

Virtual Support Through Clinical Call Centers

Birdie D’Andrea

Experienced disease management companies use call centers to deliver virtual care to millions with chronic conditions. The same model could serve biodefense.

A chemical, biological, radiological, or nuclear attack that affects more than a narrowly confined area is likely to overload surrounding health-care facilities. The designated health-care workers may become too ill to do their jobs, and facilities could rapidly run out of treatment room, have to be quarantined, or become inaccessible because of environmental hazards. Multiple events, or even a single, catastrophic event, could make it difficult to transport victims to neighboring areas.

These worst case scenarios require careful planning to address surge and capacity concerns. Integral to these plans is virtual health-care delivery—the use of technology to extend surge capacity. A call-based model, for example, can provide a level of care and information to those who, confined to home or turned away from overcrowded facilities, might otherwise receive none.

The DM model

Over the past decade, disease management (DM) has become widely regarded as a successful virtual health-care model. DM vendors have set up call centers throughout the US, staffed with nurses and other health-care professionals who assess, educate, and advise more than three million people with chronic medical conditions about self-care measures to improve their health. The DM model has gained prominence with payers, employers, unions, and government agencies as a strategy to decrease medical expenditure by improving health.

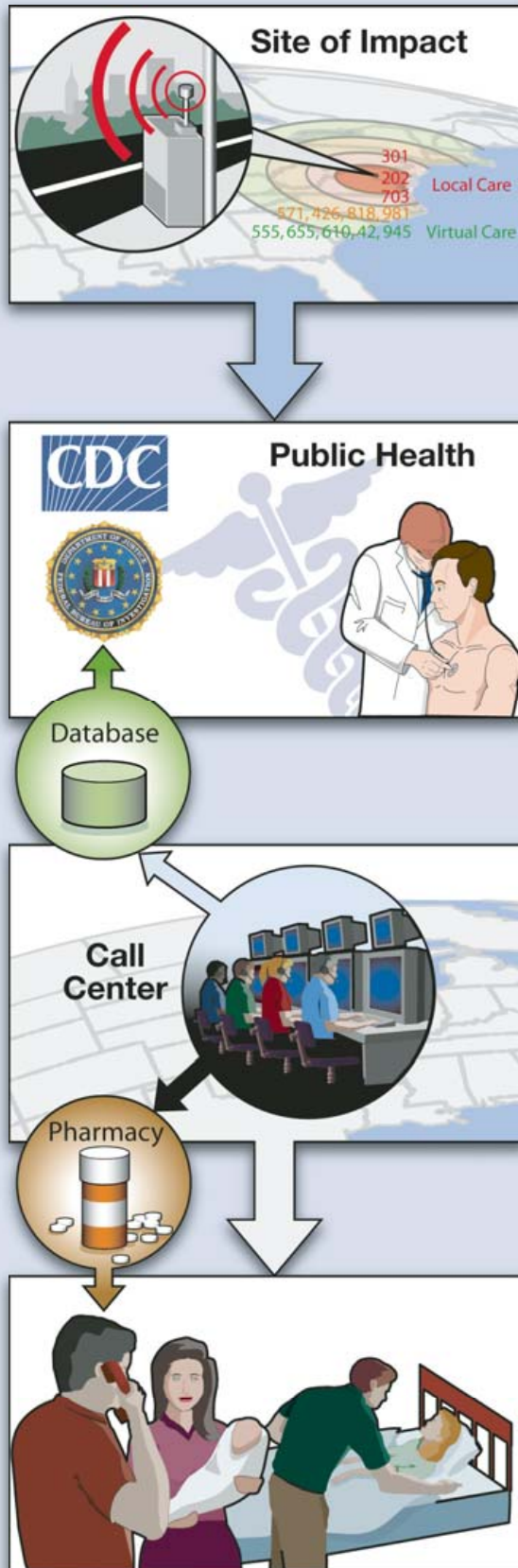
With some adaptations in process, people, and technology, the DM model could also provide virtual support to those affected by a chemical, biological, radiological, or nuclear attack. The multidisciplinary clinician team at the call centers use clearly

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- Existing disease management vendors have the technology and expertise to provide virtual support to the acutely ill, those at significant risk for disease, and the “worried well.”
- Data collected from both inbound and outbound calls could be captured for reporting and analysis, which could help characterize an attack.
- If household members cannot get critical medical supplies or medications, the call center contacts partner companies for fulfillment.
- Planning for the use of call centers needs to occur at a national level to optimize effectiveness.

How Call Centers Would Respond to an Attack

1. A detection system alerts authorities of a possible biological attack. Local and state public-health personnel, the CDC, and the FBI confer to evaluate the situation.
 2. Early indications suggest that a biological attack has occurred. The authorities in step 1 notify the person already designated to lead the command central team for the alert.
 3. The command central team notifies partners, such as behavioral health counselors and pharmacy benefit managers, to assume a ready state.
 4. The designated authorities update command central on critical epidemiological data as it becomes available. Data would include what caused the event, area of impact, and geographic area that needs call-center intervention.
 5. The call centers earmarked to intervene assume an operational ready state. Call-center clinicians prepare their desktops with previously prepared assessment tools, guidelines and algorithms specific to the suspected agent. IT personnel prepare the data warehouses to receive forthcoming information. Telephone support personnel prepare filters and automatic call distributors to manage volume and allow access from area codes targeted for intervention.
- Steps 4 and 5 may change as more information becomes available. Critical ongoing data includes information about the causative agent, area of impact, and possible alterations to treatment algorithms.
6. Authorities confirm that an attack has occurred and instruct command central to begin intervention.
 7. Authorities determine content and timing of public-broadcast messages, including, but not limited to, the availability of call-center clinicians and criteria for accessing the call center, such as residence in a specific geographical area or telephone with a particular area code.
 8. The call center receives inquiries from selected area codes and begins intervention.
 9. The command central team monitors operations metrics, such as call volume, capacity, and staffing, and adjusts accordingly. It also gathers and disseminates information for local, state, and federal agencies and relays instructions and updates to partners.
 10. The call center continues to operate until federal officials instruct the command central team to stop intervention.



defined, nationally recognized guidelines and are proficient in guiding patient interaction while meeting the call's objectives.

Major DM vendors have invested significantly in operational platforms to support large call volume and call monitoring, and use sophisticated yet user-friendly clinical information systems to aid work flow and support data collection. All clinicians have at their desktops all the essential resources and tools to support a call-based clinical program, including electronic health records, predictive dialing, and online access to a rich inventory of clinical information.

Because the environmental integrity of all systems is critical to a call-based program, DM vendors have well-defined disaster-recovery plans that ensure the center will remain operational. Moreover, DM companies typically employ an information technology (IT) support team both at a central headquarters and at local satellite call centers dispersed in regions throughout the US.

If an attack occurs, a DM call center in an area that the attack did not directly affect could use inbound and outbound call capabilities to provide information and support to areas that require increased clinician care. Thus, a call center in Chicago could provide telephone services to people in the mid-Atlantic region if that area were attacked. Filters (described later) would ensure that lines do not become overloaded.

From DM to attack response

The DM call centers could supply the core support, but additional people, process, and technology would be required to adapt the infrastructure for attack response. As part of response planning at the national level, federal officials would select call centers to serve as virtual responders in the event of an attack. As the sidebar "How Call Centers Would Respond to an Attack" shows, the Federal Bureau of Investigation (FBI) in cooperation with the Centers for Disease Control and Prevention (CDC) and public-health officials would authorize a *command central* team comprising a chief operations officer from one or more designated call centers, public-health clinicians, and appropriate federal agency officials. During the response, command central team representatives would be at, or close to, the participating call centers.

The command central team would have the authority and accountability to enact, monitor, and direct the DM-based virtual response and would be in frequent contact with appropriate federal agencies, such as the FBI and CDC.

The core of support would come from the DM program's existing call centers, augmented with partners such as

- behavioral health counselors, who would offer grief support;
- designated pharmacy benefit managers, who would fulfill pharmaceutical mail orders;
- designated medical supply companies, which would furnish durable medical equipment; and
- disaster relief agencies, which would provide information and triage support.

The adapted model would have three main objectives: minimize mortality and morbidity, mitigate panic and despair, and provide critical information to health and law authorities.

Minimize mortality and morbidity

Participating call centers would be equipped with nationally recognized, consensus-based clinical guidelines and treatment algorithms that cover the spectrum of possible terrorist agents (anthrax, small pox, plague, and so on). In conjunction with the CDC, public-health officials would determine the geographic area best served by call-based support and direct the call centers on targeted area codes to accept inbound calls, conduct an outbound call campaign, or both. The call centers' clinicians would use algorithms to assess disease risk and severity in a particular household with that area code.

The risk score would determine the specific guidelines for household members. Guidelines could include instructions to prevent cross-contamination, self-treatment, and triage (if available). If the nature of the attack prohibits household members from leaving their homes to obtain critical medical supplies or medications, the clinical staff would engage the pharmacy benefit manager or durable medical equipment partner for fulfillment. The call center would operate 24 hours a day, seven days a week.

Mitigate panic and despair

A catastrophic event with or without contagion will result in a panicked, desperate population, and marshal law may be necessary to prevent mass chaos. Areas with high mortality and morbidity will require emotional support in addition to clinical intervention. As part of the clinician team at the call centers, behavioral health

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counselors could provide grief counseling to households and support any team members exposed to high levels of stress and bereavement.

Provide critical information

Local, state, and federal authorities, including the CDC, will need ongoing data for assessment and decision-making. Data collected from both inbound and outbound calls could be captured for reporting and analysis. Each call center would have a designated leadership team responsible for analyzing and distributing the data. Planning for such an event would include a

decision tree of roles and responsibilities in disseminating information at the local, regional, state, and federal levels.

Realizing the vision

Although the infrastructure for virtual call-based support exists, the people, process and technology require further development and planning for call centers to become a viable biodefense strategy.

Training

Successful implementation of the model requires that all participants of the virtual response team, command central leaders, call center staff, and partnering pharmacy and medical equipment suppliers be well versed in their roles, responsibilities, and the emergency operations procedures designed specifically for an attack.

Specific training needs for the call center clinical staff will need to cover three main areas, described below.

Impact of terrorist attack. An overview of the behaviors and logistical impact an event could have on individuals and a community at large will prepare call center staff for possible worst case scenarios before an event occurs. This rigorous preparation will help them maintain focus and be effective despite the devastation they might hear from callers, who are likely to report real and rumored interruptions in electricity and water, shortages of food and medical supplies, and possibly even looting of pharmacies and grocery stores.

Spectrum of possible agents. Of utmost importance are the pathophysiology, treatment guidelines, and algorithms for all the agents that could be used in a terrorist attack. Clinicians will have to learn a host of nontraditional assessments, such as "Do you have any pets? If so, please describe their behavior," or "Have all family members performed a head-to-toe body check for rashes or sores?"

Extreme emotions. Call center staff will have to deal with high levels of stress, grief, and bereavement. What does a clinician say to a caller who is screaming, "Both my children have red spots in their mouths and sores on their lips, but we aren't allowed to leave the house! They need a doctor now

or they will die!”? And how do clinicians keep their own despair and worry in check?

An important part of training is to repeatedly test strategies to identify gaps and omissions and to build a sense of confidence through competency. Mock simulation involving all partners is critical in assessing the effectiveness of people, systems, and process and in identifying and resolving potential problems. A formal annual review of all three of these components will ensure that plans remain in a ready state.

All individuals must agree on this profoundly serious task.

Technology enhancements

The technology must have the bandwidth to support a large call volume. Once the availability of call-center services is made public, a deluge of calls from the “worried well” could tie up resources that should be going to support those who are supposed to receive intervention. The call center must be equipped to allow selective inbound calling (by area code) and route other calls

to a lower level of service such as interactive voice response or prerecorded instructions. It will be imperative to provide prompt live interaction with the call-center staff to help mitigate panic in those that the event has directly affected. Provisions for filtering calls must also address wireless phones with area codes that differ from the local land lines. Clearly, this will require close cooperation among communications carriers.

The infrastructure to support a virtual response to a chemical, biological, radiological, or nuclear event beyond a confined, local area would take but a short time to put in operation. Existing DM vendors have the technology and expertise to provide virtual support to acutely ill individuals, those at significant risk for disease, and the worried well.

Perhaps the greatest challenge is how to coordinate call-based support with the nation’s overarching biodefense strategy. Such coordination would mean mapping call centers to cover high-risk targeted areas, having a contingency plan

if multiple regions are attacked, and working toward formal partnerships with suppliers to fulfill the need for medications and durable medical equipment. All must be planned in unison with other response strategies to ensure a coordinated effort that avoids duplication and disorganization. This challenge is not insurmountable, even in the short term. And as this issue shows, time is of the essence. Call centers offer significant potential aid in attack response. It would be prudent to add that potential to our nation’s biodefense efforts before the inevitable occurs. ❖

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