Special Insert: Differential Diagnosis of Smallpox

County of Los Angeles Department of Health Services
Public Health

# THE PUBLIC'S HEALTH

Newsletter for Medical Professionals in Los Angeles County

Volume 2 • Number 7 July/August 2002

# California Mandates Reporting of HIV Infection

Beginning July 1, 2002, HIV infection joined the list of reportable diseases and conditions as sanctioned by the California Code of Regulations (Title 17, Article 3.5, Sections 2641.5 - 2643.20). This mandate, which follows nearly 20 years after AIDS became a reportable condition in 1983, requires healthcare providers, counseling and testing providers, and laboratories to report all cases of HIV infection to their local health department. Exempt from reporting by these regulations are all anonymous HIV tests, as well as tests performed by blood banks, plasma centers, insurance companies, and double-blind research programs. HIV reporting will not replace AIDS reporting, which will continue according to the previously established procedures. Tests indicative of HIV infection include, HIV p24 antigen, assays for HIV antibodies, and quantitative HIV (viral load) tests. Reporting of cases to the Los Angeles County HIV Epidemiology Program is possible by completing the HIV/AIDS Case Report Form (DHS 8641A: 9/01) available at **http://lapublichealth.org/hiv/hivreporting.htm**.

**Continued on page 2**

## Routine Vaccination Schedule Resumes for Tetanus and Diphtheria Toxoids (Td), Diphtheria and Tetanus Toxoids and Acellular Pertussis (DTaP) Vaccine, and Measles, Mumps, and Rubella (MMR) Vaccine

On June 21, 2002, the Centers for Disease Control and Prevention (CDC) announced that the national supply of adult tetanus and diphtheria toxoids (Td) is sufficient to allow a return to the routine Td immunization schedule (MMWR, June 21, 2002, Vol. 51, No. 24, 529-530; **www.cdc.gov/mmwr/preview/mmwrhtml/mm5124a5.htm**). The administration of routine Td boosters can therefore resume. As health care providers replenish their supply of Td, they should begin to recall persons for whom routine Td boosters were deferred.

Although not all health care providers experienced a supply shortage of DTaP and/or MMR vaccines, providers that did received guidelines from the Advisory Committee on Immunization Practices (ACIP) on which children should receive priority for vaccination and which could have immunization deferred. On July 12, 2002, CDC's MMWR Notice to Readers (Vol. 51, No. 27; 598-599; **www.cdc.gov/mmwr/preview/mmwrhtml/mm5127a5.htm**) reported that supplies of DTaP vaccine and MMR vaccine are now sufficient to permit the return to the routine schedule for DTaP and MMR use.

Providers are requested to order only enough DTaP and MMR vaccine for a ≤30-day supply for at least the next 2 months to ensure that current supplies can meet requests. Providers are also requested to delay recall of patients previously deferred under ACIP guidelines until DTaP and MMR vaccine supply improves further. However, if a child who needs these vaccines seeks medical care for other reasons or if the parent requests immunization for their child, he/she should be administered vaccine unless contraindications exist. CDC will continue to monitor DTaP and MMR vaccine supplies. Updates regarding vaccine supply and shortages can be found at **http://www.cdc.gov/nip/**.

# THE PUBLIC'S HEALTH

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# HIV Infection (from page 1)

The CDC has advocated uniform HIV surveillance by states since 1994. Nearly all states now have some form of HIV reporting – 33 states report cases by name and 14 by non-name code. Requiring HIV reporting in California marks a milestone in the monitoring of the HIV/AIDS epidemic. Rates of HIV, once on the decline, have leveled off and have even begun to increase in some socio-demographic and behavior-risk groups. The new reporting requirement is necessary to better monitor the epidemic by identifying prevalence at all stages of the disease – not just when infection has advanced to the point of AIDS. Mandatory reporting is also critical in this era of budget cuts and clinic closures; a better awareness of the rates of infection will enhance our understanding of the impact HIV and AIDS has on our healthcare system. And more important, future funding for local HIV and AIDS treatment and services in Los Angeles County through the Ryan White Care Act will soon be allocated according the number of HIV cases reported. Thus, the county's ability to adequately care for those infected hinges on this change in reporting standards.

## How the process works

Similar to AIDS reporting, healthcare providers and laboratories must report cases of HIV infection within 7 days of identification. However, unlike AIDS reporting, HIV reporting will not include personal identifying information. Instead, cases will be classified by a non-name code consisting of 4 components totaling 15 digits (see the adjoining figure, page 3):

1. Soundex - an algorithm which converts the client's surname into a 4 digit alphanumeric code
2. Date of birth, an 8-digit numeric
3. Gender - male, female, or transgender (male-to-female or female-to-male) a 1-digit code
4. Social security number, the last 4 digits, (four zeros are used if the client is unable to provide this information).

Healthcare providers will be responsible for providing the client's surname, date of birth, and gender when submitting laboratory requisitions for any test used to identify HIV or antibodies to HIV. Failure to provide this information will prompt the receiving laboratory to contact the provider for the information

Laboratories are responsible for: 1) converting surnames into a 4-digit non-name code, 2) reporting that code and any HIV-confirming results back to the provider, and 3) reporting positive findings to the Health Officer of the provider's jurisdiction using the partial non-name code. Thus, when health

**Continued on page 3**

**Correction:** The May 2002 issue (Vol. 2, No. 5) of **The Public's Health** included an article entitled "Foreign Born TB in Los Angeles County." The accompanying table (page 4) incorrectly listed one category of "Country of Birth." It should have read "South Korea (Republic of Korea)." Data for North Korea was not included in this study.

# HIV Infection (from page 2)

officials are notified of any HIV cases, they will receive no personal identifying information. Laboratories, therefore, play a crucial role in this new reporting system since they are responsible for alerting providers and public health officials that a case of HIV has been identified and, if not already reported, that it should be reported.

The provider has a vital role in the reporting process. Upon notification of an HIV infected client, the provider has 7 days to complete and submit an HIV case report form to the LA County HIV Epidemiology Program using the established non-name code for reference. Again, this system was designed to alleviate concerns regarding breaches in confidentiality - patients' names are never received by public health officials. HIV reports will be handled in the same highly confidential manner as are AIDS case reports. To ensure completeness of reporting, public health workers will follow-up with providers to obtain lab reports that do not match a previously reported case. To this end, providers must maintain on-site a cross-reference system - such as a manual log sheet or electronic file - to monitor the reporting status of their HIV-infected clients.

The impact of the new HIV surveillance system on our ability to track the epidemic will not be known for many months. Eventually, though, HIV case reporting should enhance our ability to appropriately direct and target at-risk groups which will greatly improve the effectiveness of prevention efforts and guide resource allocation for health care and other supportive services.

If you have any questions about HIV reporting or would like to know about reporting training opportunities, contact the HIV Epidemiology Program during business hours at 213-351-8516, or visit the HIV reporting website at http://lapublichealth.org/hiv/hivreporting.htm

## HIV Case Reporting Process

**STEP 1: Provider submits specimen to laboratory for testing**
When specimens are submitted for any HIV test, providers must include on the request slip the client's surname, gender (male, female, male-to-female or female-to-male transgender) and date of birth.

**STEP 2: Laboratories must create partial non-name code and notify public health officials**
If the test is positive for HIV, laboratories are responsible for converting surnames into a Soundex 4-digit code (digits 1-4 as shown below) and notifying public health officials directly using the partial non-name code: Soundex-converted surname, date of birth and gender (digits 1-11 as shown below).

**STEP 3: Providers must keep a cross-reference system of HIV-positive clients and notify public health officials of new cases**
When notified of a test indicative of HIV, providers are responsible for checking to see if that patient has been previously reported for HIV or AIDS and, if not, completing the final step in the reporting process by submitting the State-mandated HIV/AIDS Case Report Form (DHS8641A: 9/01). Patient information is converted into the final 15-digit code to remove all personal identification.

**15-digit non-name code for HIV case reporting:**

| 1 | 2 | 3 | 4 | | 5 | 6 | | 7 | 8 | | 9 | 10 | | 11 | | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ___ | ___ | ___ | ___ | \| | ___ | ___ | - | ___ | ___ | - | ___ | ___ | \| | ___ | \| | ___ | ___ | ___ | ___ |
| Surname code | | | | | Date of birth | | | | | | | | | Gender | | Social Security Number (Last four digits) | | | |

# Shigellosis in Los Angeles County

In Los Angeles County, most reported cases of shigellosis have been sporadic; the 2000 rate was 9 cases per 100,000 population. Among various risk factors, those that have been implicated most frequently include sexual contact between men, travel to countries where shigellosis is endemic and recreational water exposure in areas not designated for swimming or wading. Less frequent causes have included restaurant-related outbreaks due to infected food-handlers and daycare and institutional outbreaks associated with inadequate handwashing. There have been situations when several members of a single or extended household were infected since secondary attack rates can reach as high as 40%, especially where there are young children in diapers.

Since the 1970s, men who have sex with men have had higher reported rates of shigellosis because behaviors such as oral-anal or anal sex increase the risk of contact with fecal material. It is possible that an untreated individual who has recently recovered from shigellosis may continue to shed organisms for up to four weeks after recovery. Therefore, the individual may feel well enough to resume sexual activities and spread disease to sexual partners. Since low numbers of organism are sufficient for transmission, sexual activity is ideal for transmission.

The incidence of shigellosis peaks during the summer months. This may be related to increased travel (since shigellosis is endemic in countries where water supplies are not properly protected from contamination with human sewage), entertainment of visitors from other countries and visiting crowded areas with limited handwashing facilities. In addition, during summer months, cases may be caused by swimming or wading in areas not designated for these activities. Such areas may look inviting and safe, however, they are not routinely maintained for swimming activities. The water is not checked for contaminants and is not chlorinated, and there are usually no toilet or waste facilities provided. Shigellosis may also be associated with home wading pools since most are not super-chlorinated (municipal water chlorine levels are insufficient to counter gross fecal contamination).

***The incidence of shigellosis peaks during summer months.***

## Prevention

### Educate patients experiencing diarrhea

Health care professionals must counsel any person with diarrhea to practice meticulous handwashing to prevent the spread of disease. Inform patients that, even though they feel better, they may still be able to transmit disease to others, especially when preparing food. In addition, all patients must be warned to practice safe sex under all conditions, and patients with diarrhea should avoid activities that may increase exposure to fecal material for at least 7 days after symptoms have stopped. Washing of hands and other body parts before, during and after sex is recommended.

### Educate travelers

Anyone traveling to countries with endemic shigellosis must be educated to avoid using untreated water for drinking or oral care. Travelers should only consume cooked foods, bottled beverages, and produce that they can wash and peel themselves. Foods or drinks made with unpasteurized juices or milk are particularly risky and should be avoided. Ice or homemade beverages may be risky because they may be made using untreated water; freezing does not inactivate most bacterial, viral or parasitic pathogens.

### Educate swimmers

Families should avoid swimming or wading in non-designated areas and no one should swim or wade while ill with diarrhea, especially young children. Children in diapers should not be permitted in public swimming pools. Children must be warned to not swallow water while swimming or wading.

### Emphasize handwashing

Handwashing is basic to preventing disease. Healthcare providers should emphasize handwashing in all situations for people of all ages.

### Report, report, report

Timely reporting and early counseling enables prompt preventive actions that can interrupt and stop spread of communicable disease.

### *Shigella Characteristics*

- **Agent:** gram-negative bacillus with four serogroups *Shigella dysenteriae* (group A), *S. flexneri* (group B), *S. boydii* (group C) and *S. sonnei* (group D)
- **Transmission:** fecal-oral including direct person-to-person physical contact, including sexual behaviors; or indirectly via contaminated food, water or objects. Infection can occur with as few as 10 to 100 organisms
- **Symptoms:** fever, diarrhea (sometimes bloody), abdominal cramps, headache and tenesmus. Complications are rare but may include Reiter syndrome (*S. flexneri*), hemolytic-uremic syndrome and toxic megacolon (*S. dysenteriae*)
- **Treatment:** fluid and electrolyte replacement is important if there are signs of dehydration; antibiotics may shorten the duration and severity of illness as well as the duration of pathogen excretion

***To report diseases and outbreaks, contact Communicable Disease Reporting System Hotline at: (888) 397-3993***

# Sudden Infant Death Syndrome (SIDS)

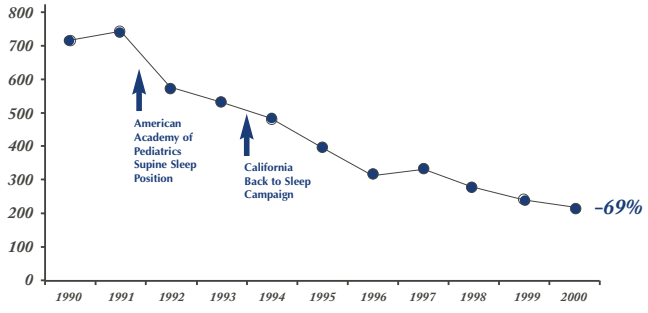
Sudden Infant Death Syndrome (SIDS) is defined as the unexpected death of an infant under one-year of age which remains unexplained after performance of a complete post-mortem investigation, including an autopsy, examination of the death scene, and review of the case history. For nearly 3,000 years, it has been recognized that apparently healthy infants could die suddenly and unexpectedly during their sleep. Historically, it was believed that these infants somehow suffocated, either by maternal overlay or by strangling in bedclothes. Although these explanations have largely been discarded, SIDS remains the most common cause of death in infants between the ages of one-month and 8 months, affecting nearly one out of every 1,000 live births.

In 1994, a very successful preventive education campaign was launched in California. Known as "Back To Sleep," the promotion of supine sleep position is primarily credited with reducing the SIDS rate from 1.0/1,000 births in 1994 to 0.5/1,000 births in 1999. The American Academy of Pediatrics formally recommends supine sleeping. The number of SIDS deaths in Los Angeles County in 2000 was 86% less than the number in 1990. This decrease is attributed to the increased use of SIDS risk reduction practices.

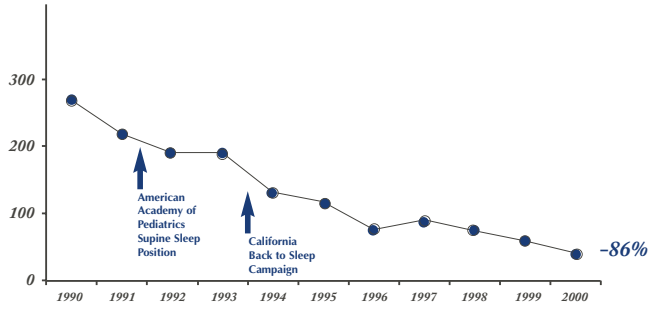
**California and Los Angeles County Sudden Infant Death Syndrome (SIDS) deaths, 1990-2000**

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CA | 717 | 725 | 568 | 545 | 486 | 397 | 311 | 329 | 259 | 237 | 222 |
| LAC | 252 | 208 | 177 | 176 | 120 | 107 | 82 | 87 | 69 | 46 | 34 |

**SIDS Deaths 1990 - 2000, California**




**SIDS Deaths 1990 - 2000, Los Angeles County**




***In 1998, the California Health and Safety Code was amended to require hospitals and midwives to provide SIDS risk reduction information, including the supine sleeping recommendation, to parents and guardians of newborns.***

The etiology of SIDS is unknown. The post-mortem exam does not identify a conventionally accepted cause for the death in 80-85% of infants who die suddenly or unexpectedly. The autopsy shows the absence of other serious or contributory illnesses. Common post-mortem findings, however, include intrathoracic petechiae; pulmonary congestion and edema; minor airway inflammation; minimal stress effects in the thymus and adrenal glands; normal nutrition and development; fluid blood; and an empty urinary bladder. The significance of the latter four of these findings is that these infants were generally healthy prior to death.

Epidemiologic studies have failed to identify one specific cause of SIDS. Maternal risk factors felt to be contributory include: cigarette smoking or substance abuse during pregnancy; teen-aged, older, or unmarried mothers; birth order; short inter-pregnancy intervals; delay in initiating prenatal care; low blood pressure during the third trimester; high or low hemoglobin during late gestation; and lower socioeconomic groups. African-Americans have a disproportionately higher rate of SIDS and use the prone sleeping position more than other groups. Infant risk factors include: preterm birth, low birthweight, multiple gestation, prone sleeping, and exposure to air pollution or second-hand smoke.

Studies have found aspiration events occur with babies placed on their bellies. Prone sleeping does not prevent aspiration. Since babies breathe with their abdomens, it takes more effort for them to breathe when prone. Babies also breathe irregularly, especially when sleeping. This lower respiratory apnea comes from the brain stem. One theory is that for some babies, instead of breathing stronger when there is an accumulation of carbon dioxide in the blood stream, the apnea becomes dominant and a downward spiral into hypoxia and metabolic acidosis ensues. Upper airway obsructive apnea is seen as a risk factor that can precipitate a hypoxic SIDS event. Special monitors can differentiate between lower and upper respiratory apnea.

Lack of air circulation caused by soft or fluffy bedding can also create an accumulation and rebreathing of carbon dioxide around the child's head. Likewise, being in a non-infant bed, e.g., against the back of a sofa, or next to another person in bed, can create a pocket of air with inadequate oxygen. If this occurs with an apneic event, hypoxia can ensue.

**Continued on page 7**

# PERTUSSIS RATES INCREASING AMONG UNVACCINATED INFANTS

With the recent report of a second infant death due to pertussis this year in Los Angeles County, it is important that health care providers increase their awareness of and vigilance for this disease. Pertussis (whooping cough), first described in the 1500s, became endemic in Europe by the 1600s.[1] The causative agent, *Bordetella pertussis*, was not isolated until 1906 by Jules Bordet and Octave Gengou.[2] This agent, a gram-negative pleomorphic bacillus, requires special media (Bordet-Gengou or Rean-Lowe) to culture because of its fastidious nature.

Prior to the development and widespread use of the whole cell pertussis vaccine, pertussis was considered a "right of passage" of childhood in the U.S. with the annual number of reported cases approaching 270,000 and the annual number of deaths approaching 10,000.[2] By the 1970s, a 99% reduction in the annual incidence of pertussis had been achieved and only 1,010 U.S. cases were reported in 1976.[2]

However, especially since the 1990s, the incidence of pertussis has been on the increase with epidemic peaks occurring every 2-5 years. The 7,867 annual U.S. cases in 2000 represented almost an 800% increase over the 1,010 cases in 1976. The incidence of pertussis in Los Angeles County has mirrored that for the nation with an average of 100 annual cases being reported for the period 1990 through 2000. There was a dramatic increase to 236 reported cases in 1999, which dropped to 102 cases in 2000 and 99 provisional cases in 2001.

Based on national data, the incidence of pertussis is increasing among infants too young to have received the vaccine, while the incidence among infants aged 1-4 years has decreased.[3] Because infants too young to have received protection by vaccination have the highest complication and death rates from pertussis, increased efforts must be made to protect these infants by preventing their exposure to communicable pertussis cases. This can be achieved through the following activities:

1. **Immunize infants at the first opportunity, in accordance with the recommended Advisory Committee on Immunization Practices (ACIP) schedule for receipt of the vaccine.**
   Before the widespread use of immunizations, children ages 1-4 had the highest incidence of pertussis and were effective transmitters of the disease to others. The immunization of infants beginning at 2 months of age has resulted in a 99% decrease in the incidence of reported pertussis over the past 50 years and it continues to be the mainstay of pertussis prevention programs. The acellular pertussis vaccines, which have been available in the U.S. since 1996, are associated with significantly fewer side effects than the whole cell vaccine and are very efficacious in preventing pertussis disease.

   Because it takes three doses of the vaccine to achieve adequate protection, infants immunized on time would not be expected to have protective immunity until after the third shot, usually received around 6 months of age. Booster doses are also required to maintain immunity throughout childhood. Any delay in the completion of the primary immunization series puts infants at needless risk for pertussis.

2. **Increase suspicion for, and the diagnosis of, pertussis among all age groups, especially infants in the first months of life, and immunized adolescents and adults whose immunity to pertussis may have waned.**
   Pertussis should be considered in any adolescent or adult who presents with a persistent cough illness of 2 weeks or more, associated with or without coughing paroxysms. *Bordetella pertussis* is estimated to account for up to 7% of cough illness per year in older persons.[4] Although a positive direct flourescent antigen (DFA) or similar direct antigen assay can be helpful, the poor specificity and sensitivity of these tests limit their diagnostic usefulness.[5] The only acceptable tests for lab confirmation of pertussis are a bacterial culture or a polymerase chain reaction (PCR) (if patient meets clinical pertussis criteria), both performed on nasopharyngel secretions. Culture or PCR should be attempted on all suspect pertussis cases as tests can still be positive more than 3 weeks after onset of the cough illness.[5]

3. **Alert public health officials of all suspect pertussis cases immediately.**
   The California Code of Regulations (Title 17, Section 2500) mandates that all cases or suspected cases of pertussis be reported within 1 working day of diagnosis. Nonetheless, underreporting of pertussis occurs. A

***Since the 1990s, the incidence of pertussis has been on the increase with epidemic peaks occurring every 2-5 years.***

**Continued on page 7**

## Pertussis (from page 6)

recent local study by the LAC Immunization Program documented 23% to 36% under-reporting of hospitalized pertussis cases. Providers should report a suspected case to the local health department (for Los Angeles County residents contact the Los Angeles County Department of Health Services at 888-397-3993 or 213-351-7440) even before laboratory test results are available. Early reporting of suspect cases allows for the identification of all asymptomatic contacts to the case and their protection through the timely initiation of appropriate antibiotic prophylaxis. Early reporting also allows for the identification of other unrecognized cases and the initiation of treatment to rapidly reduce the period of communicability.

**4. Restrict contact that persons with unexplained and untreated cough illnesses (including family members) have with newborn and other susceptible infants.**

A significant number of infant pertussis cases result when a household adult family member with disease has close contact with a newborn infant.[5] Maternal and child health care providers can play an important role in educating parents-to-be, as well as new parents, about the potential for transmission of pertussis from coughing adults and adolescents to un-immunized or under-immunized infants.

Greater attention to the above four interventions will greatly reduce the incidence of pertussis and its complications, including death, in Los Angeles County. For additional information about pertussis, please refer to the Immunization Program web site at: **www.lapublichealth.org/ip/vpds/pertussis.pdf.**

### References:


1. Long SS, Pickering LK, Prober CG. *Principles and Practice of Pediatric Infectious Diseases*. New York, Churchill Livingston Inc., 1997.
2. Plotkin SA, Orenstein WA. *Vaccines*. Philadelphia, W.B. Saunders Company, 1999.
3. CDC. Pertussis-United States, 1997-2000. MMWR 2002;46:73-76.
4. CDC. Epidemiology and Prevention of Vaccine-Preventable Diseases. CDC: Atlanta, 2002.
5. CDC. Guidelines for the Control of Pertussis Outbreaks. CDC: Atlanta, 2000.


## SIDS (from page 5)

The majority of SIDS deaths occur during the winter when windows are kept closed, the heat is on, and the baby is bundled up and has more covers than may be necessary. Lack of air circulation, increased $CO_2$, and overheating are all factors. The guideline is not to dress or cover a baby any more than a person would themselves.

In spite of the implementation of all the SIDS risk reduction practices a SIDS event can still occur. Yet, the reduction in SIDS deaths since the inception of SIDS risk reduction recommendations indicates that we are on the right track.

### SIDS Program of Los Angeles County

Prevention of SIDS is the primary goal of the SIDS Program of Los Angeles County. Funded by the California Department of Health Services SIDS Program, the county's program strives to increase awareness by providing consultation, education materials, and training to community and professional groups. Supporting a healthy grief process is the prevention intervention mandated by the California legislature in 1991. A public health nurse contacts the family, childcare provider, or guardian of an infant who has unexpectedly died, presumably of SIDS, within three days of receiving a referral from the program office. The purpose of a home visit is to assess the family's adaptation to the tragedy and to provide grief counseling and referral to bereavement support groups.

In 1998, the California Health and Safety Code was amended to require hospitals and midwives to provide SIDS risk reduction information, including the supine sleeping recommendation, to parents/ guardians of newborns. Often there are cultural barriers to overcome when educating both professionals and clients about the importance of the back sleeping position. It is critically important that nurses working in newborn nurseries place babies on their backs, and that parents witness the actual practice of what they are being advised to do upon discharge. Placing a baby on his or her side with an arm extended or a wedge to prevent rolling prone is not advisable. Breastfeeding should also be encouraged since breastfed babies are generally healthier and studies have shown that breastfeeding may reduce the risk of SIDS. With hospitals, providers, community based agencies, and others working together to promote risk reduction education and practices, the rate of SIDS deaths can be further reduced.

# Calendar

### Immunization Update 2002

This live satellite broadcast and webcast will provide up-to-date information on the rapidly changing field of immunization. Anticipated topics include: influenza vaccine, including new recommendations for vaccination of healthy children; the national vaccine shortage situation, hepatitis B vaccine, the recent revision of the ACIP General Recommendations on Immunization, smallpox vaccine recommendations, immunization registries, and recent vaccine safety issues.

Flyer and registration available at http://www.phppo.cdc.gov/phtnonline/

Target audience: Immunization providers including physicians, nurses, physician assistants, nurse practitioners, pharmacists, students, and DOD paraprofessionals.

Date: Thursday, August 15, 2002
Time: 10:00 a.m. – 12:30 p.m. (Sign-in at 9:30 a.m.)
Place: DHS Auditorium
313 North Figueroa Street • Los Angeles, CA 90012
Contact: (213) 351-7800
CEU Credits: 2.5 Hours

## This Issue . . .


HIV Infection Case Reporting ..... 1
Routine Vaccination Schedule ..... 1
Shigellosis in Los Angeles County ..... 4
Sudden Infant Death Syndrome (SIDS) ..... 5
Pertussis Rates Increase ..... 6


***Special Insert:*** *Evaluating the Patient with an Acute, Generalized Vesicular or Pustular Rash Illness and Determining the Risk of Smallpox*
*( Reprinted from CDC to assist clinicians in differential diagnosis of smallpox)*

# THE PUBLIC'S HEALTH

Newsletter for Medical Professionals in Los Angeles County


COUNTY OF LOS ANGELES
DEPARTMENT OF HEALTH SERVICES
**Public Health**

313 North Figueroa Street, Room 212
Los Angeles, California 90012


## Selected Reportable Diseases (Cases)[1] - April and May 2002

| Disease | THIS PERIOD | SAME PERIOD LAST YEAR | YEAR TO DATE | | YEAR END TOTALS | | |
|---|---|---|---|---|---|---|---|
| | April~May 2002 | April~May 2001 | 2002 | 2001 | 2001 | 2000 | 1999 |
| AIDS[2] | 272 | 184 | 694 | 533 | 1,415 | 1,652 | 1,876 |
| Amebiasis | 18 | 15 | 44 | 43 | 136 | 116 | 142 |
| Campylobacteriosis | 132 | 175 | 353 | 384 | 1,084 | 1,332 | 1,100 |
| Chlamydial Infections | 5,551 | 5,706 | 14,066 | 13,767 | 32,784 | 30,642 | 27,561 |
| Encephalitis | 12 | 4 | 24 | 22 | 44 | 51 | 7 |
| Gonorrhea | 1,052 | 1,314 | 3,045 | 3,256 | 7,800 | 7,212 | 6,053 |
| Hepatitis Type A | 93 | 79 | 249 | 220 | 517 | 1,025 | 1,258 |
| Hepatitis Type B, Acute | 19 | 15 | 42 | 15 | 56 | 72 | 282 |
| Hepatitis Type C, Acute | 5 | 2 | 21 | 7 | 11 | 32 | 696 |
| Measles | 0 | 5 | 0 | 5 | 8 | 5 | 1 |
| Meningitis, viral/aseptic | 92 | 75 | 230 | 175 | 534 | 491 | 390 |
| Meningococcal Infections | 12 | 11 | 29 | 39 | 53 | 53 | 49 |
| Mumps | 13 | 0 | 14 | 0 | 17 | 29 | 24 |
| Non-gonococcal Urethritis (NGU) | 166 | 236 | 568 | 614 | 1,423 | 1,575 | 1,742 |
| Pertussis | 14 | 9 | 59 | 27 | 100 | 102 | 237 |
| Rubella | 0 | 0 | 0 | 1 | 0 | 3 | 0 |
| Salmonellosis | 105 | 160 | 333 | 298 | 893 | 1,119 | 1,027 |
| Shigellosis | 74 | 70 | 236 | 157 | 596 | 878 | 687 |
| Syphilis, primary & secondary | 34 | 32 | 101 | 68 | 184 | 136 | 88 |
| Syphilis, early latent (<1 yr.) | 11 | 33 | 92 | 66 | 209 | 194 | 335 |
| Tuberculosis | 143 | 118 | 290 | 268 | 1,046 | 1,065 | 1,170 |
| Typhoid fever, Acute | 3 | 8 | 8 | 10 | 24 | 25 | 16 |

1. Case totals are provisional and are subject to change following publication.
2. Case totals are interim and may vary following periodic updates of the database.

Data provided by DHS' Public Health programs: Acute Communicable Diseases Control, Data Collection & Analysis, HIV/Epidemiology, Sexually Transmitted Diseases, and Tuberculosis Control.

# EVALUATING THE PATIENT WITH AN ACUTE, GENERALIZED VESICULAR OR PUSTULAR RASH ILLNESS AND DETERMINING THE RISK OF SMALLPOX

Many rash illnesses can present with vesicles and pustules. The purpose of this protocol is to provide a systematic approach to evaluating patients with generalized rash illnesses that will direct an appropriate clinical and public health response.

Clinicians who evaluate patients with rash illnesses need to be able to determine quickly if their patient may have smallpox. There are millions of cases of rash illness in the United States each year. Because there is no evidence that smallpox is being transmitted, the risk of smallpox is currently extremely low. For this reason, the focus is on identifying a classic case of smallpox. This means that the first case of smallpox might not be recognized in the first few days after rash onset when the presentation is non-specific. With appropriate infection control procedures, the risk of smallpox transmission from an infected patient is low.

***Clinical case definition for smallpox: an illness with acute onset of fever >101°F followed by a rash characterized by firm, deep-seated vesicles or pustules in the same stage of development, without other apparent cause.***

**Definitions:**

*Smallpox* is infection with the variola virus.

*Chickenpox (varicella)* is primary infection with the varicella-zoster virus (VZV), which thereafter remains dormant in the body for life.

*Shingles (herpes zoster)* is reactivation of dormant varicella-zoster virus.

***ALWAYS WEAR A PROPERLY FITTED N95 (OR HIGHER QUALITY) RESPIRATOR, GLOVES AND GOWN WHEN EVALUATING A PATIENT WITH VESICULAR OR PUSTULAR RASH ILLNESS THAT COULD BE SMALLPOX.***

This case definition would not detect an atypical presentation of smallpox including hemorrhagic smallpox and flat-type (velvety) smallpox. In addition, given the extremely low likelihood of smallpox occurring, a case definition has been chosen that provides a high level of specificity (i.e., vesicular or pustular rash illness), rather than a high level of sensitivity (i.e., maculo or papular rash illness).

Please refer to the accompanying poster as a guide to evaluating patients with acute, generalized rash illnesses for smallpox.

The most common rash illness likely to be confused with smallpox is chickenpox (varicella). Table 1 (page A3) lists characteristics that may be helpful in differentiating the two illnesses. Some other illnesses and conditions to consider in the differential diagnosis are shown in Table 2 (page A4).

***Contact and Airborne Precautions:*** If a patient presents to an emergency department or clinic with an acute generalized vesicular or pustular rash illness, care should be taken to decrease the risk of disease transmission. The patient should not be left in common waiting areas but placed immediately in a private, negative airflow room with the door kept closed. If the patient is being admitted or held for observation, institute appropriate airborne and contact precautions and alert the infection control department. These precautions include:

- Patient should be placed in a private, negative airflow room (airborne infection isolation). Keep the door closed at all times, except when staff or the patient must enter or exit.
- Staff and visitors should wear respirators (N95 or higher quality), gloves and gowns.
- Patient should wear surgical mask whenever he/she must be outside of their negative pressure isolation room and must be gowned or wrapped in a sheet so that the rash is fully covered.

***History and Physical Examination:*** Ask detailed questions about any symptoms preceding rash onset, including prodromal symptoms and clinical features in the 1-4 days before rash onset, contact with any ill individuals (especially those with a rash illness), history of prior varicella or herpes zoster, and history of varicella vaccination (vaccine available since 1995). In persons born before 1972, as well as those who served in the military or ever worked in medical laboratories, ask about smallpox vaccination and look for a vaccination scar (U.S. children were routinely vaccinated until 1971, military personnel until 1990, and persons working with orthopoxviruses continue to be vaccinated). In addition, determine if the patient is immunocompetent, which medications (prescription and over-the-counter) the patient has taken, and whether and where the patient has travelled.

This information will be helpful in evaluating the patient and determining which illnesses are in the differential diagnosis. If smallpox is a consideration, it will be used to classify a case patient into low, moderate or high risk categories for smallpox.

## CRITERIA FOR DETERMINING RISK OF SMALLPOX

| | |
|---|---|
| High Risk | Meets all three major smallpox criteria |
| Moderate Risk | Febrile prodrome and 1 other major smallpox criterion<br>OR<br>Febrile prodrome and >4 minor smallpox criteria |
| Low Risk | No febrile prodrome<br>OR<br>Febrile prodrome and <4 minor smallpox criteria |

## MAJOR DIAGNOSTIC CRITERIA

1. Febrile prodrome: occurring 1-4 days before rash onset: fever >101˚F and at least one of the following: prostration, headache, backache, chills, vomiting or severe abdominal pain
2. Classic smallpox lesions: deep-seated, firm/hard, round, well-circumscribed vesicles or pustules; as they evolve, lesions may become umbilicated or confluent
3. Lesions in the same stage of development: on any ONE part of the body (i.e. the face, or the arm) all the lesions are all in the same stage of development (i.e. all are vesicles or all are pustules)

## MINOR SMALLPOX CRITERIA

1. Centrifugal distribution: greatest concentration of lesions on face and distal extremities
2. First lesions on the oral mucosa/palate, face, or forearms
3. Severity: patient appears toxic or moribund
4. Slow rash evolution: lesions evolved from macules to papules to pustules over days (each stage lasts 1-2 days)
5. Lesions on the palms and/or soles

## Table 1. Differentiating smallpox (variola) from chickenpox (varicella)

| Characteristic | Smallpox (variola) | Chickenpox (varicella) |
|---|---|---|
| Febrile prodrome | Severe prodrome 1- 4 days before rash onset with temperature > 101 °F ( usually 102- 104°F) and systemic complaints ( prostration, headache, backache, chills, vomiting, abdominal pain) | Children rarely have a prodrome; older children and adults may have a mild prodrome with low grade fever and/ or malaise for 1- 2 days before rash onset |
| Appearance of lesions | Hard/ firm, well circumscribed pustules; may become confluent or umbilicated | Superficial vesicles with surrounding erythema |
| Stage of lesions on any one part of the body | All lesions are in the same stage of development on any one part of the body | Lesions in different stages of evolution ( within 24 hours of rash onset there are papules, vesicles, and crusts) |
| Distribution of the rash on the body | Centrifugal distribution: lesions concentrated on the face and distal extremities; fewer lesions on the trunk | Centripetal distribution: lesions concentrated on the trunk with fewer lesions on the extremities; face and scalp frequently involved |
| Initial lesions | Oral mucosa, face or forearms | Face then trunk |
| Oral lesions | Yes – early on ( may not be noticed by patient) | May occur |
| Severity of illness | Patients generally very ill; may be toxic or moribund | Most patients not severely ill; may be febrile, rarely critically ill unless complications develop |
| Rate of evolution of rash | Slow evolution: each stage of rash lasts 1- 2 days | Rapid evolution: lesions evolve from macules to papules to crusted lesions in < 24 hours |
| Lesions on palms or soles | Seen in the majority of cases | Occurs very rarely |
| Hemorrhagic lesions | Occurs in highly lethal variant of smallpox | Can occur |
| Exposure to varicella or herpes zoster | N/ A | 50- 80% of cases are aware of an exposure to chickenpox or shingles 10- 21 days before rash onset |
| History of prior chickenpox | N/ A | Second cases very rare – makes varicella less likely |

## GUIDANCE FOR CLINICAL AND PUBLIC HEALTH MANAGEMENT

***Moderate and high risk*** – notify hospital infection control, obtain infectious diseases and/or dermatology consultation urgently (if available), proceed with laboratory testing for confirmation or exclusion of varicella or other diagnoses in the differential diagnosis. Initiate treatment for likely etiology as clinically indicated. Preferred tests for rapid identification of varicella-zoster virus are discussed below.

If high risk after consultation with infectious diseases or dermatology specialist:

1. Classify as a suspected smallpox case (**a suspected smallpox case is a medical and public health emergency**).
2. Report suspected case immediately to **Acute Communicable Disease Control (ACDC)**
   **Business Hours: (213) 240-7941 • After Hours: (213) 974-1234**
3. ACDC will evaluate case; if ACDC determines the case to be high risk for smallpox, ACDC will contact CDC for assistance including specimen collection and testing.
4. If possible, take digital photos for consultation with experts.
5. Treat patient as clinically indicated. Do not delay treatment for other likely conditions in the differential diagnosis while awaiting response team.

## Table 2. Common conditions that might be confused with smallpox *

| Condition | Clinical Clues |
|---|---|
| Varicella ( primary infection with varicella-zoster virus) | Most common in children < 10 years; children usually do not have a viral prodrome |
| Disseminated herpes zoster | Immunocompromised or elderly persons; rash looks like varicella, usually begins in dermatomal distribution |
| Disseminated herpes simplex | Lesions indistinguishable from varicella; immunocompromised host |
| Impetigo ( Streptococcus pyogenes, Staphylococcus aureus ) | Honey- colored crusted plaques with bullae are classic but may begin as vesicles; regional, not disseminated; patients generally not ill |
| Drug eruptions | Exposure to medications; rash often generalized |
| Contact dermatitis | Itching; contact with possible allergens; rash often localized in pattern suggesting external contact |
| Erythema multiforme minor | Target, "bull 's eye " or iris lesions; ; often follows recurrent herpes simplex virus infections; may involve hands and feet ( incl. palms and soles) |
| Erythema multiforme major ( Stevens-Johnson Syndrome) | Major form involves mucous membranes and conjunctivae; there may be target lesions or vesicles |
| Enteroviruses incl. Hand, Foot and Mouth disease | Summer and fall; fever and mild pharyngitis 1- 2 days before rash onset; lesions initially macu-lopapular but evolve into whitish- grey, tender, flat often oval vesicles; peripheral distribution ( hands, feet, mouth) or disseminated |
| Scabies; insect bites ( incl. fleas) | Itching is a major symptom; patient is not febrile and is otherwise well |
| Molluscum contagiosum | May disseminate in immunosuppressed persons; rash is chronic and does not evolve |

* Variant presentations of smallpox: a small percentage of persons will present with hemorrhagic smallpox (can be mistaken for meningococcemia) or with flat- type smallpox. Both variants are highly infectious and carry a high mortality.

## LABORATORY TESTING OF SPECIMENS FOR VARICELLA-ZOSTER VIRUS (VZV)

**IMPORTANT:** Collect >3 good specimens from each patient for routine and confirmatory testing. No test can distinguish between chickenpox (varicella) and disseminated shingles (disseminated herpes zoster) since the same virus causes both conditions. Herpes zoster is a reactivation of the virus that persists in a dormant state in the body from the time of initial infection with chickenpox. The two conditions are distinguished on the basis of prior evidence of immunity or previous disease and careful history.

Preferred tests for rapid diagnosis of varicella-zoster virus:

1. Direct fluorescent antibody (DFA) - rapid method for detecting VZV directly in skin cells using anti-VZV antibody conjugated to fluorescein dye; this technique is very sensitive and specific, but is critically dependent on careful specimen collection.
2. Indirect fluorescence antibody (IFA) - similar to DFA.
3. Polymerase chain reaction (PCR) of vesicular fluid or scabs is one of the most sensitive and specific methods available; it has the shortcoming of requiring 8-12 hours to perform using specialized equipment. It is not widely available, though some laboratories and tertiary care hospitals have this capability.

**For specific instructions on specimen collection, please call the Public Health Laboratory, (213) 250-8619.**