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GOOD STORY

The Colorado Department of Public Health and Environment's Pharmacy Health Alert Network

SUMMARY

The Colorado Department of Public Health and Environment's (CDPHE) Colorado Pharmacy Health Alert Network (COpharm) tracks the amount and location of any pharmaceutical product in the state's pharmacies and pharmaceutical wholesalers, distributors, and manufacturers. COpharm's capacity to monitor pharmaceutical supplies enhances the state's preparedness for both bioterrorism incidents and natural disease outbreaks.

BACKGROUND

In August 2004, a manufacturer's error resulted in a severe shortage of influenza vaccine in the United States. In response to this problem, CDPHE began building the state's response capacity for large-scale influenza outbreaks. Staff in CDPHE's Office of Emergency Preparedness and Response (OEPR) attempted to take an informal inventory of all antiviral medications in Colorado. They quickly discovered that they were unable to rapidly gather information from private sector pharmacies or pharmaceutical suppliers.

The inability to inventory all available pharmaceuticals in the state became further cause for concern when CDPHE contacted the Centers for Disease Control and Prevention (CDC) to inquire about the availability of national antiviral medication reserves in the Strategic National Stockpile (SNS). The CDC informed the officials that Colorado would need to demonstrate that all supplies of in-state antiviral medications had been exhausted before the CDC could authorize any release of medications from the SNS. CDPHE officials realized that they could only meet this requirement by conducting a complete inventory of the state's pharmaceuticals, which was impossible at the time. OEPR launched COpharm in September 2004 to address this need.

GOALS

COpharm enables OEPR officials to inventory the amounts and locations of pharmaceutical supplies located throughout Colorado within a few hours. During an infectious disease outbreak, this inventory will also enable CDPHE to document to the CDC when the state's own supplies of antiviral medications have been exhausted and additional medical supplies are needed.

DESCRIPTION

COpharm utilizes the following tools to rapidly inventory the state's pharmaceutical supplies:

- A comprehensive database of participating pharmaceutical facilities, including pharmacies, wholesalers, distributors, and manufacturers;

- A secure internet portal for transmission of alerts and inventory data; and
- A Geographic Information Systems (GIS) tool that plots the location of pharmaceutical supplies.

COpharm is regularly exercised to test alert procedures and participant readiness.

Database of Participating Pharmaceutical Facilities

A central database of Colorado's pharmacies and pharmaceutical wholesalers, distributors, and manufacturers allows the OEPR to rapidly compile inventory data as it is received from these facilities. OEPR staff enlisted facilities as participants in COpharm beginning in 2004.

OEPR staff entered participating facilities' information into a central database, listing the facility's name, location (including address and GPS coordinates), descriptive information, and contact information for the facility manager and/or other designated points of contact. Database entries for facilities or warehouses that are operated by larger distribution companies include contact information for the parent company as well.

Internet Portal

COpharm uses the existing Colorado Health Alert Network (CoHAN) portal to transmit alerts to facilities and to transmit inventory data from these facilities to CDPHE during a public health emergency. OEPR staff provided each cooperating organization with a pre-formatted inventory spreadsheet for submitting data, the Internet address for sending inventory information through the portal when requested, and a CoHAN ID and password to gain access.

Information is sent and received through each participant's private CoHAN account. COpharm requires that participants access their CoHAN account regularly to check for inventory requests and other health alerts. OEPR regularly disseminates new informational and educational materials through the CoHAN portal as an incentive for participants to log in frequently. The portal also provides participants with access to secure messaging and data exchange with CDPHE and other pharmacies.

GIS Tool

COpharm uses GIS technology to map the location of pharmaceuticals throughout the state. CDPHE personnel regularly update the location of each pharmacy, warehouse, and distribution site within a GIS database.

GIS database maps also identify different population densities by region. This feature allows CDPHE personnel to compare available pharmaceuticals with population density in a given region to anticipate gaps between pharmaceutical supplies and demand. The GIS database also includes population density by age group, enabling public health officials to assess demand for pediatric doses or the need to develop a strategy for dispensing pharmaceuticals to a large elderly population.

Procedures for Use

CDPHE emergency response plans direct OEPR staff to use COpharm at the start of a public health emergency to conduct a comprehensive inventory of medications, vaccines, or other critical pharmaceuticals located within the state. OEPR will then continue to use COpharm during the emergency to monitor the consumption of pharmaceuticals and to compare available supplies with demand.

At the declaration of a public health emergency, CDPHE sends out an inventory request to participating pharmacies and pharmaceutical companies through the CoHAN portal. This inventory request triggers COpharm participants' internal inventory procedures. Facilities use the pre-formatted inventory spreadsheet to supply their inventory data to CDPHE through the portal. OEPR compiles this incoming inventory data using the COpharm database of participating facilities.

The GIS tool uses this inventory data to plot the distribution of Colorado's pharmaceutical supplies. CDPHE uses these maps in conjunction with the GIS data on population densities and age demographics to determine where additional pharmaceuticals may be needed or whether officials may consider redistributing resources in an emergency.

System Drills

OEPR staff conducts regular drills to test COpharm's capabilities and the responsiveness of participating pharmaceutical facilities. In 2005, officials held a drill requiring rapid inventory of the anti-viral drug amantadine. OEPR sent a test alert and a request for inventory information to facilities via the CoHAN portal. The alert asked for detailed inventory information within 6 hours of message receipt. As OEPR received inventory data, staff compiled it using the COpharm database system. They then plotted the results with GIS maps and compared Colorado's population distribution with the locations and quantities of available amantadine.

The amantadine drill allowed staff to evaluate the system's effectiveness in the event of a rapid statewide inventory of a specific pharmaceutical. Exercise evaluators determined that the inventory effort was largely successful. Still, they identified several system participants that did not reply to the test alert or information request. Discussions with these facilities revealed insufficient monitoring of the CoHAN portal or poor procedures for distributing received alerts to facility managers.

REQUIREMENTS
Keys to Success
Participant Readiness
Regular system drills allow OEPR to assess participant readiness and to identify facilities to work with to improve performance. OEPR's strategy of posting pharmaceutical information and educational materials to the CoHAN Web site has helped to keep COpharm participants invested in the alert system.

Maximizing Participation
OEPR personnel are working toward increasing the number of participating pharmaceutical facilities in the state. This on-going enrollment effort will eventually yield more complete and accurate inventory data during a public health emergency and will enable public health officials to better address gaps between pharmaceutical supplies and needs.

Links
Colorado Department of Public Health and Environment, Office of Emergency Preparedness and Response
http://www.cdphe.state.co.us/epr

Colorado Department of Public Health and Environment, Geographic Information Systems
http://www.cdphe.state.co.us/GIS/index.html

CITATIONS

Hintzen-Schmidt, Yonette P. Former Strategic National Stockpile Coordinator, Colorado Department of Public Health and Environment, Emergency Preparedness and Response Section. Interview with *Lessons Learned Information Sharing*, 19 May 2005.

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