Foodborne Illness Investigations: Working to Contain Outbreaks

Roshan Reporter, MD, MPH
Marifi J. Pulido, PhD, MPH

Every year, approximately 1 in 6 Americans get sick due to a foodborne disease, according to the Centers for Disease Control and Prevention (CDC). In Los Angeles County, that translates to approximately 1.5 million people. Foodborne outbreaks are caused by a variety of bacterial, viral, and parasitic pathogens, as well as toxic substances. To be considered a foodborne outbreak, both the state of California and the CDC require the occurrence of two or more cases of a similar illness resulting from the ingestion of a common food. Many of the pathogens that cause foodborne illness are reportable to the Los Angeles County Department of Public Health, Acute Communicable Disease Control Program.

Laboratory Testing
A key component in the reporting of these pathogens is their identification in the laboratory. Physicians who suspect a patient to be infected with an enteric pathogen may collect a stool sample and send it for laboratory testing. If a reportable pathogen is identified, the lab and/or the physician (preferably both) should notify the LA County Department of Public Health, Acute Communicable Disease Control Program. The laboratory should also send the selected isolates or broth to the Public Health Laboratory for confirmation, serotyping, and pulsed-field gel electrophoresis (PFGE) testing, also referred to as “fingerprinting.” The results of the PFGE tests are the key to identifying local and national outbreaks.

Also crucial to identifying outbreaks is PulseNet. This computerized network of state, local, and federal laboratories use PFGE to identify outbreak strains of bacteria. Each bacteria isolate has a genetic pattern, or “fingerprint.” These patterns are uploaded to a CDC database and compared to other patterns. If there is a higher-than-usual number of bacteria with the same pattern during a given time period, a cluster investigation is initiated. The CDC initiates and leads

Reporting Foodborne Illnesses and Outbreaks
If you believe your patient became ill from food or you would like to report an outbreak that you think is foodborne, please file a report with the appropriate public health department.

Los Angeles County Department of Public Health
To report a food establishment in Los Angeles County (excluding Long Beach and Pasadena):
• Call the Morbidity Unit at (213) 240-7821, (Mon-Fri, 8 am to 5 pm) or (213) 240 7941 (evenings and weekends), or

Pasadena Public Health Department
To report a food establishment in Pasadena, call (626) 744-6004.

Long Beach Health Department
To report a food establishment in Long Beach, call (562) 570-4301 or (562) 570-4302.
the investigation when cases occur in different states. This involves requesting data routinely collected on individual cases by state and local health departments, requesting further interviews to generate hypotheses, or conducting a case-control study to attempt to implicate a source for the outbreak.

**National Outbreaks**

In 2012, Los Angeles County was involved in several national cluster investigations. Three major investigations are described below.

**Salmonella Braenderup/Worthington**

This cluster investigation implicated mangoes as the contaminated food item. Of the 143 cases, 111 lived in California, with LA County having the highest case count (12 cases). Public Health staff interviewed the LA County cases to obtain more detailed food and exposure history. One case was infected with both *Salmonella* serotypes, which prompted the CDC to take a closer look at S. Worthington infections. The CDC later concluded that S. Worthington cases occurring around the same time were part of the same outbreak caused by the consumption of contaminated mangoes.

The source of the contaminated mangoes was found to be a mango supplier based in Sinaloa, Mexico. The Food and Drug Administration (FDA) placed an import alert on that mango supplier. Consequently, evidence that mangoes from this supplier are not contaminated with *Salmonella* is required before they are allowed to enter the United States. More detailed information on the national investigation can be found at [www.cdc.gov/salmonella/braenderup-08-12/index.html](http://www.cdc.gov/salmonella/braenderup-08-12/index.html).

**Salmonella Bredeney**

Twenty states were involved in this cluster investigation. Two persons in LA County were infected with S. Bredeney, which had the same PFGE pattern as a cluster being investigated by the CDC (42 cases). When Public Health staff interviewed the mother of the first LA County case, she reported that her child had eaten peanut butter from Trader Joe’s, which was consistent with what many other cases reported. However, the LA County case ate only Valencia peanut butter with Flax Seeds, whereas the majority of the cases who ate Trader Joe’s peanut butter reported eating Creamy Salted Valencia made with Sea Salt. This opened up the possibility of more than just the one type of peanut butter from the same processing plant being contaminated in this outbreak.

Early in the national investigation, there was a recall of Trader Joe’s peanut butter. As the investigation progressed, an extensive recall of many products from the manufacturer was issued. In late November, the FDA shut down the manufacturer indefinitely. More detailed information on the national investigation can be found at [www.cdc.gov/salmonella/bredeney-09-12/index.html](http://www.cdc.gov/salmonella/bredeney-09-12/index.html).

**Listeria monocytogenes**

During this investigation, one LA County case, a pregnant woman, was found to be related to this national cluster (22 cases). A direct result of her infection was the premature birth of her child, who had multiple complications and ultimately passed away. Public Health staff had the difficult task of interviewing the patient while her baby was in the NICU. Identifying the source of infection for this outbreak was challenging. Since *Listeria* has a long incubation period (3 to 70 days), 6 cases are asked to remember what food items they ate more than a month prior to the onset of illness. Further complicating the investigation, cases reported eating a variety of cheese brands purchased from different locations. Investigators were eventually able to identify a ricotta salata cheese imported from Italy as the source of the outbreak. More detailed information on the national investigation can be found at [www.cdc.gov/listeria/outbreaks/cheese-09-12/index.html](http://www.cdc.gov/listeria/outbreaks/cheese-09-12/index.html).

**Physicians Are Crucial to Outbreak Investigations**

These investigations emphasize the importance of physicians diagnosing enteric diseases by collecting stool samples to determine illness etiology and reporting cases to Public Health. In addition, laboratories should send the isolate or broth to the Public Health Laboratory in a timely manner. In each of these investigations, the cases seemed to be sporadic, unrelated instances of disease. Without routine reporting and lab testing, these cases may never have been connected to other cases occurring across the United States. It is this ability to observe and quantify the bigger picture that has enabled Public Health officials to identify contaminated food products, send out recall notices, and prevent additional illnesses.

Roshan Reporter, MD, MPH, is a medical epidemiologist, and Marifi J. Pulido, PhD, MPH, is an epidemiologist, Acute Communicable Disease Control, Los Angeles County Department of Public Health.

**REFERENCES**


Strengthening Breastfeeding Support in California

Helen O’Connor, MSPH, MA
Heather Readhead, MD, MPH

The Joint Commission (TJC) and the California Legislature both have new requirements for hospitals that support exclusive breastfeeding for most infants. As a result, providers who care for infants, pregnant and/or postpartum women in the hospital will need to implement new policies and procedures that will affect patient care prior to hospital discharge. Hospital providers, in addition to outpatient prenatal and primary care providers, will need to educate, encourage, and support new mothers to breastfeed their infants exclusively to meet these new requirements and attain the desired health outcomes.

Although the new regulations apply only to hospitals, outpatient providers can ensure that patients make an informed choice about where to deliver, work collaboratively with local hospitals to inform patients of what to expect in the hospital, and provide adequate postpartum support to optimize chances of successful, long-term breastfeeding.

**New Maternity Hospital Regulations in 2014**

On January 1, 2014, new TJC regulations will go into effect for all accredited maternity hospitals with at least 1,100 deliveries per year (www.jointcommission.org/perinatal_care/). These hospitals will be required to submit the previously voluntary Perinatal Care Core Measure Set, which includes two measures related to exclusive breastfeeding (see Table 1 and Figure 1). These measures will reflect how well hospitals support exclusive breastfeeding and achievement of a mother’s choice to exclusively breastfeed her infant.

Although TJC did not set a national benchmark, the expectation is that a hospital’s quality improvement efforts will increase breastfeeding rates over time.

In addition, as of January 1, 2014, California law (SB 502) will require all maternity hospitals in the state to have an infant feeding policy that promotes exclusive breastfeeding (see Figure 2). A hospital’s policy must align with the Baby-Friendly Hospital Initiative™ (www.babyfriendlyusa.org) or the California Department of Public Health Model Hospital Policy Recommendations (www.cdph.ca.gov/Healthinfo/healthyliving/childfamily/Pages/MainPageofBreastfeedingToolkit.aspx).

**Achieving the Baby-Friendly Hospital Designation**

Implementation of evidence-based hospital policies regarding optimal infant nutrition can increase breastfeeding rates at hospital discharge.

The Baby-Friendly Hospital Initiative outlines the Ten Steps to Successful Breastfeeding necessary to achieve designation (see Figure 3). While Step 1 alone ensures that hospitals are in compliance with state law, adopting all 10 steps supports the new requirements of The Joint Commission.

**Table 1. Number of Maternity Hospitals and Births, Los Angeles County**

<table>
<thead>
<tr>
<th>Los Angeles County</th>
<th># of Hospitals</th>
<th># of Births</th>
<th>% of Births</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals with 1,100+ births</td>
<td>43</td>
<td>125,355</td>
<td>92.0</td>
</tr>
<tr>
<td>Hospitals with fewer than 1,100 births</td>
<td>17</td>
<td>9,984</td>
<td>7.3</td>
</tr>
<tr>
<td>Out-of-hospital or out-of-state births</td>
<td>976</td>
<td>136,315</td>
<td>0.7</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on California resident births
Data source: 2011 Birth Statistical Master File

Several hospitals in Los Angeles County already comply with SB 502 and are committed to making breastfeeding the norm. Of the 58 maternity hospitals in LA County, 13 have achieved the Baby-Friendly Hospital designation. With support from the Centers for Disease Control and Prevention (CDC), the Los Angeles County Department of Public Health is currently offering technical assistance to an additional 16 hospitals working toward this designation. By providing significant financial assistance, First 5 LA has also facilitated the pathway to designation for 21 hospitals with the lowest breastfeeding rates in LA County.

The list of the hospitals in LA County that have already achieved or are pursuing the Baby-Friendly designation is regularly updated online at www.breastfeedla.org/healthcare/baby-friendly-hospitals.

**One Hospital’s Experience**

Prior to adopting the Ten Steps to Successful Breastfeeding at East LA Doctors Hospital, no mother who delivered at the facility was exclusively breastfeeding her infant at discharge. After pursuing the Baby-Friendly Hospital designation in June 2010, and with a hospital policy now in place, approximately 40% of the mothers are exclusively breastfeeding their infants. East LA Doctors Hospital expects to achieve Baby-Friendly designation this year.

If your hospital or outpatient practice would like more information on how to support breastfeeding or the Baby-Friendly Hospital Initiative, contact Breastfeed LA (info@breastfeedla.org) and/or visit the LA County Department of Public Health’s Maternal, Child, and Adolescent Health Programs website (www.publichealth.lacounty.gov/mch/CAH/Breastfeeding%20Promotion.htm).

Helen O’Connor, MSPH, MA, is a breastfeeding policy analyst, Maternal, Child, and Adolescent Health Programs, and Heather Readhead, MD, MPH, is clinical preventive services manager, Division of Chronic Diseases and Injury Prevention, Los Angeles County Department of Public Health.
Figure 1. The Joint Commission’s Perinatal Care Core Measure Set

ALL hospitals with 1,100 or more deliveries annually will be required to submit the Perinatal Care Core Measure Set to TJC for accreditation. The Perinatal Care Core Measure Set includes...

- PC-01 Elective delivery
- PC-02 Cesarean section
- PC-03 Antenatal steroids
- PC-04 Health care associated bloodstream infections in newborns
- PC-05 Exclusive breast milk feeding
- PC-05a Exclusive breast milk feeding considering mother’s choice

Source: www.jointcommission.org/core_measure_sets.aspx

Figure 2. California SB 502 Hospital Infant Feeding Policy

- All general acute care hospitals and special hospitals, as defined in subdivisions (a) and (f) of section 1250, will have an infant feeding policy that promotes breastfeeding, utilizing guidance provided by the Baby-Friendly Hospital Initiative or the State Department of Public Health Model Hospital Policy Recommendations.

- The infant-feeding policy shall apply to all infants in a perinatal unit.

- The infant-feeding policy shall be routinely communicated to perinatal unit staff.

- Policy shall be clearly posted in the perinatal unit or on the hospital or health system Internet website.

- This bill will become operative January 1, 2014.

Source: www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0501-0550/sb_502_bill_20111006_chaptered.html

Figure 3. Baby-Friendly Hospital Initiative: Ten Steps to Successful Breastfeeding

1. Have a written policy that is communicated to all health care staff.*
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within 1 hour of birth.
5. Show mothers how to breastfeed and how to maintain lactation, even if they are separated from their infants.
6. Practice exclusive breastfeeding. Give infants no food or drink other than breast milk, unless medically indicated.
7. Practice “rooming in”—allowing mothers and infants to remain together 24 hours a day.
8. Encourage unrestricted breastfeeding. Allow infant to feed at the earliest sign of hunger.
9. Give no pacifiers or artificial nipples to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital.

* For samples of model policies, please contact coauthor Helen O’Connor at hocconnor@ph.lacounty.gov
Tobacco Cessation
New Program Offers Incentive to Quit Smoking

Patients enrolled in Medi-Cal smoke at high rates and commonly develop chronic diseases exacerbated by smoking, such as diabetes and heart disease. The Medi-Cal Incentives to Quit Smoking Project, a project of the Office of the Medical Director, California Department of Health Care Services, seeks to reverse these trends and motivate smoking cessation by offering a $20 gift card to members who want to quit and who call the California Smokers' Helpline (1-800-NO-BUTTS). Services are available in six languages: English, Spanish, Cantonese, Mandarin, Korean, and Vietnamese.

The Smokers’ Helpline offers extensive counseling and free nicotine replacement therapy in the form of patches to LA County residents. They also proactively call patients at scheduled intervals over a period of several months and will coordinate with health care providers when medically indicated.

Discussing Smoking Cessation with Medi-Cal Members
When a Medi-Cal member visits your office, use the Ask, Advise, Refer cessation intervention:
1. Ask about tobacco at every visit. “Do you smoke?”
2. Advise those who smoke to quit. “It is important for your health to quit smoking.”
3. Refer smokers to the California Smokers’ Helpline. “Call 1-800-NO-BUTTS. They’ll help you with a plan to quit smoking. It’s free and will double your chances of quitting.”

Patient Handout
Cut out the English and Spanish patient flyers on the following pages, as appropriate. Post the flyer in your reception area, or photocopy it and place the copies in your reception area for patients to take.

4. Motivate Medi-Cal members to call. “For a limited time, Medi-Cal members who smoke can ask for a $20 gift card that will be mailed after completing the first counseling session.”

Incentive Requirements
To receive the $20 gift card, your patient must
• Be a current Medi-Cal member.
• Provide a valid Beneficiary Identification Card number which is verified through the Medi-Cal Eligibility Data System (MEDS).
• Ask for the $20 incentive when calling the Helpline.
• Complete the initial 30-40 minute tobacco cessation counseling session.

Referring Patients
Help your patients take their first step to quit smoking by telling them about the Medi-Cal Incentives to Quit Smoking Project.

The flyer promoting this project is available in multiple languages. You can download other languages at the following website: www.caldiabetes.org/content_display.cfm?ContentID=1328.

• Refer your patients directly to the California Smokers’ Helpline
  – By phone (1-800-NO-BUTTS)
  – Online (www.californiasmokershelpline.org)

(Note: Health care providers can also call on behalf of their patients by contacting Cherrie Ng, Partner Relations Coordinator, at (858) 300-1015 or y2ng@ucsd.edu.)

The California Smokers’ Helpline offers a variety of free educational handouts and promotional materials for health care providers at www.californiasmokershelpline.org/Order.php.
Medi-Cal Members:  
Want to Stop Smoking?

Get a FREE $20 gift card 
when you call the 
California Smokers’ Helpline. 
1-800-NO-BUTTS 
(1-800-662-8887)

Here’s how:

• Have your Medi-Cal ID ready. 
• Call one of the phone numbers below. 
• Ask for the $20 gift card.* 
• Talk to a friendly person to create 
a free “stop smoking” plan.

Call today!

English  1-800-NO-BUTTS 
Español  1-800-45-NO-FUME 
中文  1-800-838-8917 
Tiếng Việt  1-800-778-8440 
한국어  1-800-556-5564

*Made possible by a grant from the Centers for Medicare and Medicaid Services under the Medicaid Incentives for Prevention of Chronic Diseases program. Some conditions apply. One gift card per person. While supplies last. Medi-Cal Managed Care plans may offer additional tobacco cessation services.
Miembro de Medi-Cal: ¿Quiere Dejar de Fumar?

Reciba GRATIS una tarjeta de regalo de $20 dólares cuando llame a la Línea de Ayuda para Fumadores de California.

1-800-45-NO-FUME
(1-800-456-6386)

Siga estos pasos:
- Tenga su número de tarjeta de Medi-Cal listo.
- Llame a uno de los números de teléfono de abajo.
- Pida la tarjeta de regalo de $20 dólares.*
- Hable con un amable asesor para crear un “plan para dejar de fumar” gratis.

¡Llame hoy mismo!

Español
1-800-45-NO-FUME

Inglés
1-800-NO-BUTTS

*Financiado por Centers for Medicare and Medicaid Services bajo el programa Medicaid Incentives for Prevention of Chronic Diseases. Algunas condiciones aplican. Una tarjeta de regalo por persona. Esta oferta es válida hasta agotar existencias. Los planes de salud de Medi-Cal pueden ofrecer servicios adicionales para dejar el tabaco. –SPANISH–
Index of Disease Reporting Forms

All case reporting forms from the LA County Department of Public Health are available by telephone or Internet.

<table>
<thead>
<tr>
<th>Reportable Diseases &amp; Conditions</th>
<th>Confidential Morbidity Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidential Morbidity Report</td>
<td>Morbidity Unit (888) 397-3993</td>
</tr>
<tr>
<td>Acute Communicable Disease Control</td>
<td>(213) 240-7941</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sexually Transmitted Disease Confidential Morbidity Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>(213) 744-3070</td>
</tr>
<tr>
<td><a href="http://www.publichealth.lacounty.gov/std/providers.htm">www.publichealth.lacounty.gov/std/providers.htm</a> (web page)</td>
</tr>
<tr>
<td><a href="http://www.publichealth.lacounty.gov/std/docs/STD_CMRL.pdf">www.publichealth.lacounty.gov/std/docs/STD_CMRL.pdf</a> (form)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adult HIV/AIDS Case Report Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>For patients over 13 years of age at time of diagnosis</td>
</tr>
<tr>
<td>HIV Epidemiology Program</td>
</tr>
<tr>
<td>(213) 351-8196</td>
</tr>
<tr>
<td><a href="http://www.publichealth.lacounty.gov/HIV/hivreporting.htm">www.publichealth.lacounty.gov/HIV/hivreporting.htm</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pediatric HIV/AIDS Case Report Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>For patients less than 13 years of age at time of diagnosis</td>
</tr>
<tr>
<td>Pediatric AIDS Surveillance Program</td>
</tr>
<tr>
<td>(213) 351-8153</td>
</tr>
<tr>
<td>Must first call program before reporting</td>
</tr>
<tr>
<td><a href="http://www.publichealth.lacounty.gov/HIV/">www.publichealth.lacounty.gov/HIV/</a> hivreporting.htm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lead Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>No reporting form. Reports are taken over the phone.</td>
</tr>
<tr>
<td>Lead Program (323) 869-7195</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Animal Bite Report Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veterinary Public Health (877) 747-2243</td>
</tr>
<tr>
<td><a href="http://www.publichealth.lacounty.gov/vet/biteintro.htm">www.publichealth.lacounty.gov/vet/biteintro.htm</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Animal Diseases and Syndrome Report Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veterinary Public Health (877) 747-2243</td>
</tr>
<tr>
<td><a href="http://www.publichealth.lacounty.gov/vet/disintro.htm">www.publichealth.lacounty.gov/vet/disintro.htm</a></td>
</tr>
</tbody>
</table>

Use of trade names and commercial sources in Rx for Prevention is for identification only and does not imply endorsement by the Los Angeles County Department of Public Health (LACDPH). References to non-LACDPH sites on the Internet are provided as a service to Rx for Prevention readers and do not constitute or imply endorsement of these organizations or their programs by LACDPH. The Los Angeles County Department of Public Health is not responsible for the content of these sites. URL addresses listed in Rx for Prevention were current as of the date of publication.