Uniform Emergency Volunteer Health Practitioners Act
VHP	Volunteer health professional
VPA	Federal Volunteer Protection Act
WIC	Women, Infants, and Children