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## Leveraging COOP for Biological Incidents: Natural, Accidental or Bioterrorism

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The Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism December 2008 Report, warned that the "United States can expect a terrorist attack using nuclear or more likely, biological weapons before 2013." And while a number of steps have been taken to protect the United States (US) from bioterrorism, our population is equally at risk for natural infectious diseases for which we have little to no immunity. An example is the sporadic H5N1 clusters that have kept health organizations throughout the world on "alert" for the next pandemic, spawning investments of billions toward preparedness.

Likewise, SARS (Severe Acute Respiratory Syndrome) underscored the tremendous threat emerging infectious diseases can have on healthcare facilities when those institutions are not adequately prepared for such threats. For example, excessive absenteeism had crippling effects on the healthcare system and its ability to respond effectively to the SARS crisis. SARS resulted in over 800 deaths with significant social and economic disruption and healthcare providers were unprepared. For this reason the National Strategy for Homeland Security in 2007 recognized that naturally occurring in-

fectious disease presents a "significant and ongoing hazard" and has the potential for a catastrophic event.

The question for administrators is how to adequately prepare for these biological threats; how will the availability of resources impede the ability to develop an adequate plan; and what benefits can accrue by engagement in preparedness and response plan. A solution is to leverage existing preparedness, such that a single planning effort can address the multitude of biological threats.

### **Why Continuity of Operations Planning?**

Continuity of Operations Planning (COOP) has been at the forefront of pandemic preparedness and offers much guidance that can be leveraged against both natural and intentional biological incidents.<sup>1</sup> The key COOP elements are education, infection control and the ability to deliver essential services. Plan guidance has been written, infection control guidelines published, and numerous checklists developed for the healthcare system.<sup>2</sup> The prudent administrator can leverage the tools developed for pandemic COOP preparedness across all biological incidents to sustain operations throughout an infectious disease outbreak.

COOP is activated when the workforce is threatened by the emergence of a rare infectious disease in which the population has no immunity and when absenteeism increases beyond the norm. An additional consideration for activation is

if the outbreak is projected to be a prolonged event and the workforce must be conserved, such as for a pandemic event rather than a short-term infectious disease outbreak. It is this protracted type of event in which a well-developed plan, tested and exercised, will assist a healthcare facility to maintain essential services and continue to provide patient care. COOP is the cornerstone for biological event preparedness and response. Although the prospect of writing a plan is daunting, being proactive will minimize the impact a pandemic will have on staffing. This article will explore the key elements of COOP, address the issue of absenteeism and underscore "workforce safety" as the priority issue for healthcare providers in any biological incident.

### **Key Elements of COOP**

The emphasis on protecting and managing the workforce is the distinguishing characteristics of COOP for a biological event versus that of traditional COOP. For example, traditional COOP would include a plan for opening an alternative facility(s) within 12 hours and keep it open for at least 30 days. Also, relocating (or standing up) an entire computer operation within this location is another consideration in traditional continuity of operations plans. COOP for biological events are not concerned with either of these aforementioned aspects.

Employees must feel and believe the employer has prepared in their best interest and has taken all measures to protect them from infection. The best strategy to maximize this measure of protection

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is to include employees in the planning process, encouraging them to do the necessary research to identify best practices and empower them to enact both policy and personal protective equipment (PPE) measures to maximize infection control in the workplace.

In addition to infection control measures, other key elements of COOP are the planning team, hierarchical decision-making authority, identifying essential services, managing ill employees and communications. A tool to track such development is the Medical Offices & Clinics Pandemic Influenza Planning Checklist<sup>3</sup> available from the [www.pandemicflu.gov](http://www.pandemicflu.gov) website.

Additional planning documents are available online and target the medical office.<sup>4</sup> Two publications target infection control and move beyond traditional PPE use of facemasks and gloves and address physical barriers as well. OSHA's guidelines are outlined in "Guidance on Preparing Workplaces for an Influenza Pandemic<sup>5</sup>" and Part 2, Supplement 4 – Infection Control of the HHS Pandemic Influenza Plan.<sup>6</sup>

#### *The COOP Planning Team*

A first step in COOP planning is to establish a multi-disciplinary team that can consider all aspects of the practice from finance and decision-making to infection control and patient services. The planning team will vary depending on the size of the practice, whether it is a multi-specialty practice or is limited to a solo practitioner's office. At minimum, it should include the medical director, office (or finance) manager, nurse senior manager and other key management staff. This team can expand to include other allied specialties such as laboratorians, pharmacist, phlebotomists, information technology personnel, and don't forget--housekeeping. The latter will serve as a major additional key to infection control.

After a planning team is organized, COOP works to establish the lines of authority and succession in the event top decision makers are unable to work. Medical offices must consider how they will operate in the event that organization leadership is disrupted due to illness or death. This is much easier to do with large practices but much more a challenge in smaller practices. A strategy could very well be to partner with other small offices and pool limited resource personnel. COOP calls for three-deep for each essential function but that recommendation is not practical in a small office. Cross training of important duties will help ready staff for essential services.

#### *Essential Services*

The next major element of COOP is to identify essential services and critical job functions that must be continued throughout a biological event. Emergency care services will be in demand and especially, those that provide prophylaxis. A medical office may have staff whose role is to maintain a liaison with the regional public health office, researching the status and availability of prophylaxis such as vaccines, oseltamivir phosphate or Tamiflu. An additional critical task associated with this COOP element is to identify products or other services needed to support this essential service.

Patient management and telephone triage will be a major concern for the medical office. Many calls will be from the worried-well looking for reassurance that their symptoms are not life threatening. Employees will have to be trained to discourage office visits and maximize home care strategies. For example, in public health facilities during a biological event, routine clinic services such as travel immunizations or chronic disease control will be modified or deferred, but epidemiologic surveillance will be enhanced and staff rotated into this surveillance role to work more closely with

both hospitals and healthcare providers. Essential services are either fully staffed or modified, so that services are provided but not to the same extent required under normal operations. For example, services such as WIC (Women, Infant & Children) infant formula are identified as essential but modifiable and will continue to be delivered. Instead of clients visiting the WIC office, vouchers could be mailed and increased amounts of supplies are sent to enrollees to minimize the frequency of office visitations. Deferred duties (or services) are those that can be discontinued until the pandemic wanes.<sup>7</sup>

Essential services will be unique to each practice. The challenge will be to think through a biological event, such as the annual flu season and identify how it impacts daily office procedures...then double it!

#### *Office Infection Control*

Highly effective infection control measures should be implemented well before a biological event occurs. OSHA<sup>5</sup> and the HHS Supplement for Infection Control<sup>6</sup> have detailed pandemic infection control guidelines for both patient care rooms and public areas. For example, has patient-waiting rooms been structured to segregate the at-risk population from an infected-patient population? Have receptionists been trained to offer a mask to patients exhibiting symptoms? Are there hand sanitizer at counters, patient bathrooms, water fountains and signs to encourage visitors to "hand wash" frequently while attending to business in your practice?

Infection control measures include devices, PPE, written procedures and education. This educational component emphasizes proper hand hygiene, cough etiquette and social distancing and a work environment structured to encourage and reinforce such practices.

Earlier it was mentioned that physical barriers also serve as additional protec-

tive measures to protect employees. These measures include engineering controls such as drive-through service windows, plastic barriers at reception desks (sneeze barrier), and ventilation systems designed to remove contaminants from the climate control system. These ventilation "air scrubbing" systems are generally referred to as germicidal ultraviolet air disinfection systems and can be installed in either existing climate control systems or room portable units. But these devices and other "engineering" considerations should be considered as strategies for infection control that can supplement traditional methods.

### *Managing Ill Employees*

Managing ill staff during a biological event begins with employee-required education prior to an outbreak. This education targets individual infection control practices, crisis training, and facility infection control measures. Training includes the basics of biological events, emphasis on infection control practices for the office, facility infection control (and written standard operating procedures) and what to do if symptoms are suspected for self, family members or others in their sphere of interaction.

It is recommended that a biological event manager (employee health nurse) be assigned to maintain contact with employees if they become ill. The role of the employee health nurse is to complete an initial assessment of employees who report symptoms compatible with the etiologic agent, to determine that the absenteeism is due to the suspected agent and not other causes, and to track the health status of employees and their anticipated date of return to duty. This can include a follow-up assessment and accompanies one-on-one communication with the employee.

### *Communications*

Communications encompasses both internal (employees) and external (clients and vendors) and will be a critical task

throughout a biological event. It will become the responsibility of someone in the organization, such as the employee health nurse as described in the previous section, to maintain contact with furloughed employees.

Public Health's Health Alert Network (HAN) should be used to maintain medical communications with medical providers, flu clinics and hospitals. Medical offices will need an employee tasked to monitor these communications whether the distribution is via Fax or electronic (email). Regular communications with public health officials will be critical to obtain updates of an outbreak's local and regional spread. Communication lines with vendors have to be maintained so as to re-supply critical items that are needed to maintain essential services.

But these forms of communications are "soft" communications. What about maintaining computer systems where patient records are archived or maintained? If the office maintains hard copy patient records, this will eliminate their consideration in the COOP plan. How will the office maintain communications with employees out of work? What about notifications to employees about a changing biological event status and when the office will return to business as usual? Communication plans should be established with those employees charged with these duties to ensure the continuity of service delivery.

### **Absenteeism**

What differentiates COOP for pandemic flu and other biological events versus COOP for all other disaster response is worker attrition. This is the greatest challenge for the healthcare sector because the profession already has shortages of critical medical personnel. Efforts call for implementing strategies that minimize disease transmission by using aggressive infection control measures, education, and employee's awareness that the leadership is taking a course of

action to protect them.

During a biological event, employee absenteeism rates can be significant. For example, during a pandemic, rates are projected to range from 15 percent to 40 percent depending on the attack rate of a mutant virus that emerges to drive the next pandemic. These absenteeism rates are collective over the eight-week duration, single first wave and do not reflect those aggressive infection control practices described here and other continuity of operation strategies an office may implement. Much more realistic may be a 20 percent absenteeism rate at any single time and will include staff members absent from work to care for sick family members, recovering themselves or simply in need of psychological relief.

SARS taught us about healthcare worker employee behavior during a biological disaster. One recent survey of public health workers<sup>8</sup> found that 50% are unlikely to report to work. Another study<sup>9</sup> surveyed hospital workers and concluded that absenteeism has more to do with work-safety than financial incentives. The hospital study revealed that 50% stated they would report to work, 42% reported "maybe" and remarked that it depends on "how confident am I that the hospital can protect me." In other words, employees must feel that the organization has maximized the measures it can take to protect them from infection with the liberal use of PPE, supplies and other strategies of infection control described previously.

This message resonates well in the private sector as well. Wal-Mart<sup>10</sup> and Food Lion, for example, report "worker safety" as their number one pandemic planning issue and have taken measures to maximize infection control. The healthcare sector must adopt and practice this strategy as well.

Finally, it is essential to have a clear understanding of how personnel policies

will be enacted during a pandemic disaster. Policies should address absenteeism, compensation, leave, employment and employee support programs.

### **Conclusion**

Public health is charged with community leadership in directing and coordinating public health emergencies that threaten the life, health and safety of the citizens it serves. Clearly infectious disease outbreaks, regardless of source are such a threat. But as the nation has learned in recent years with the fires in California, hurricane Katrina and its aftermath, and the World Trade Center disaster, individuals and organizations must collaborate before a crisis occurs. This collaboration includes both those who respond and those who may become victims. Consequently, healthcare providers will be expected to maintain patient care activities under circumstances that will likely overwhelm their practice.

Under these conditions, healthcare providers must plan for providing care during chaotic circumstances. The potential challenges can be mitigated once we fully understand the threat and take the appropriate steps to moderate the consequences. COOP planning is the start to preparedness, and when complimented by training and mock exercises, will

place public health and medical on a path toward caring for those in what may be the worst of times. We use today to gain the technical expertise, build relationships and to be ready for a time we hope will never arrive. However, with the knowledge that our plan is written, practiced and tested we can rest with the comfort that indeed we are prepared.

### **References**

1. Federal Emergency Management Department, US Department of Homeland Security, Pandemic Influenza COOP Annex Template, [http://www.fema.gov/pdf/government/coop/influenza\\_coop\\_annex.pdf](http://www.fema.gov/pdf/government/coop/influenza_coop_annex.pdf) Accessed April 5, 2008.
2. SC Department of Health & Environmental Control, Public Health Region 6, Pandemic Influenza Continuity of Operations Plan Guide & Template, Adapted from the San Francisco Department of Health and Federal Preparedness Circular-65 [http://horrycounty.redcross.org/panflu/PICOOP\\_Guide.doc](http://horrycounty.redcross.org/panflu/PICOOP_Guide.doc). Accessed April 4, 2008.
3. Medical Offices & Clinics Pandemic Influenza Planning Checklist, <http://www.pandemicflu.gov/plan/medical.html>. Accessed April 20, 2009.
4. Planning Checklists: Healthcare Planning, <http://pandemicflu.gov/plan/checklists.html>. Accessed April 20, 2009
5. Occupational Safety & Health Administration, US Dept of Labor, Guidance on Preparing Workplaces for an Influenza Pandemic, OSHA 3327-02N 2007, [http://www.osha.gov/Publications/influenza\\_pandemic.html](http://www.osha.gov/Publications/influenza_pandemic.html). Accessed April 1, 2008
6. US Department of Health & Human Services, HHS Pandemic Influenza Plan Part 2: Supplement 4 Infection Control, <http://www.hhs.gov/pandemicflu/plan/sup4.html>. Accessed April 1, 2008.
7. Pandemic Influenza Continuity of Operations Plan, SC Department of Health and Environmental Control, Region 6 July 2007
8. Balicer, RD, Omer, SB, Barnett, DJ, Everly, Jr., GS. Local public health worker perceptions toward responding to an influenza pandemic. *BMC Public Health* 2006, 6:99. <http://www.biomedcentral.com/1471-2458/6/99> Accessed April 7, 2008
9. Irvin, C, Cindrich, L, Patterson, W, Ledbetter, A, Southall, A, Hospital Personnel Response during a Hypothetical Influenza Pandemic: Will They Come to Work? *Acad Emerg Med*, 14, 5 Page 513. May 2007
10. Koon, D, Tedder, LA, Wal-Mart/Food Lion Recovery Plans. Presented at the 2008 Hurricane/Emergency Management Workshop, SC Emergency Management Division, Myrtle Beach, March 27, 2008.