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## Depression in Pregnancy Safeguarding the Well-Being of Expectant Mothers

Priya Thaker

**A**lthough a new baby is usually a joyful event for families, many expectant or new mothers experience sadness or apprehension before and after the birth. For most women, such feelings eventually subside. For some, however, the distress may continue or even become worse. If this occurs, they may be experiencing depression.

Perinatal depression refers to depression that occurs during pregnancy or up to 1 year after childbirth.<sup>1</sup> The prevalence of major and minor depression is as high as 11 percent during pregnancy and 13 percent in the postpartum period, with higher proportions for women in poverty.<sup>2,3</sup>

In comparison to postpartum depression, perinatal depression is less discussed by the public and the medical community. This is partly because the emotional changes, fatigue, and other discomforts that are a normal part of pregnancy can obscure the symptoms of depression.<sup>4</sup> Even if a woman acknowledges her depression, she may feel ashamed about her negative feelings and be reluctant to share this with her doctor.

Nevertheless undiagnosed depression can result in non-adherence to health care recommendations and unhealthy behaviors during and after pregnancy. Consequences can include adverse birth outcomes such as preterm delivery and low birthweight.<sup>5,6</sup> Untreated depression may also impair a new mother's ability to care for and bond with her infant, which can profoundly harm a child's emotional, physical, and intellectual development.<sup>7</sup>

### Magnitude of Depressive Symptoms During Pregnancy

The Los Angeles County Department of Public Health conducted a survey through its Los Angeles Mommy and Baby (LAMB) Project, in 2010. The survey asked mothers who recently delivered a live baby about events that happened before, during, and shortly after their pregnancy. The survey included 6,593 eligible respondents representative of the 133,160 live births in Los Angeles County during 2010.

According to the results, more than 31 percent of women experienced depressive symptoms for 2 weeks or longer during their pregnancy, including feeling sad, empty, or depressed for most of the day and/or losing interest in work, hobbies, and other activities that they usually enjoyed (Table 1). Over 28 percent of women with depressive symptoms during pregnancy also reported feeling moderately or very depressed in the months following delivery.

The LAMB 2010 survey found that depressive symptoms during pregnancy were more common among African American and Hispanic women compared to Asian/Pacific Islander and white women. In addition, the rates of depressive symptoms increased as the age of the mother decreased, with half of the mothers below 20 years of age reporting symptoms during their pregnancy. Similarly, low-income expectant mothers experienced depressive symptoms at higher rates compared to their more affluent counterparts.

Young age during pregnancy has been described as a risk factor for prenatal depression.<sup>8</sup> In Los Angeles County, the prevalence of self-reported depressive

*continued on page 2 >*



**Table 1. Self-Reported Depressive Symptoms in Pregnancy\***  
Los Angeles Mommy and Baby Survey, 2010 (n=6,593)

Selected Maternal Characteristics		Depressive Symptoms
All Pregnant Women		31.7%
Race/Ethnicity	White	17.8%
	Hispanic	36.7%
	African American	40.0%
	Asian/Pacific Islander	21.6%
	Native American/Other/Unknown	25.7%
Age of Mother	Less than 20 Years	50.9%
	20-24 Years	40.3%
	25-34 Years	27.6%
	35 Years and Older	25.5%
Family Income	Below \$20,000	42.6%
	\$20,000 to \$39,999	33.3%
	\$40,000 to \$59,999	26.5%
	\$60,000 to \$99,999	15.6%
	\$100,000 and Above	13.3%

\* Feeling sad, empty, or depressed for most of the day and/or losing interest in things like work, hobbies and other things that they had usually enjoyed for 2 weeks or more during pregnancy.

symptoms decreases as the age of the mother increases for all race/ethnic groups. Even so, race/ethnic variations remain. While the prevalence of depressive symptoms among women below 20 years of age was similar for Hispanic, white, and African American women (50.5%, 53.6%, and 53.7%, respectively), a higher proportion of Hispanic and African American women 35 years and older experienced depressive symptoms during pregnancy compared to white women (33.8%, 29.0%, and 16.1%, respectively).

Social supports are important for an expectant mother's well-being.<sup>9</sup> Women who were dissatisfied with the father's support were more likely to report depressive symptoms compared to women who felt neutral or satisfied with the level of support provided (60.4% vs. 28.4%). Women who perceived that they did not have someone with whom to discuss their problems during pregnancy were more likely to report depressive symptoms compared to women who perceived that they had these social supports (48.1% vs. 28.7%). Depressive symptoms were also more prevalent among women who described their pregnancy as unwanted/mistimed compared to women who did not (40.6% vs. 23.0%).

### Impacts of Perinatal Depression on Health Behaviors

Depression can negatively shape healthy behaviors during and after pregnancy. Mothers with depressive symptoms during pregnancy were more likely to not initiate breastfeeding after delivery compared to those without depressive symptoms (14.9% vs. 10.7%). Mothers with depressive symptoms during pregnancy were more likely to miss their postpartum health

check-ups than mothers without depressive symptoms (11.6% vs. 7.2%).

### Recommendations for Screening and Care

Although 63 percent of pregnant women reported that their health provider had asked if they felt anxious or depressed at a prenatal care visit, the high prevalence of depressive symptoms during pregnancy and the availability of effective treatment suggest that all pregnant patients should be screened.

Therefore, physicians should view prenatal care visits as an opportunity to identify challenging circumstances or lack of social supports in an expectant mother's personal life and assure that these patients receive the care they need.

The Los Angeles County Perinatal Mental Health Task Force (a countywide network of public, private, and community agencies) has created the "Bringing Light to Motherhood: Community Provider Perinatal Mental Health Toolkit." This resource, which will be available soon for a fee, recommends that women receive perinatal depression screenings at the initial prenatal visit, once in the second and third trimester, and 3 times within the 6-month period after delivery.<sup>10</sup>

A simple two-question psychosocial screening tool is appropriate to determine whether additional screenings are necessary:

- "Over the past 2 weeks, have you ever felt down, depressed, or hopeless?"
- "Over the past 2 weeks, have you felt little interest or pleasure in doing things?"

## Local and National Perinatal Mental Health Resources

A number of resources are available to health care providers and patients to address perinatal mental health disorders, including referral services, crisis hotlines, and training materials.

### Local Resources

#### Los Angeles County Department of Mental Health, ACCESS Center Helpline.

Phone referral services available 24/7, (800) 854-7771

#### Los Angeles County Department of Mental Health, Psychiatric Mobile Response Team

Clinical staff perform on-site assistance for a patient in a psychiatric emergency (danger to self or others or gravely disabled), (800) 854-7771

#### Los Angeles County Department of Mental Health Service Planning Area Navigation Teams

DMH navigators link providers and patients to local perinatal mental health services. [http://file.lacounty.gov/dmh/cms1\\_178668.doc](http://file.lacounty.gov/dmh/cms1_178668.doc)

#### Los Angeles County Perinatal Mental Health Task Force

The website provides access to the PHQ-9 screening tool [www.maternalmentalhealthla.org/for-providers/resources](http://www.maternalmentalhealthla.org/for-providers/resources)

#### Los Angeles County Suicide Prevention Center

Help available 24/7, (877) 727-4747

#### Los Angeles County Department of Public Health, Comprehensive Perinatal Services Program

CPSP integrates nutrition, psychosocial, and health education assessments, interventions, and perinatal education with basic obstetrical care. The program trains CPSP providers on perinatal mental health screenings, (213) 639-6419

#### Los Angeles County Department of Public Health, Nurse-Family Partnership

Available to low-income, first-time pregnant women who have not yet reached their 24th week of pregnancy. Provides clients with comprehensive services and interventions, (213) 639-6433



### National Resources

#### National Suicide Prevention Lifeline

(800) 784-2433

#### National Perinatal/Postpartum Depression Hotline

Available 24/7 for information and referrals to mental health providers (800) PPD-MOMS or (800) 773-6667

#### The MacArthur Initiative on Depression and Primary Care

Provides a free toolkit for physicians on screening for and treating depression in all patients, [www.depression-primarycare.org/clinicians/toolkits/](http://www.depression-primarycare.org/clinicians/toolkits/)

A positive answer to either question warrants follow-up with a screening tool such as the PHQ-9 (Patient Health Questionnaire 9), a standardized questionnaire to determine whether a patient will need treatment. The scoring indicates the severity of symptoms and ranges from minimal to mild to moderate to moderately severe to severe.

For mild depression, care may include support groups and recommending healthy behaviors. The management of moderate depression may include interpersonal psychotherapy, cognitive behavioral therapy, and medication. For more severe depression, medication, electroconvulsive therapy, or hospitalization may be required.<sup>11</sup> 

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### REFERENCES

1. Gavin NI, Gaynes BN, Lohr KN, Meltzer-Brody S, Gartlehner G, Swinson T. Perinatal depression: a systematic review of prevalence and incidence. *Obstet Gynecol.* 2005 Nov;106(5 Pt 1):1071-83.
2. Gaynes, B., Gavin, N, Meltzer-Brody, S, Lohr, K., Swinson, T, Gartlehner, G, et al. (2005). Perinatal depression prevalence, screening accuracy, and screening outcomes: Summary, evidence report and technology assessment, No. 119. AHRQ Publication No. 05-E006-1.
3. Isaacs, M. (2004). Community care networks for depression in low-income communities and communities of color: A review of the

literature. Submitted to Annie E. Casey Foundation and the Howard University School of Social Work and the National Alliance of Multiethnic, Behavioral Health Associations.

4. Klein M, Essex MJ. Pregnant or depressed? The effect of overlap between symptoms of depression and somatic complaints of pregnancy on rates of major depression during the second trimester. *Depression.* 1994;2:1994-5.
5. Talge, N., Neal, C., Glover, V., (2007). Antenatal maternal stress and long term effects on child neurodevelopment: How and why? *J Child Psychol Psychiatr*, 48, 245-261
6. Evans, J., Heron, J., Patel, R., (2007). Depressive symptoms during pregnancy and low birth weight at term. *Br J Psychiatry*, 191: 84-85
7. Position Statement: Screening for prenatal and postpartum depression. (n.d.). Perinatal Foundation/Wisconsin Association for Perinatal Care. Retrieved July 17, 2012 from <http://www.perinatalweb.org>.
8. Marcus, S.M., Flynn, H.A., Blow, F.C., Barry, K.L. (2003). Depressive symptoms among pregnant women screened in obstetrics settings. *J Womens Health*, 12: 373-380.
9. Westdahl, C., Milan, S., Magriples, U., Kershaw, T., Schindler-Rising, S., Ickovics, J., (2007). Social support and social conflict as predictors of prenatal depression. *Obstet Gynecol*, 110(1); 134-140.
10. Los Angeles County Perinatal Mental Health Task Force. (2012). Bringing Light to Motherhood: Community Provider Perinatal Mental Health Toolkit. Los Angeles, CA. <http://www.maternalmentalhealthla.org/for-providers/toolkit>.
11. Fellows of the American Congress of Obstetrician and Gynecologists (2008). Incorporating Perinatal Depression Screening into Practice (PowerPoint slides). Retrieved from <http://mail.ny.acog.org/website/DepressionCurriculum.pdf>.

# New Influenza Vaccination Recommendations for 2012-2013

Melanie Barr, RN, MSN

Alvin Nelson El Amin, MD, MPH

In August 2012, the Advisory Committee on Immunization Practices (ACIP) published its recommendations for the 2012-13 influenza season.<sup>1</sup> As in previous years, ACIP recommends universal influenza (flu) vaccination for all persons aged 6 months and older. This recommendation is intended to reduce barriers to vaccination and protect as many people as possible against the dangers of flu.

While flu vaccinations are recommended for everyone aged 6 months and older, special effort should be made to vaccinate persons at risk for complications related to flu, including pregnant women, persons with chronic medical conditions, children less than 5 years of age, adults 65 years of age and older, and persons who live with or care for others at risk for complications associated with flu. Health care personnel, who can be a source of transmission to patients, also should be vaccinated to reduce transmission and provide additional protection for persons at risk for complications related to flu.

## Changes to Previous Recommendations

ACIP's latest flu recommendations are consistent with recommendations from the 2011-2012 influenza season with the following two exceptions.

### 2012-13 Influenza Vaccine Strains

The 2012-13 flu vaccine contains these antigens: A/California/7/2009 (H1N1)-like, A/Victoria/361/2011 (H3N2)-like, and B/Wisconsin/1/2010-like (Yamagata lineage) viruses. While the A and B antigens have changed from the previous season, the A(H1N1) antigen remains in the vaccine.

### Recommendations for Vaccinating Children 6 Months through 8 Years of Age

This season, as in past flu seasons, children who are 9 years of age and older only need to receive 1 dose of flu vaccine while some children 6 months through 8 years of age will need to receive 2 doses to optimize their immune response to vaccination. For this year, ACIP modified the criteria for determining which children need to receive 2 flu vaccine doses.

Due to the significant antigenic difference of the 2009 H1N1 pandemic virus from the H1N1 antigens in seasonal flu vaccines previous to 2009, and the anticipated circulation of 2009 H1N1 flu during the 2012-13 flu season, ACIP wants to ensure that all children 6 months through 8 years of age have received at least 2 doses of a 2009(H1N1)-containing

vaccine. If this is the first season of flu vaccination for a child 6 months through 8 years of age, that child should receive 2 doses of flu vaccine. Those previously vaccinated against the flu may need 1 or 2 doses, depending on previous receipt of 2009(H1N1)-containing vaccine. Use one of the two following approaches, recommended by ACIP, to determine the number of doses required.

#### Approach 1: Uncertain Vaccination History

If it is difficult to determine your patient's vaccination history prior to the 2010-11 season, use the approach outlined in Figure 1 to determine how many doses to administer to children 6 months through 8 years of age. This simplified approach considers only doses received since July 1, 2010.

#### Approach 2: Known Vaccination History

If your patient's vaccination history prior to the 2010-11 flu season is documented, consider the following alternative approach to determine the number of flu vaccine doses required for children 6 months through 8 years of age:

- Administer 2 doses if they...
  - Were never vaccinated
  - Were vaccinated prior to the 2010-11 season but did not receive the 2009(H1N1) monovalent vaccine.
- Administer 1 dose if the child meets one of the following criteria...
  - Received 1 or more doses of H1N1-containing vaccine (e.g., monovalent 2009[H1N1], seasonal 2010-11, or seasonal 2011-12) and 2 doses of seasonal vaccine before July 1, 2010; or
  - Received 2 or more doses of seasonal flu vaccine after July 1, 2010, or
  - Received 1 or more doses of seasonal flu vaccine prior to July 1, 2010, and 1 or more doses of seasonal influenza vaccine after July 1, 2010.

## Reminders

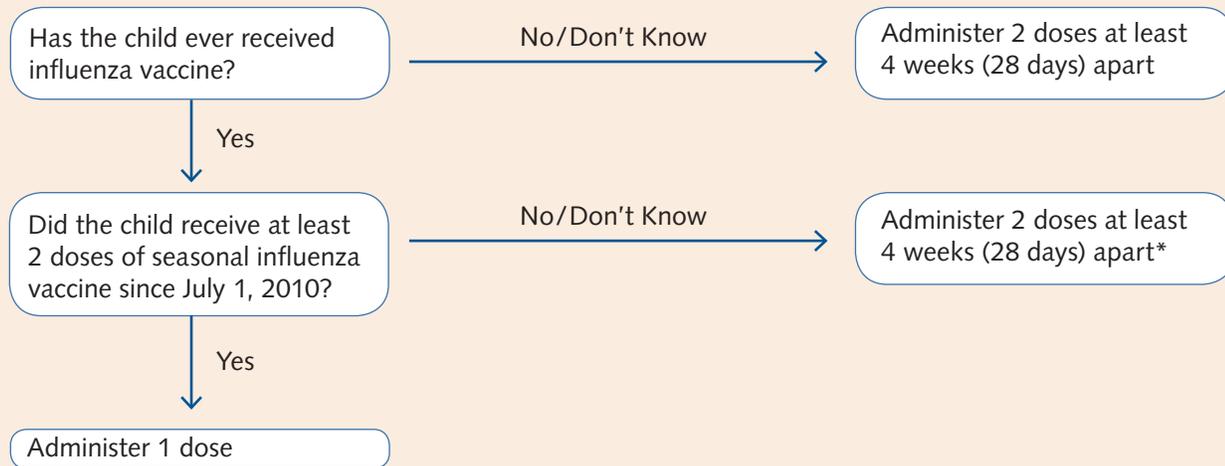
### Vaccination of Pregnant Women

Because influenza can cause serious complications for pregnant women and their fetuses, ACIP recommends that they be vaccinated, during any trimester, with inactivated trivalent influenza vaccine (TIV). Pregnant women should never receive Live Attenuated Influenza Vaccine (LAIV). A recently published 5-year retrospective cohort study of over 10,000 women supports previous research findings that influenza vaccine given to pregnant women does not cause fetal harm. The study found that influenza vaccination in the first trimester

## Resources

- ACIP Influenza Vaccination Recommendations, 2012-2013 Influenza Season [www.cdc.gov/vaccines/pubs/ACIP-list.htm#flu](http://www.cdc.gov/vaccines/pubs/ACIP-list.htm#flu)
- Vaccine Information Statements (VIS) in multiple languages: [www.immunize.org/vis/](http://www.immunize.org/vis/)
- Influenza and respiratory disease prevention educational materials: [www.eziz.org/resources/flu-promo-materials](http://www.eziz.org/resources/flu-promo-materials)

**Figure 1. Influenza Vaccine Dosing Algorithm for Children 6 Months through 8 Years of Age  
Advisory Committee on Immunization Practices, 2012-13 Influenza Season**



\* This algorithm takes into consideration only doses of seasonal influenza vaccine received since July 1, 2010.

If a child's vaccination history before July 1, 2010, is available, and the child is known to have received at least 2 seasonal influenza vaccines during any previous season and at least 1 dose of a 2009(H1N1)-containing vaccine (i.e., either 2010-11 or 2011-12 seasonal vaccine or the monovalent 2009[H1N1] vaccine), then the child needs only 1 dose for 2012-13. Using this approach, children aged 6 months through 8 years need only 1 dose of vaccine in 2012-13 if they have received any of the following:

- 2 or more doses of seasonal influenza vaccine since July 1, 2010 or
- 2 or more doses of seasonal influenza vaccine before July 1, 2010, and 1 or more doses of monovalent 2009(H1N1) vaccine or
- 1 or more doses of seasonal influenza vaccine before July 1, 2010, and 1 or more doses of seasonal influenza vaccine since July 1, 2010.

Children for whom one of these conditions is not met require 2 doses in 2012-2013.

ter was not associated with an increase in major malformation rates and was associated with a decrease in the stillbirth rate.<sup>2</sup> This provides additional support for the recommendation to vaccinate pregnant women against influenza.

A previous study also demonstrated that vaccinating pregnant women against flu not only protects the mother but also provides protection to the infant. In that study, infants of mothers who were vaccinated during pregnancy were found to be less likely to get the flu. Thus, vaccinating during pregnancy can protect infants younger than 6 months of age who are too young to be vaccinated.<sup>3</sup>

### Vaccination of Patients with an Egg Allergy

The 2012-2013 ACIP flu vaccination recommendations include a reminder that a history of an egg allergy is not a contraindication to flu vaccination. Individuals who have experienced only hives after egg exposure should be vaccinated with TIV by a provider who is familiar with the potential manifestation of egg allergies. These individuals should be observed for reactions for at least 30 minutes following vaccination. Patients who experience other symptoms, such as cardiovascular (hypotension) or respiratory (wheezing) changes and gastrointestinal problems (nausea/vomiting) that require

medical intervention should not be vaccinated and should be referred for further evaluation to a physician with experience managing allergic conditions.<sup>1</sup> 

**Melanie Barr, RN, MSN**, is the director of nursing, and **Alvin Nelson El Amin, MD, MPH**, is the medical director, Immunization Program, Los Angeles County Department of Public Health.

### REFERENCES

1. CDC. Prevention and Control of Influenza with Vaccines. Recommendations of the Advisory Committee on Immunization Practices (ACIP) – United States, 2012-13 Influenza Season. *MMWR*. Aug 17, 2012; 61(32).
2. Sheffield JS, Greer LG, Rogers VL, et al. Effect of Influenza Vaccination in the First Trimester of Pregnancy. *Obstet Gynecol*. 2012; 120 (3): 532-537.
3. Poehling, K. A., Szilagyi, P. G., Staat, M. A., et al. Impact of maternal immunization on influenza hospitalizations in infants. *Am J Obstet Gynecol*. 2011; 5141-148.

# Botulism: A Commonly Unrecognized Disease

Christina Mikosz, MD, MPH

**B**otulism is a serious neurotoxin-mediated illness characterized by acute cranial neuropathy and a symmetric, descending flaccid paralysis that may cause death (typically via respiratory failure) without timely diagnosis and treatment. Given the severity of illness, as well as botulinum toxin's classification as a Category A bioterrorism agent,<sup>1</sup> the Los Angeles County Department of Public Health investigates all suspected cases of botulism. Each year over the past decade, Public Health has investigated between 3 to 11 suspected cases and has identified, on average, 2 confirmed cases per year, excluding infants.<sup>2</sup>

Since the clinical syndrome is often not recognized, botulism is very likely misdiagnosed and, thus, underreported to Public Health. As a result, there is a need for awareness of botulism as a possible diagnosis in patients with compatible symptoms and of the importance of immediate notification to Public Health to aid in diagnosis.

## Local Case Study

*A recent Public Health investigation of a botulism cluster illustrates under-recognition in two local patients.*

In early 2012, the department was notified of suspected botulism in one man and one woman, both aged 23 years. Four days after sharing a rancid-tasting, sealed, ready-to-eat soup left unrefrigerated for 11 days after purchase, both patients awoke with ptosis, diplopia, dry mouth, and dysphagia. The male patient visited two facilities on the third day of symptoms and received a diagnosis first of epiglottitis, despite negative neck imaging, then pharyngitis, and was discharged home with oral antibiotics, which he was unable to take due to his difficulty swallowing. With progressive illness, he presented to a third facility on the sixth day of his symptoms, where epiglottitis was again considered, and he was admitted to treat this diagnosis and dehydration. Botulism was not considered as a possible diagnosis until the ninth day, when his illness progressed to respiratory failure requiring intubation. Public Health was notified of suspected botulism, and staff immediately investigated to confirm this diagnosis and arrange for testing at the Public Health Laboratory as well as botulinum antitoxin release from the Centers for Disease Control and Prevention. Public Health conducted an inspection of the patient's home for suspicious food items the following day.

The female patient also presented to multiple medical facilities with progressive symptoms, receiving diagnoses of vertigo on her third symptom day, then dizziness on the sixth day. Progressive descending symptoms that included complaints of upper extremity weakness prompted evaluation at a third clinic on day seven, where an upper respiratory infection, epiglottitis, and tetanus were considered, and she was discharged home with a prescription for oral antibiotics. She mentioned to her clinicians during this visit that the

male patient was hospitalized with some similar symptoms. The female patient was ultimately hospitalized for observation once botulism was suspected in the male patient; her illness remained less severe than his, and she was discharged 2 days later. Both patients recovered.

In these patients, botulism was not suspected despite descending paralysis and, at some visits, discussion of the other patient's similar symptoms, an epidemiologic link that could have provided diagnostic clues<sup>3</sup> in light of the female patient's subtle, less severe presentation that was attributed to other disease processes. Laboratory testing of patient specimens was negative for botulism. Importantly, the clinical syndrome of an acute, descending paralysis with cranial nerve involvement and the epidemiologic linkage to another patient with similar symptoms are collectively highly suggestive of botulism even in the absence of laboratory confirmation. Despite their varying presentations, both patients met the standard case definition of a probable botulism case.<sup>4</sup>

## Botulism should be considered in the differential diagnosis of any patient with acute, symmetric descending paralysis involving cranial nerves

Botulinum toxin, which is typically produced by ubiquitous spores of *Clostridium botulinum* bacteria and sometimes referred to as the most toxic substance known, is a Category A bioterrorism agent, the highest-priority category of agents felt to represent a risk to national security. The suspicion of Category A diseases such as botulism, smallpox, and anthrax necessitates immediate reporting by clinicians to Public Health for investigation to rule out a mass intentional exposure.

Although this botulism cluster likely resulted from unsafe food storage, delayed diagnosis and resulting late notification impeded the rapid public health action necessary in all suspected illness from Category A agents. Botulism should be considered in the differential diagnosis of any patient with acute, symmetric descending paralysis involving cranial nerves, with immediate Public Health notification and consultation due to botulism's lethality and the need to rule out potential wider exposure via contaminated food or other vehicle. Because dissemination of botulism toxin can occur through multiple methods (aerosolization or contamination of food or water), a clear exposure history might not be obvious upon interview. However, this should not eliminate botulism from consideration if clinically compatible. **Rx**

## Frequently Asked Questions

### How does botulinum toxin cause human illness?

Botulinum toxin is typically produced by *Clostridium botulinum* (and rarely by *Clostridium baratii* and *Clostridium butyricum*) and causes illness via irreversible blockade of presynaptic acetylcholine release. Spores of these bacteria are ubiquitously found in soil. There are seven recognized subtypes in the botulinum toxin family, designated as A-G, although only four subtypes (A, B, E, and G) are associated with human illness.

Human illness is seen in four forms, three forms involving *in vivo* production of toxin after spore ingestion: infant botulism, the most common form and attributable to the incomplete establishment of normal bowel flora seen in infants, allowing colonization of *Clostridium* bacteria; wound botulism, often associated with black tar heroin use; and intestinal toxemia botulism, involving the abnormal intestinal colonization of *Clostridium* bacteria in adults. The incubation period is variable in these three illness types.

In contrast, foodborne botulism is caused by ingestion of preformed toxin in anaerobically sealed food. It is classically associated with home-canned foods, but as *Clostridium* spores are ubiquitous, any improperly stored or sterilized food that contains ingredients possibly exposed to soil and that provides an anaerobic, low-acid environment with low salt/sugar content can be the cause. The incubation period is typically 12 to 36 hours after ingestion, but has been reported to be as short as 6 hours or as long as 10 days in the literature.

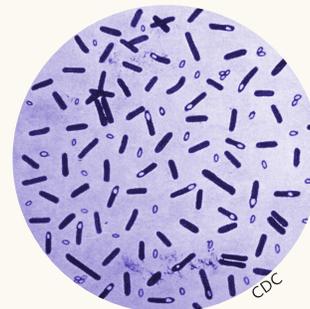
### What are the signs/symptoms of botulism?

- Symmetric cranial neuropathies, such as bilateral ptosis, diplopia, dry mouth, difficulty swallowing, and difficulty speaking.
- Symmetric descending flaccid paralysis, potentially progressing to respiratory failure.
- Foodborne botulism may also be accompanied by gastrointestinal symptoms such as abdominal pain, nausea, vomiting, and/or diarrhea.
- Infant botulism may manifest as poor feeding, constipation, and neck/limb weakness ("floppy baby").

### What is in the differential diagnosis of botulism?<sup>5</sup>

#### In adults

- Guillain-Barré syndrome
- Myasthenia gravis
- Tick paralysis
- Bacterial or chemical food poisoning
- Cerebrovascular accident
- Chemical intoxication (e.g., carbon monoxide)
- Mushroom poisoning
- Psychiatric illness



#### In children

- Sepsis
- Meningitis
- Reye's syndrome
- Werdnig-Hoffman disease (Type 1 spinal muscular atrophy)
- Leigh disease (a rare inherited neurometabolic disorder)
- Electrolyte imbalance
- Congenital myopathy
- Tick paralysis

### If my patient has an acute, symmetric descending paralysis involving cranial nerves without another clear diagnosis, how should I proceed?

Immediately notify Acute Communicable Disease Control at (213) 240-7941 to discuss the case with the physician on-call 24 hours a day; ACDC can help coordinate laboratory testing for botulism at the Public Health Laboratory. Supportive care is the mainstay of botulism treatment, but ACDC can authorize botulinum antitoxin release from the CDC if warranted.

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3. Newkirk R, Hedberg C. Rapid detection of foodborne botulism outbreaks facilitated by epidemiological linking of cases: implications for food defense and public health response. *Foodborne Pathog Dis* 2012;9:150-5.

4. CDC. National Notifiable Diseases Surveillance System: botulism 2011 case definition. Available at [www.cdc.gov/osels/ph\\_surveillance/nndss/casedef/botulism\\_current.htm](http://www.cdc.gov/osels/ph_surveillance/nndss/casedef/botulism_current.htm). Accessed August 20, 2012.

5. CDC. Summarized from CDC Botulism web page at <http://emergency.cdc.gov/agent/Botulism/clinicians/diagnosis.asp>, accessed July 7, 2012.

## REFERENCES

1. CDC Emergency Preparedness and Response, Bioterrorism Agents/Diseases website: [www.bt.cdc.gov/agent/agentlist-category.asp](http://www.bt.cdc.gov/agent/agentlist-category.asp). Accessed July 9, 2012.

2. Annual data on reportable diseases in Los Angeles County, including botulism, are accessible at Los Angeles County Department of Public Health's Acute Communicable Disease Control website: [www.publichealth.lacounty.gov/acd/Report.htm](http://www.publichealth.lacounty.gov/acd/Report.htm).

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# Rx for Prevention

Promoting health through prevention in Los Angeles County

## Upcoming Trainings

### What Every Clinician Should Know about the CDC's New Lead Screening Guidelines

October 24, 2012

Good Samaritan Hospital  
1225 Wilshire Blvd., Los Angeles

Speakers include **Bruce P. Lanphear, MD, MPH**, and **Dean Baker, MD, MPH**.

Fee is \$65 for early registration; \$75 thereafter.

Presented by a collaboration of the LA County Department of Public Health Childhood Lead Prevention Poisoning Program, Southern California Health and Housing Council, Physicians for Social Responsibility, and the Healthy Homes Collaborative

For more information, contact Deborah Reff at (323) 869-7089 or [dreff@ph.lacounty.gov](mailto:dreff@ph.lacounty.gov).

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**Comments or Suggestions?** If so, or if you would like to suggest a topic for a future issue, e-mail Dr. Jeffrey Gunzenhauser, co-editor, at [jgunzenhauser@ph.lacounty.gov](mailto:jgunzenhauser@ph.lacounty.gov).



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## Index of Disease Reporting Forms

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

### Reportable Diseases & Conditions

#### Confidential Morbidity Report

Morbidity Unit (888) 397-3993

Acute Communicable Disease Control  
(213) 240-7941

[www.publichealth.lacounty.gov/acd/reports/CMR-H-794.pdf](http://www.publichealth.lacounty.gov/acd/reports/CMR-H-794.pdf)

### Sexually Transmitted Disease

#### Confidential Morbidity Report

(213) 744-3070

[www.publichealth.lacounty.gov/std/providers.htm](http://www.publichealth.lacounty.gov/std/providers.htm) (web page)

[www.publichealth.lacounty.gov/std/docs/STD\\_CMR.pdf](http://www.publichealth.lacounty.gov/std/docs/STD_CMR.pdf) (form)

### Adult HIV/AIDS Case Report Form

For patients over 13 years of age at time of diagnosis

HIV Epidemiology Program

(213) 351-8196

[www.publichealth.lacounty.gov/HIV/hivreporting.htm](http://www.publichealth.lacounty.gov/HIV/hivreporting.htm)

### Pediatric HIV/AIDS Case Report Form

For patients less than 13 years of age at time of diagnosis

Pediatric AIDS Surveillance Program

(213) 351-8153

*Must first call program before reporting*

[www.publichealth.lacounty.gov/HIV/hivreporting.htm](http://www.publichealth.lacounty.gov/HIV/hivreporting.htm)

### Tuberculosis Suspects & Cases

#### Confidential Morbidity Report

Tuberculosis Control (213) 745-0800

[www.publichealth.lacounty.gov/tb/forms/cmr.pdf](http://www.publichealth.lacounty.gov/tb/forms/cmr.pdf)

### Lead Reporting

No reporting form. Reports are taken over the phone.

Lead Program (323) 869-7195

### Animal Bite Report Form

Veterinary Public Health (877) 747-2243

[www.publichealth.lacounty.gov/vet/biteintro.htm](http://www.publichealth.lacounty.gov/vet/biteintro.htm)

### Animal Diseases and Syndrome Report Form

Veterinary Public Health (877) 747-2243

[www.publichealth.lacounty.gov/vet/disintro.htm](http://www.publichealth.lacounty.gov/vet/disintro.htm)

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