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Infection prevention in points of dispensing

Terri Rebmann, PhD, RN, CIC,[a] Bill Coll, BA, M PUB AFF,[b] and the 2009 APIC Emergency Preparedness Committee
St. Louis, Missouri, and Austin, Texas

Background: Community-based points of dispensing (POD) will be used during disasters to distribute mass quantities of anti-infective therapy/prophylaxis and/or vaccination to an entire community in a short period of time. Without proper planning, staff training, and implementation of infection prevention strategies, disease transmission is possible in PODs. The purpose of this paper is to outline infection prevention recommendations for PODs.

Methods: A literature review and Internet search were conducted in April 2009. A spreadsheet was created that delineated infection prevention issues in PODs that were identified by each source. Infection prevention recommendations were divided into themes/domains for simplification and clarity.

Results: Thirty-one articles, planning documents/reports, and Web-based training programs were identified and screened. Of these, 19 were deemed relevant: 8 were journals articles; and 11 were published reports, planning documents, and/or training programs. Infection prevention themes for PODs identified in the literature included (1) planning for infection prevention in PODs, (2) screening and triage of visitors, (3) using personal protective equipment, (4) implementing hand hygiene, (4) following food and water safety, (5) performing environmental decontamination, (6) communicating and training staff and visitors, and (7) having occupational health protocols.

Conclusion: Infection prevention in PODs is important to prevent communicable disease spread. This article can assist emergency managers in developing an infection prevention program for PODs.

Key Words: Point of dispensing; emergency management; infection prevention; infection control.

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Mass casualty events involving a biologic agent (ie, an infectious disease disaster), such as a bioterrorism attack, large-scale outbreak of an emerging infectious disease, or a pandemic, will require rapid identification and response to reduce morbidity and mortality related to the event. The 2009 swine influenza A (H1N1) outbreak illustrates that these events can occur rapidly and with little warning. Communities need to be prepared to respond quickly when such an event occurs, especially when the causative agent is a contagious disease, such as swine flu.

Institute of Biosecurity, Saint Louis University, School of Public Health, St. Louis, MO[a]; and Austin-Travis County Emergency Medical Services System, Austin, TX.[b]

Address correspondence to Terri Rebmann, PhD, RN, CIC, associate director for curricular affairs, Institute of Biosecurity, assistant professor, Division of Environmental and Occupational Health, Saint Louis University, School of Public Health, 3545 Lafayette Ave, Room 361, St. Louis, MO 63104. E-mail: rebmannt@slu.edu.

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One critical aspect of response to an infectious disease disaster is to implement pharmacologic interventions, including mass vaccination, treatment, or prophylaxis. Pharmacologic interventions must be administered in a short time frame to reduce morbidity and mortality. Time frames for intervention vary, depending on the disease involved, but usually range from 1 to 6 days.[1,2] For example, postexposure prophylaxis must be provided within 1 to 2 days following exposure to airborne *Yersinia pestis* or a person infected with pneumonic plague to prevent disease from occurring.[1] Smallpox vaccination needs to be administered within 4 to 5 days of exposure to reduce the risk of disease and death.[1] The Centers for Disease Control and Prevention and the Cities Readiness Initiative indicate that communities need to be able to administer prophylaxis and/or vaccination to their entire population within 48 hours.[3] Whereas time and efficiency in undertaking such large community distribution processes are important, ensuring worker and visitor safety during this process are also very important.

Dispensing mass quantities of anti-infective therapy/prophylaxis and/or vaccination to an entire community in a short period of time is a complex endeavor that requires extensive planning and practice. Mass distribution of prophylaxis or vaccination can be accomplished through a *push* or *pull* system. Push

systems are those in which medication is sent to community members through the Postal Service or another mechanism that does not require individuals to leave their homes or work settings.[2] *Pull* systems are those that require individuals to leave their homes or workplace to travel to community-based dispensing centers designed to administer/dispense prophylaxis or vaccination.[2] Most communities will likely use both *push* and *pull* systems to distribute anti-infective therapy/prophylaxis and/or vaccination following a disaster involving an infectious disease.[2] This article will only address *pull* systems.

Mass prophylaxis and/or vaccination *pull* systems consist of community-based points of dispensing (POD). PODs are often located in schools, community centers, or other large buildings in centralized areas that provide easy access to a large portion of the population.[4] Communities will likely need multiple PODs, especially in more densely populated areas. Although it is preferable to have only healthy individuals visit PODs to pick up medication and/or vaccination for themselves or their family, many community planning agencies assume that some ill individuals will arrive at the POD.[2,3,5-14] These ill individuals may be infected with the agent/disease involved in the mass casualty event (ie, bioterrorism attack, emerging infectious disease outbreak, or pandemic), or they may be ill with other contagious diseases. In addition, many PODs will be staffed with individuals who lack formal medical and/or infection prevention training because of the large number of people needed to run multiple PODs in a community.[4] Without proper POD planning, staff training, and implementation of infection prevention strategies, these factors can lead to a risk of infection transmission in PODs.

The purpose of this paper is to outline infection prevention recommendations for freestanding and drive-through PODs. This project was conducted by the authors in their role as members of the Association for Professionals in Infection Control and Epidemiology's (APIC) Emergency Preparedness Committee.

METHODS

A literature review was conducted in April 2009 using the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Healthstar, Psych Info, and Medline databases for years 1966 through 2009. The following terms were utilized as key word searches: infection control, infection prevention, point of dispensing, and dispensing/vaccination center. Only English language articles in peer-reviewed journals were utilized. An Internet search was also conducted in April 2009 using the same search terms as above to identify existing book chapters, reports from response agencies, published standards and guidelines, and other relevant materials related to PODs. Last, the snowballing technique was used to identify sources that were not found through the literature and Internet searches. Inclusion criteria included articles, planning documents, and published reports that addressed infection prevention issues in PODs.

A spreadsheet was created that delineated infection prevention issues in PODs that were identified by each source. Infection prevention recommendations were divided into themes/domains for simplification and clarity. The authors conducted the literature review and Internet search independent of one another and then collated all sources for the review process. Article review and data extraction were divided among the authors. The primary author reviewed approximately half of the other authors' sources as a quality control process to ensure consistency in data collection. Discrepancies and unclear areas were discussed until consensus was reached. Once all data were collated, the primary author categorized the findings into themes and developed the written recommendations. All authors reviewed the final themes and recommendations. After the manuscript outlining infection prevention recommendations for PODs was drafted and agreed on by the authors, the manuscript was reviewed by other members of the APIC Emergency Preparedness Committee.

RESULTS

Thirty-one articles, planning documents/reports, and Web-based training programs were identified and screened. Of the sources screened, 19 references were deemed relevant: 8 were journals articles; and 11 were published reports, planning documents, and/or training programs. Most POD planning documents and articles did not address infection prevention or did so in only a cursory manner. When such recommendations did exist, they varied widely by the source and often included incorrect terminology or inaccurate/unnecessary interventions. No single document or article identified all of the infection prevention issues that should be addressed by a POD. Infection prevention interventions that should be implemented in PODs are divided into themes for ease of explanation and planning. Community-based emergency managers can use this article as a planning tool for developing policies and procedures that will decrease the risk of infection transmission in PODs.

Infection prevention planning in PODs

It is important for community emergency managers to incorporate infection prevention interventions into POD operation.[10] Infection prevention strategies should be included in POD planning documents and incorporated into pre-event and/or just-in-time training