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CRKP, an Emerging Threat

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Carbapenem-resistant *Klebsiella pneumoniae* (CRKP) is a multidrug-resistant organism that is rapidly emerging worldwide. In the United States, it was first described in North Carolina in 1996.^{1,3} This gram-negative bacteria made the news internationally in 2006 when it quickly spread through hospitals in Israel, infecting approximately 700 patients.^{1,2} Today, CRKP maintains a global presence, including in Los Angeles County.

CRKP causes serious healthcare-associated infections, including pneumonia and bloodstream, wound, and surgical site infections. It is associated with higher mortality and morbidity, has caused large nosocomial outbreaks, and has become endemic in hospitals in the northeastern United States.^{2,6} Transmission can be from person to person through the contaminated hands of health care personnel or through contamination of the environment.

Normally, these bacteria are found in human intestines and in the stool where they do not cause disease. However, CRKP has become an important challenge in health care settings because the bacteria produce an enzyme, carbapenemase, that causes resistance to almost all available antibiotics, including cephalosporins, penicillins, aztreonam, and carbapenems, leaving few antibiotics to treat the bacteria effectively.^{3,6} Its potential for health care transmission and the ability to cause significant morbidity and mortality among the critically ill and long-term care patients requires coordinated efforts to identify, monitor, and prevent the spread of disease.

Epidemiology

In June 2010, CRKP became reportable by laboratories in Los Angeles County. Although it was initially thought to be rare in the county, during the surveillance period of June 2010 to May 2011, 667 confirmed cases of CRKP were identified. Of these cases, 387 were reported from general acute care hospitals (excluding long-term acute care [LTAC] facilities) at a rate of 0.31/1,000 patient days, while 231 were reported from LTAC facilities at a rate of 2.54/1,000 patient days.

LA County has 102 acute care hospitals, 8 of which are LTAC facilities. The Department of Public Health's local data confirms the presence of higher rates of CRKP among patient populations in LTACs. More than half of the cases reported, 374 (56%), were female. The mean age of patients who tested positive for CRKP was 73 years old and ranged from 1-103 years old. Of the 587 specimens submitted with the date of admission, 355 (60.5%) had hospital onset or healthcare-associated transmission, which was defined as a positive culture identified more than 3 days following admission. The remaining specimens 232 (39.5%) were collected less than 3 days after admission and were indicated as community onset from other healthcare facilities (e.g., skilled nursing facilities). CRKP-positive specimens included urine (309 specimens), followed by sputum (178), wound (76), blood (53) and other types of specimens (47).

Clinical Significance

CRKP infections are seen primarily in chronic, debilitated, critically ill intensive care unit patients; those receiving lengthy courses of broad spectrum antibiotics; elderly patients from nursing homes or those frequently

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hospitalized; long-term care patients exposed to invasive devices such as mechanical ventilators, central venous lines, or urinary catheters; and immunocompromised individuals. Colonized patients without any signs and symptoms can also be a source of transmission.

Diagnostic Test

Cultures with sensitivities are the primary method of diagnosis. A revised 2011 Clinical and Laboratory Standards Institute recommendation for antimicrobial susceptibility testing⁴ states new interpretive criteria for carbapenems. The initial screening test and the confirmatory test (i.e., modified Hodge test) are no longer necessary due to lowered minimum inhibitory concentrations for routine patient testing but may be useful for testing isolates for epidemiological or infection control purposes.

Treatment

CRKP is a highly resistant organism with few available antibiotic treatment options. This organism has demonstrated *in vitro* susceptibility to polymyxins B and E (colistin) and tigecycline.^{5,6} However, patients should be carefully monitored during therapy with these agents for adverse reactions. For example, polymyxins are known to have a high rate of nephrotoxicity, and tigecycline is associated with a high rate of nausea, vomiting, diarrhea, and liver effects.^{3,5} Colistin combination therapy as an alternative treatment may have an additive effect, but further studies are needed to determine the efficacy of this treatment.⁶

Antimicrobial Stewardship

Inappropriate use of antibiotics has long been associated with antimicrobial resistance, toxicity, extended patient stays in hospitals and expensive treatments, as well as the threat of the spread of resistant bacteria, especially in health care settings. Improving the use of antibiotics through comprehensive antimicrobial stewardship programs should be the goal of all clinicians and institutions to help address the problem of CRKP in health care settings and to ensure the continued efficacy of available antimicrobials. To address this problem, the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America have created Guidelines for Developing an Institutional Program to Enhance Antimicrobial Stewardship.⁷

Guidance from the CDC and the Healthcare Infection Control Practices Advisory Committee

Primary care physicians should adopt aggressive infection control strategies to prevent and control CRKP. The following guidance is adapted from the Centers for Disease Control and Prevention and the Healthcare Infection Control Practices Advisory Committee⁸:

- Implement contact precautions for all patients who are colonized or infected with CRKP.
- Follow Clinical and Laboratory Standards Institute guidelines for susceptibility testing and establish a protocol to

detect nonsusceptibility and carbapenemase production in Enterobacteriaceae.

- Contact the local health department when an outbreak is identified or suspected.
- Optimize safe and appropriate use of antibiotics.⁹
- Limit the use of invasive devices: Insert catheters only when indicated and remove them as soon as possible; use aseptic technique and sterile equipment; and maintain a sterile, closed system for urinary catheters.⁹
- Enhance communication to ensure proper infection control practice when patients are transferred between levels of care.⁹

For the safety of patients, both clinicians and public health authorities in LA County and abroad must ensure accurate laboratory identification of this pathogen, recognize patients infected with CRKP in their facilities, perform surveillance cultures if needed, develop antimicrobial stewardship programs, conduct proper infection control practices, limit the use of invasive devices, and ensure that the role in public health is highlighted to assist in coordinating prevention efforts.⁹ Confronting the worldwide spread of CRKP and other multidrug-resistant organisms is a significant challenge, but it is critical to ensure the prevention and control of significant morbidity and mortality of this disease and others. 

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Vaccination

The Right Dose at the Right Time

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The six “rights” of vaccination are recommended practices that can prevent vaccination errors; minimize adverse events; avoid repeat doses; and ensure that the vaccines given are necessary, potent, effective, and safe. Specifically, these rights are the right vaccine, right patient, right documentation, right dosage, right time, and right route.

This article and the accompanying “Ask the Expert” column provide information to help clinicians and other vaccinators provide the right dosage at the right time. For guidance regarding the right vaccine and the right route, see the October 2010 and May 2011 issues of *Rx for Prevention*, respectively, posted at www.publichealth.lacounty.gov/rx.

The Right Dosage

Vaccine-specific recommendations from the Advisory Committee on Immunization Practices (ACIP) provide clear guidance regarding age-appropriate vaccine dosing. These recommendations are posted at www.cdc.gov/vaccines/pubs/ACIP-list.htm. Dosing recommendations can also be found on vaccine package inserts and on the following Immunization Action Coalition’s vaccine dosing summaries:

- Administering Vaccines to Patients of All Ages: Dose, Route, Site, and Needle Size, www.immunize.org/catg.d/p3085.pdf
- Administering Vaccines to Adults: Dose, Route, Site, and Needle Size, www.immunize.org/catg.d/p3084.pdf
- Hepatitis A & B Vaccines: Be Sure Your Patient Gets the Correct Dose, www.immunize.org/catg.d/p2081.pdf.

Vaccine doses should not be spread over multiple visits, even if the total dose received over time equals the dose recommended by ACIP. Lower-than-recommended dosages may result in inadequate protection; therefore, in most cases, unless serologic testing shows an adequate immune response, individuals receiving lower doses should be revaccinated with the recommended dose. However, patients who sneeze while receiving live attenuated influenza vaccine (nasal spray) and infants who regurgitate, spit out, or vomit directly after receiving a dose of rotavirus vaccine do not need to be revaccinated.

Higher-than-recommended dosages by ACIP can lead to excessive local or systemic concentrations of antigens or other vaccine constituents in muscle tissue. Thus, if a patient receives a higher-than-recommended dose, providers should advise the patient (or parent/guardian) about the error, inform him or her of the potential for a more severe local reaction, and discuss the appropriate action to take if such a reaction occurs (e.g., use an over-the-counter nonsteroidal anti-inflammatory/analgesic medication to treat the local pain and swelling). If patients do experience a more severe reaction under

these circumstances, this should be reported to the Vaccine Adverse Event Reporting System, at www.vaers.hhs.gov.

The Right Time

Recommended Age Range

Providing immunizations at the right time is critical to assuring adequate and lasting protection against vaccine-preventable diseases. ACIP’s immunization schedules take into account immune response, effects of maternal antibodies on immune response, safety data, and age-specific risks for contracting a disease and experiencing complications.

In general, vaccines should not be administered earlier than recommended by ACIP. However, in certain instances, some vaccines can be given early to provide a level of protection to persons traveling to countries where the risk of being exposed to a vaccine-preventable disease is greater. For instance, although MMR is not routinely recommended before 12 months of age, ACIP recommends that infants as young as 6 months old who are traveling internationally receive an MMR dose before travel. Children vaccinated early due to travel still need to complete the MMR series, as routinely recommended. The normally recommended first dose of MMR should still be given between 12 and 15 months of age and at least 28 days following the dose given for travel. The normally recommended second dose (the third dose in the case of this traveler) should be given at age 4 through 6 years.¹

Recommended Intervals

In many cases, more than one dose of a vaccine is needed to build an adequate antibody response. When giving doses in a series, whenever possible, providers should adhere to ACIP-recommended intervals, which have the best evidence of efficacy. Minimum intervals, the shortest amount of time between doses that may lead to an adequate immune response, may be considered

- During outbreaks or epidemics
- To catch up patients who are more than one month behind schedule
- For patients who will travel internationally
- For patients who are unlikely to return for remaining doses.

Vaccines should never be given before the minimum interval has been met because vaccine effectiveness may be reduced. However, with the exception of rabies vaccine, doses erroneously given up to 4 days before the minimum interval can be accepted (4-day grace period). Doses given more than 4 days before the minimum interval should be considered invalid and repeated after the minimal interval has passed.²

Longer intervals than recommended between doses are not expected to affect the vaccine seroconversion rate or titers if the remaining recommended doses in the series are received.

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With the exception of oral typhoid vaccine, when doses are delayed, even for years, it is not necessary to restart the vaccine series.² However, remember that vaccines given as post-exposure prophylaxis, such as rabies vaccine, should be given promptly at the recommended intervals, unless minor variations based on practicality are necessary.

Finally, when more than one live vaccine is to be given (e.g., MMR or MMRV, varicella, zoster, and/or live attenuated influenza vaccine), they should be administered at the same visit. If not administered during the same visit, they should be separated by at least 28 days; otherwise, the second vaccine administered is not valid and should be given again, at least 28 days after the invalid dose.² To review a table of ACIP-recommended and minimum intervals, go to www.cdc.gov/vaccines/pubs/pinkbook/index.html.

Conclusion

Providers are encouraged to read the accompanying “Ask the Expert” column, which addresses common questions regarding dosing and timing. Addressing such errors regarding dosing and timing of immunization, as well as routinely following ACIP guidelines, can help ensure an optimal immune response for vaccine doses given and minimize the need to repeat invalid vaccine doses.

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ASK THE EXPERT

Alvin Nelson El Amin, MD, MPH, medical director, Immunization Program, Los Angeles County Department of Public Health, responds to questions about vaccine dosing and timing.



Alvin Nelson El Amin

Q: Several of my patients plan to travel to Europe. What are the vaccination recommendations for these families? Where can I find a list of vaccines recommended for other travel destinations?

A: The CDC recommends that travelers receive routinely recommended vaccines that are due/overdue and consider hepatitis B vaccine if they may be exposed to blood or bodily fluids through sexual contact or medical treatment while traveling. It also strongly encourages all travelers to protect themselves against measles by getting the measles, mumps, and rubella (MMR) vaccine. From January to April 2012, there were more measles cases reported in the United Kingdom than in all of 2011. Other parts of Eastern and Western Europe have also reported increased measles activity in 2012.³ Thus, travelers born after 1956 who do not have evidence of measles immunity should be vaccinated before traveling to any international destination. To identify the specific vaccines that are recommended for each destination, visit the CDC’s website at wwwnc.cdc.gov/travel/destinations/list.htm. Patients who will be traveling internationally should be encouraged to schedule an immunization consult at least 4 to 6 weeks before their trip to

allow sufficient time to build immunity from vaccine doses received.

Q: We administered the second dose of HPV vaccine to a 20-year-old before the minimum interval between the first and second dose was met. How many doses should we give to finish the series?

A: As is the case with all vaccines, the effectiveness of the second HPV vaccine dose may be diminished when given too early. If the minimum interval of 4 weeks between the first and second doses of HPV was not met, the second dose is not valid. Repeat the second dose at least 28 days from the date of the invalid dose and provide the third HPV dose 12 weeks after the valid replacement dose is given.⁴ To avoid future errors, post the list of recommended and minimum intervals in your vaccination area. The list (Appendix A) may be accessed at www.cdc.gov/vaccines/pubs/pinkbook/index.html.

Q: We gave a 22-year old patient with diabetes his first hepatitis B vaccine dose 1 year ago, but he did not return for his next dose until this week. Do we need to restart the vaccine series?

A: No. You do not need to restart the vaccination series. As is the case with all vaccines except for oral typhoid vaccine, there is no maximum interval between doses. Missed vaccine doses should be administered at the earliest opportunity to prevent infection. However, longer intervals are not believed to affect the vaccine seroconversion rate or titers if remaining vaccine doses are

received.⁵ Start where you left off and give doses 2 and 3 at the recommended intervals (see Appendix A, at www.cdc.gov/vaccines/pubs/pinkbook/index.html). Consider implementing a reminder-recall system to bring back patients who are due or overdue for recommended vaccine doses. The California Immunization Registry (CAIR) is an online immunization tracking system available at no charge that can facilitate reminder-recall. For more information, visit <http://cairweb.org> or call the CAIR Helpdesk at (800) 578-7889.

Q: We saw a healthy, 24-month-old child who had only received the 2-month and 4-month vaccines. What is the best and fastest way to get her up-to-date with all of her vaccinations?

A: Unfortunately, this is a common problem. To ensure patients “catch-up” on the routinely recommended vaccines, ACIP suggests using an accelerated immunization schedule based on minimal intervals (see www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html). Vaccine doses should not be administered at less than the recommended minimal intervals or minimum age. Doses administered too close together or before the recommended minimal age may result in a poor immune response, leaving the child susceptible to disease. To reduce the number of injections, consider using licensed combination vaccines, which have been shown to improve the timeliness of vaccines for children who are behind schedule and to increase vaccine coverage levels.² Use CAIR to help determine which doses to administer and the minimal intervals. The registry has a feature to help clinicians and staff determine which vaccines are due using the accelerated schedule, based on the patient’s age and vaccination history. For more information on this feature, contact the CAIR Help Desk at (800) 578-7889.

Q: The number of injections recommended at a single office visit is increasing, and we are running out of injection sites. Should we defer certain vaccines?

A: No, deferring vaccines is not recommended as this leaves the patient vulnerable to disease. ACIP recommends administering all vaccines that are due or overdue on the day of the health care visit to ensure the patient is fully vaccinated by the appropriate age. Two, or if required, more than two injections, can be given into each antero-lateral thigh of an infant, as long as each injection is separated by 1 inch or more. Practices that do not use combination vaccines should consider using them to minimize the number of injection sites during a single clinic visit. Licensed combination vaccines

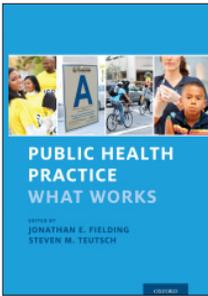
(e.g., Pentacel, Pediarix, Kinrix, Proquad) can be used whenever any of the components of the vaccine are indicated and the other vaccine components are not contraindicated, in accordance with the age and dose restrictions for which they are licensed. Using combination vaccines may also alleviate any concerns parents may have about the number of injections received on the day of the visit. The Vaccines for Children training website, known as EZIZ, contains job aids to assist in navigating the immunization schedule using combination vaccines. Visit <http://eziz.org/resources/vaccine-admin-job-aids/>.

Q: An adult patient received Twinrix (Hep A and B Combo) on an accelerated schedule at 0 and 7 days but did not return to the clinic until 6 months after the second dose. When should we give the remaining Twinrix doses?

A: It is not necessary to restart the series or add an additional dose if the interval is longer than recommended. To complete the series, administer the third dose of Twinrix when the patient returns to the clinic. In this case, the fourth and final dose of Twinrix would be administered a year from the date of the first dose. If Twinrix is not available, single-antigen hepatitis B and hepatitis A vaccines can be used to complete the series. Two doses of hepatitis B vaccine should be administered at least 8 weeks apart. Only a single dose of hepatitis A vaccine is necessary to complete the hepatitis A series. More information on Twinrix and single-antigen hepatitis A and B vaccines is available on the Immunization Program website at www.publichealth.lacounty.gov/ip/vaccine/VaccineFactSheets.htm. 

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Just Published: Department of Public Health Book on Public Health Practices

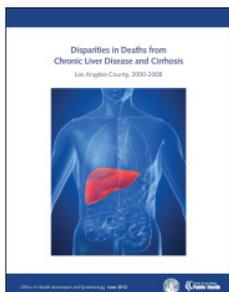
The Los Angeles County Department of Public Health, in partnership with Oxford University Press, has just released “Public Health Practice: What Works.” This 400-page hardcover book includes 37 chapters that use case studies to share lessons the department has learned and

best practices in public health.

The book details both successes and challenges, providing the real-life public health experience in the most populous county in the United States. The book, which is segmented into five categories (core capacities, health promotion, health protection, emergency response, and service delivery), covers dozens of topics such as measuring population health, promoting active living, infection control and outreach to hospitals, food product recalls, employees as first responders, preventing opiate overdose deaths, preconception health, and reducing cases of HIV.

According to the book’s editors, Jonathan E. Fielding, MD, MPH, Director of Public Health and Health Officer, and Steven M. Teutsch, MD, MPH, Chief Science Officer, Los Angeles County Department of Public Health, “Through sharing our department’s day-to-day, practical experiences, we hope to provide other departments as well as policymakers, practitioners, students, and anyone interested in public health with tools for cross-cutting interventions to improve population health.”

“Public Health Practice: What Works” is available from Oxford University Press (www.oup.com/us) and Amazon (www.amazon.com).



Report Focuses on Disparities in Deaths from Chronic Liver Disease and Cirrhosis in LA County

The Los Angeles County Department of Public Health has recently released “Disparities in Deaths from Chronic Liver Disease and Cirrhosis, 2000-2008.” According to this 12-page report, chronic liver disease and cirrhosis is still a leading cause of disease burden in

the county, often affecting people during their most productive years. Despite being a leading cause of death, chronic liver disease is still often under-recognized as an important health issue. Chronic liver disease kills more than 1,100 people in LA County each year, and is especially concerning among men and Hispanics.

The report focuses on the common causes of chronic liver disease, who it most often affects, and how it can be prevented. Chronic liver disease is the ninth leading cause of death in LA County and, between 2000 and 2008, little progress has

been made in reducing chronic liver disease mortality. In fact, there are striking disparities: Deaths from chronic liver disease and cirrhosis are much more common among men, who account for more than two-thirds of deaths (69%), and among Hispanics, who have the highest mortality rates. Liver disease is an overlooked health concern among Hispanics, especially Hispanic males, where chronic liver disease is second only to heart disease as a leading cause of death.

In Los Angeles, the mortality rate among Hispanics (18.4 deaths per 100,000) was five times higher than the rate among Asians/Pacific Islanders, who had the lowest death rate (3.8 deaths per 100,000).

The most common causes of chronic liver disease are preventable: excessive alcohol consumption, chronic infection with viral hepatitis B and/or C, and drug-induced liver damage. Obesity can also increase the risk for developing chronic liver disease by leading to nonalcoholic fatty liver disease, especially if combined with these other risk factors. Excessive alcohol consumption is the most important cause, contributing to two-thirds of chronic liver disease deaths.

During medical visits, clinicians have an opportune time to discuss preventable strategies with patients. These strategies include drinking in moderation, being vaccinated against hepatitis A and B (if indicated), not misusing over-the-counter medications, following instructions when taking prescription medications, and maintaining a healthy body weight.

To read the full report online, go to www.publichealth.lacounty.gov/epi/.



Report Examines Obesity Trends in LA County

In contrast to promising downward trends in child obesity in Los Angeles County, adult obesity in the county continues to steadily increase, according to “LA Health: Trends in Obesity—Adult Obesity Continues to Rise.” This new 6-page report from the LA County Department of Public Health shows

that between 1997 and 2011, the percentage of adults who were obese steadily increased from 13.6% to 23.6%, a 74% relative increase in the obesity rate. Similar obesity increases were seen among men (from 12.9% in 1997 to 23.0% in 2011) and women (from 14.5% in 1997 to 24.2% in 2011). A body mass index of 30.0 or greater is classified as obese, consistent with the federal definition of obesity.

Among the report’s findings:

- Large disparities in obesity rates still exist in LA County. In 2011, the obesity rate was highest among Latinos (31.6%), then African Americans (31.0%), whites (18.0%), and Asians/Pacific Islanders (8.9%).
- LA County residents with less formal education had higher rates of obesity.

- The obesity rate was markedly lower in the West Service Planning Area (9.8%), which includes Malibu, Beverly Hills, and Santa Monica. This is in contrast to the remaining seven Service Planning Areas, none of which had an obesity rate below 20%.
- The percentage of adults diagnosed with diabetes was more than four times greater among those who were obese (18.6%) compared to those who were normal or underweight (4.3%), defined as a body mass index less than 25.0.

The report suggests actions that clinicians can take to help reduce obesity in LA County:

- Include measurement of body mass index as part of all physical exams.

- Counsel all patients who are overweight or obese. Patients with a body mass index of 30 kg/m² or higher should be offered or referred to intensive, multicomponent behavioral interventions.¹
- Establish a referral network for more intensive nutrition and physical activity counseling, group classes, and peer support networks.

The entire report may be accessed at www.publichealth.lacounty.gov/ha. 

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New CDC Recommendations: Test All Baby Boomers for Hepatitis C

Sonali Kulkarni, MD, MPH

Jennifer Felderman, MA

The Centers for Disease Control and Prevention (CDC) recently issued a recommendation that all “baby boomers” (those born between 1945 and 1965) be tested at least once for chronic hepatitis C (HCV) infection due to the frequency and severity of infection in this population, as well as the availability of more effective drug therapy. The CDC reports that the one-time test will identify more than 800,000 HCV infections and could potentially save more than 120,000 lives.

Overall, an estimated 1.3% of the U.S. population (3.2 million persons) is infected with chronic HCV. The estimated prevalence of HCV in baby boomers, however, is more than twice that, at 3.25%. Baby boomers are five times more likely to be infected than other adults and, in LA County, represent 66% of hepatitis C infections.

The vast majority of persons infected with chronic HCV are unaware of their infection and many are unaware of having any risk factors for infection. Left untreated, chronic HCV may result in significant suffering from liver disease, liver cancer, cirrhosis, liver failure, and death. In LA County, there are approximately 134,000 people who are chronically infected with HCV, and local hospitalization rates for HCV or HCV-related complications are the highest among baby boomers.

Primary care providers are well-situated to implement one-time HCV screening as part of routine health care maintenance for baby boomers. Clinics and providers can identify mechanisms to flag these patients, such as through their electronic medical record or a disease management registry, to ensure this recommendation is implemented.

The CDC recommends screening for the presence of hepatitis C antibody, also known as the anti-HCV test. Individuals with a positive anti-HCV test should be counseled that they either have active HCV infection or have had HCV infection in the past that has subsequently resolved. To identify whether the individual has active infection, HCV nucleic acid (also referred to as “HCV RNA”) testing should be performed. If the HCV nucleic acid test is positive, primary care providers should

- Perform further evaluation to determine whether the patient meets clinical criteria for treatment and be referred to a specialist
- Provide hepatitis A and B vaccination, if susceptible
- Discuss ways to protect the liver from damage (such as reducing alcohol use and avoiding new medications that may cause liver damage) and ways to minimize the risk of HCV transmission to others.

In addition to screening baby boomers for HCV, clinicians should continue to screen persons of all ages who 1) have ever injected drugs, 2) are infected with HIV, 3) have laboratory evidence of liver inflammation, 4) have ever received chronic dialysis, 5) have received blood transfusions or organ transplants before 1992, or 6) have received clotting factor concentrates before 1987.

The full report of these recommendations (MMWR, vol. 61, no. 4) may be viewed at www.cdc.gov/mmwr/pdf/rr/rr6104.pdf. 

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Rx for Prevention is published 10 times a year by the Los Angeles County Department of Public Health. If you would like to receive this newsletter by e-mail, go to www.publichealth.lacounty.gov and subscribe to the ListServ for *Rx for Prevention*.

Rx for Prevention

Promoting health through prevention in Los Angeles County

Upcoming Trainings

Immunization Training Resources for Clinicians

The Los Angeles County Department of Public Health Immunization Program, the California Department of Public Health, the CDC and other entities offer a variety of web-based and in-person immunization training programs for clinicians and staff. Some programs offer CMEs. Visit www.publichealth.lacounty.gov/ip/trainconf.htm.

Immunization Skills Training for Medical Assistants

The Immunization Skills Institute is a 4-hour course that trains medical assistants on safe, effective, and caring immunization skills. Visit www.publichealth.lacounty.gov/ip or call (213) 351-7800.

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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

Sexually Transmitted Disease Confidential Morbidity Report
(213) 744-3070

www.publichealth.lacounty.gov/std/providers.htm (web page)
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

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

Tuberculosis Suspects & Cases

Confidential Morbidity Report
Tuberculosis Control (213) 745-0800
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

Animal Diseases and Syndrome Report Form

Veterinary Public Health (877) 747-2243
www.publichealth.lacounty.gov/vet/disintro.htm

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