

RESPONDING TO URGENT CASE REPORTS: TESTING THE LOS ANGELES COUNTY DISEASE REPORTING SYSTEM

Since the 9/11 event and subsequent anthrax attacks, strengthening the ability of Local Public Health Agencies (LPHAs) to detect and respond to bioterrorism as well as natural disease outbreaks has become a national priority. In response to this priority, the Centers for Disease Control and Prevention (CDC) issued guidance that clarified LPHA responsibilities for receiving and responding to urgent disease case reports [1]. This guidance detailed four primary recommendations: 1) a single, well-publicized telephone number to receive urgent case reports; 2) a phone triage system to process urgent case reports; 3) capabilities to receive urgent case reports 24 hours a day, 7 days a week and 4) a trained public health (PH) professional to respond within 30 minutes of receiving the report. Lacking from this guidance was the provision of tools or methods that LPHAs could use to evaluate and test their disease reporting system to identify areas that were working well and areas that needed improvement.

RAND Corporation developed a set of methods that could be used by LPHAs to evaluate their ability to respond to urgent case reports and assess their compliance with CDC recommendations. A pilot study using these methods was conducted by RAND in 2004 using several LPHAs across the country as test subjects. The study methods and results were published in 2005 [2]. Accompanying the report was a technical manual that LPHAs could use to perform similar evaluations of their own disease reporting systems. Using this manual as a guide, an evaluation of the Los Angeles County (LAC) Disease Reporting System was performed in early-2006.

BACKGROUND

Los Angeles County maintains a disease reporting system capable of receiving reports 24 hours a day, 7 days a week via an 888 toll-free disease reporting hotline (Figure 1). In addition to the hotline, urgent disease reports can also be called in directly to Acute Communicable Disease Control Program (ACDC) or Immunization Program (IP).

Calls received through the 888 toll-free number during normal business hours—Monday to Friday, 8am to 5pm—go directly to the LAC Department of Public Health Morbidity Unit. If a caller is requesting information or assistance related to infectious disease the call is transferred to ACDC. Calls are then triaged based on whether the caller is a healthcare provider and the exact nature of the call.

All calls received after-hours—Monday to Friday, 5 p.m. to 8 a.m., weekends, and holidays—are forwarded directly to the County Operator (serves as the answering service for *all* county departments). Healthcare providers with questions related to infectious disease are transferred to the Public Health physician on call (aka Administrator On Duty [AOD]). Public callers, however, are provided with requested information, but not typically transferred to the AOD.

METHODS

The RAND technical manual organizes the evaluation of a disease reporting system into four levels. The Level 1 test is designed to only test how quickly a response to an urgent disease report is received. Subsequent testing levels build on this basic test by evaluating other, more complex aspects of a disease reporting system.

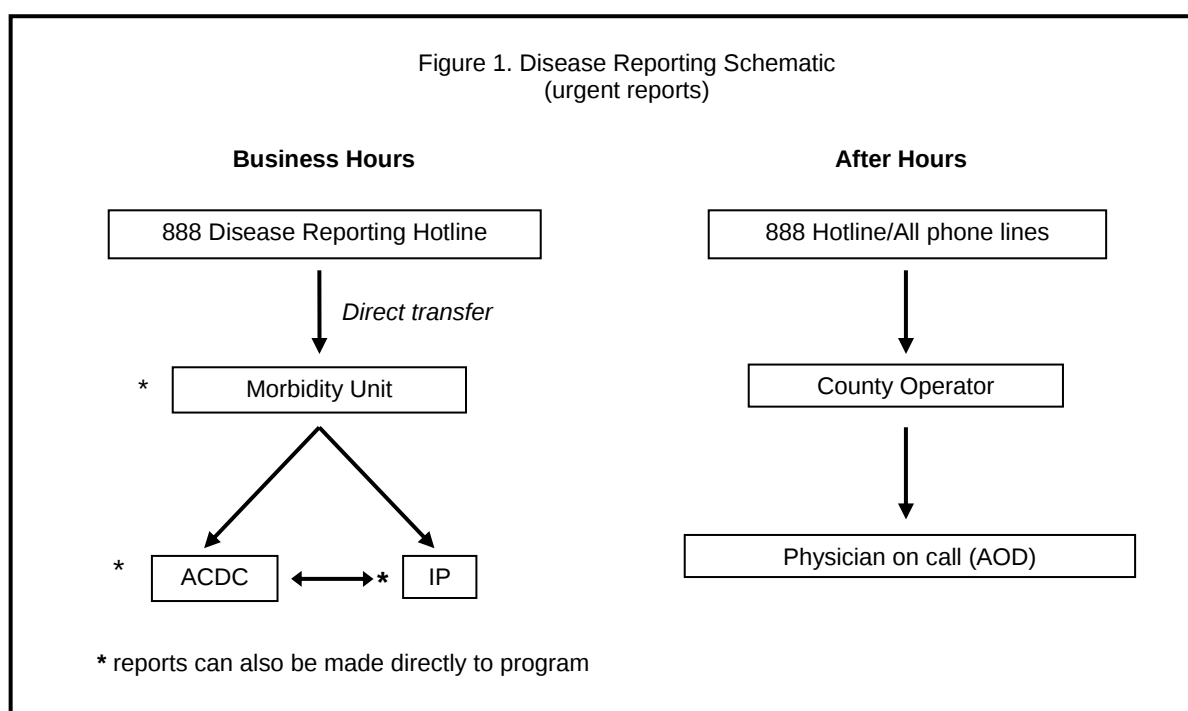
A Level 1 test for LAC was planned for April 2006. Test callers were selected from a Public Health program unrelated to the county disease reporting system. Callers were required to attend a training session that gave an overview of the RAND study, explained the design of the test being conducted in LAC and provided specific training on how to perform test calls. This training included an instructional session as well as an interactive one. Once completed, callers signed up to perform between one to three test calls during the test month.

Each call process consisted of three phases: 1) initiating a call, 2) reaching an action officer¹ (AO) and 3) debriefing. A call was initiated when a test caller phoned the disease reporting system, used a lead-in (a short message designed to move the call to an AO) and asked to speak to an AO. The caller would either be transferred directly to the AO (a warm transfer) or be asked to leave a message for the AO (callback). Once the caller reached an AO and confirmed that the person was responsible for handling urgent disease case reports, the AO was “debriefed” (i.e., informed that the call was only a test and that no further action was required).

Test callers received a script to follow for each call initiation that had them pose as a healthcare worker trying to get information regarding a potential case of infectious disease. This disguise prevented the person receiving the call from knowing immediately that the call was a test. During the call, each caller would complete a worksheet to keep track of specific call details such as the exact time the call was initiated, how long the caller was on hold, if the caller reached an AO, whether they had a warm transfer or a callback and how long the entire call took from start to finish. Callers were also encouraged to make notes on anything else of interest that happened during the call.

Information collected during the test calls was used to measure several outcomes—if contact with an AO was made within 30 minutes of call initiation (where contact was treated as a yes/no variable); the time from call initiation to contact with an AO; and the percent of calls with warm transfers as opposed to callbacks.

The test of the disease reporting system was announced to physician staff, but the exact schedule of test calls was kept secret. Dates and times of test calls were varied throughout the month.



RESULTS

During the month of April 2006, a total of ten test calls were made to the disease reporting system. Contact with an AO was made within 30 minutes for eight calls (Table 1), while two calls yielded no contact. Response times for successful calls ranged from 4 to 15 minutes with a mean of 8.25 minutes

¹ For purposes of this test, an Action Officer (AO) is defined as a Public Health professional responsible for responding to public health emergencies at the time of the test call.

from initiating the phone call to reaching an AO. Of the eight successful calls, seven (88%) were warm transfers.

Two calls were not able to connect with an AO within the 30 minutes recommended by CDC. In the first call, the caller was transferred to an AO's voicemail instead of being transferred to an alternate AO who was available to speak with the person immediately. The voice outgoing message did, however, leave an alternate number to use in the case of an emergency. The test caller used this number, insisted on speaking with someone and eventually reached an AO within 30 minutes. The initial AO was out of the office for the entire day, although they did return the call the next business day.

The second call was made to the 888 toll-free disease reporting hotline at the end of the business day on a Friday. The phone rang numerous times without being answered and eventually went to a recorded message that asked the caller to "remain on the line for the next available agent". After remaining on hold for 15 minutes, the test caller ended the call. The caller made two additional attempts and was on hold for approximately eight minutes each time. A live person was never reached.

Table 1. Successful Call Line List							
Call #	Type of Call	Time of Call	Out-come	Time on hold			Total Time to reach AO
				County Operator	Morbidity Unit	ACDC/IP	
1	After Hrs	Early Morning	WT	7 min	----	----	9 min
2	Business Hrs	Afternoon	WT	----	0 min	6 min	10 min
3	After Hrs	Late Evening	WT	2 min	----	----	4 min
4	Business Hrs	Afternoon	WT	----	0 min	5 sec	4 min
5	After Hrs	Afternoon	WT	3 min	----	----	5 min
6	After Hrs	Early Evening	CB	6 min	----	----	13 min
7	Business Hrs	Late Morning	WT	----	----	3 min	15 min
8	Business Hrs	Afternoon	WT	----	0 min	4 min	6 min
WT=Warm Transfer; CB=Callback							

Improvements: At the end of the test period, call transfer protocols were reviewed with ACDC front office staff. Protocols were developed such that healthcare providers calling about a specific patient would not be forced to leave a message on voicemail, but would be transferred to a live person for assistance. In addition, all staff were encouraged to leave an alternate number on their voicemail so that in an emergency situation, callers have another option for reaching a live person.

Telephone services were contacted and asked to ensure that calls were being appropriately forwarded to the county operator at the conclusion of business hours. It was also clarified that staff must be available to answer phones in all county departments through 5pm on weekdays as the automatic transfer of phone calls to county operator does not occur until 5pm precisely.

DISCUSSION

The test of the LAC disease reporting system showed that the current system works very well. The county already had a system set up to receive reports 24 hours a day, 7 days a week and a toll-free hotline specific for receiving urgent disease case reports. While more than one number for disease reporting does exist, the 888 toll-free number has been well-publicized (e.g., rolodex inserts, phone stickers, pens, etc) by the county and is the number public callers and healthcare providers are given when asked where they can report cases of disease.

Most test calls reached an AO within 15 minutes; well under the 30 minute standard recommended by the CDC. The phone triage system functioned smoothly with most calls being transferred directly to an AO.

Test callers reported back that both Morbidity Unit and ACDC staff were pleasant and professional on the phone. While there were a few problems with the phone numbers, they were resolved quickly with minimal disruption.

Additional testing of the disease reporting system will be conducted over the next one to two years, with each subsequent test increasing in difficulty until the most comprehensive and complex test has been performed. Subsequently, tests varying in difficulty and scope will be conducted annually for quality assurance purposes.

REFERENCES

1. CDC. Improving surveillance infrastructure for terrorism detection: the 8-cities project resource materials. Available at: www.cdc.gov/epo/dphsi/8city.htm.
2. Dausey DJ, Lurie N, Diamond A. Public health response to urgent case reports. *Health Affairs* 2005; W5:412-419.