



IDAHO DEPARTMENT OF
HEALTH & WELFARE

Disease Bulletin

- Bed Bugs: Where are they in Idaho?
- Missed Opportunities for HIV Testing Costly to Idahoans
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Bed Bugs: Where Are They In Idaho?

The common bed bug in the United States, *Cimex lectularius*, is a small insect, about the size of an apple seed, that feeds exclusively on blood, usually at night. Bed bugs will feed on a variety of animals, but prefer humans. The adult bed bug is brownish, approximately ¼ inch in length, and has a flattened oval body. There are five nymphal instars, or developmental stages, each requiring a blood meal before molting to the next stage (Figure). Under optimal conditions, adults may feed every few days and live for up to a year. Evidence of bed bug infestation includes the presence of adults, nymphs, droppings (rust-colored spots, often readily seen on bedding), exoskeleton castings, and eggs.

The presence of bed bugs is not limited to those with poor hygiene or low socioeconomic status. They have been detected anywhere people can be found, including 5-star hotels, private homes, and homeless shelters. Bed bugs

like to hide anywhere close to a food source including mattress seams, bed frames, furniture, picture frames, outlets, baseboards, and cracks in walls.

Bed bugs are found worldwide. In the United States, they were common pests until the pesticides DDT (dichlorodiphenyltrichloroethane) and malathion, introduced after World War II all but eliminated them. However, DDT was banned in 1972 and hotels have moved away from the practice of applying residual pesticides indoors.

In the last few years, reports of bed bug infestations have increased alarmingly nationwide. Multiple reasons for this resurgence are suspected, including increased resistance of bed bugs to available pesticides, the use of ineffective bait-style pesticides for bed bug control, increased worldwide transportation of bed bugs through domestic and international travel, lack of awareness about bed bugs and their control,

and the continuing decline or elimination of effective vector and pest control programs at state and local public health agencies.

Public Health Concerns

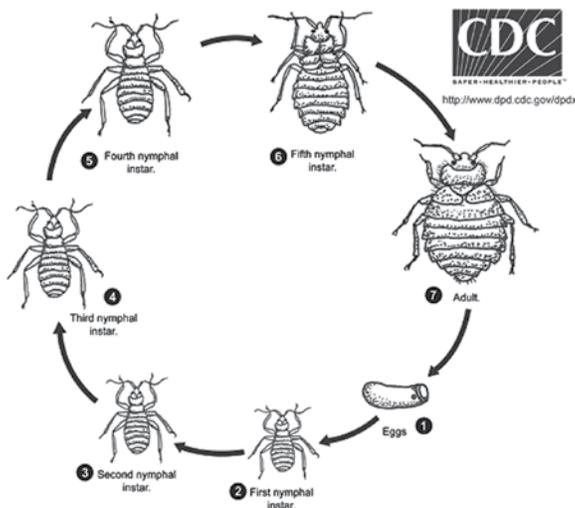
Even though bed bugs draw blood while biting, they are not known to transmit disease. Bed bug-associated health effects include allergic reactions to components of the saliva, anxiety, and sleeplessness. Exposure to certain pesticides used for bed bug control could pose a potential secondary health risk, particularly if they are applied improperly.

Bed Bugs in Idaho

In an effort to document the burden of bed bugs in Idaho, pest

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Figure. Bed Bug (*Cimex lectularius*) developmental cycle.



From http://www.dpd.cdc.gov/DPDx/HTML/ImageLibrary/A-F/Bedbugs/body_Bedbugs_il2.htm

OFFICE OF EPIDEMIOLOGY, FOOD PROTECTION, AND IMMUNIZATION

Idaho Department of Health and Welfare

P.O. Box 83720
450 W. State Street,
4th Floor
Boise, Idaho 83720-0036
WWW.IDB.DHW.IDAHO.GOV

IDAHO DISEASE BULLETIN CONTRIBUTING STAFF

CHRISTINE G. HAHN, MD
State Epidemiologist

**LESLIE TENGELSEN, PhD,
DVM**
Deputy State Epidemiologist

JARED BARTSCHI, MHE
Epidemiology Program
Specialist

KRIS CARTER, DVM, MPVM
Career Epidemiology Field
Officer

JAMES COLBORN, PhD, MSPH
Epidemic Intelligence Service
Officer

PATRICK GUZZLE, MPH
Food Protection Program
Manager

MITCHELL SCOGGINS, MPH
Immunization Program
Manager

KATHRYN TURNER, MPH
Epidemiologic Data and
Surveillance Program Manager

**ELLEN ZAGER HILL, MS,
DLSHTM**
Epidemiology Program
Specialist



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control operators (PCOs) across Idaho were surveyed via telephone in 2009. They were asked about frequency of bed bug-related calls, preferred control measures, and typical costs associated with control efforts. Of the 35 PCOs contacted, 30 (86%) reported a noticeable increase in the frequency of bed bug-specific calls during the prior 12 months. Most PCOs employed the integrated pest management (IPM) approach, charged on average \$183 per visit, and considered control measures for small infestations successful after an average of three visits.

IPM is a stepwise approach employing a series of evaluation, decision, and

pest-control steps considered most economical and least hazardous to people, pets, property, and the environment. The IPM approach includes pest identification and development of a plan for appropriate control based on the burden of infestation. Control methods include heat, encasement of mattresses, vacuuming, insecticide use (pyrethroid insecticides, nicotine insecticides, insect growth regulators), or use of silica-based products. If used improperly, pesticides can pose a health risk for people and pets; therefore, hiring a licensed PCO to apply pesticides is recommended.

Bed bugs are here in Idaho, and appear to be on the rise. Although there are no

known risks of disease transmission, bed bugs are of public health concern, and owners of infested premises can suffer economic losses. Eradication could be costly, particularly if the infestation has spread from room to room or to different floors in a building.

To learn more about bed bugs, visit the IDHW web site which provides general bed bug information, Idaho resources for insect identification, and links to patient fact sheets and safe use of pesticides:

<http://healthandwelfare.idaho.gov/health/DiseasesConditions/BedBugs/tabid/1591/Default.aspx>.

Missed Opportunities for HIV Testing Costly to Idahoans

Routine opt-out HIV testing in health-care settings has been recommended by the Centers for Disease Control and Prevention (CDC) since 2006. However, several HIV cases diagnosed in Idaho in recent years have histories of prior missed opportunities for HIV testing.

In 2008, a case of perinatal HIV infection was reported in Idaho. The mother, with only a brief history of prenatal care outside of Idaho and unknown HIV status, presented to an emergency department (ED) while in labor and did not receive an HIV test. An HIV test, which was positive, was not performed until 2009 when the mother was hospitalized with a parasitic infection. Testing of the child, then 8 months of age, revealed detectable HIV-1 RNA. HIV testing guidelines state that any woman with undocumented HIV status at the time of labor should be screened with a rapid HIV test unless she declines. If the screening test is reactive she should be offered antiretroviral postexposure prophylaxis without waiting for the result of a confirmatory test. In this case, intravenous antiretroviral therapy of the mother during labor and prophylaxis of the infant immediately after birth might have prevented transmission.

A middle aged Idahoan was diagnosed with progressive squamous cell skin cancer

on the head and neck in 2007. Presentation on the head and neck has been described and is associated with HIV infection. The individual was not tested for HIV at the specialty clinic where he received care. His illness progressed and he died in 2010 due to advanced invasive disease caused by the cancer. Tissue was donated, requiring post-mortem testing, and HIV was detected. No tissues from this patient were accepted for transplant. Routine testing might have resulted in earlier detection of HIV, and subsequent initiation of antiretroviral therapy against HIV could have improved the patient's survival time after cancer diagnosis.

A male in his 30s was diagnosed with HIV in 2011 after several visits to EDs for oral candidiasis (thrush) and recurring bacterial pneumonia. At the last ED visit prior to HIV diagnosis, he presented with shortness of breath, several weeks of progressive chronic cough, and several months of oral candidiasis. An HIV test was positive and he was admitted to inpatient care. His CD-4 T-helper Cell (CD4) count was 3 (absolute) and he was diagnosed with *Pneumocystis carinii* pneumonia (PCP). HIV testing in accordance with CDC recommendations could have caught the infection months before and reduced a significant

amount of suffering and medical costs accrued during the multiple ED visits.

Recommended routine testing protocols do work. For example, during a routine family planning visit for birth control at an Idaho public health district clinic in 2011, a woman in her 20s received a rapid HIV test, which was positive. A Western blot test was subsequently performed and confirmed the result. The woman reported low risk heterosexual risk factors and had no history of injection drug use, so would not have been screened under previous CDC recommendations for testing persons at high risk for HIV. This routine screening led to early detection of HIV infection and prompt enrollment in HIV specialty care.

The CDC recommendations state, "HIV infection is consistent with all generally accepted criteria that justify screening:

- 1) HIV infection is a serious health disorder that can be diagnosed before symptoms develop;
- 2) HIV can be detected by reliable, inexpensive, and noninvasive screening tests;
- 3) infected patients have years of life to gain if treatment is initiated early, before symptoms develop; and
- 4) the costs of screening are reasonable



in relation to the anticipated benefits.

Among pregnant women, screening has proven substantially more effective than risk-based testing for detecting unsuspected maternal HIV infection and preventing perinatal transmission.”

Individuals with HIV infection often encounter healthcare settings years before receiving an HIV diagnosis. In most cases, persons infected with HIV decrease behaviors that transmit infection to sex or needle-sharing partners once they are aware of their positive HIV status. Additionally, early detection of HIV confers a greater survival advantage when therapy can be initiated before severe immunologic compromise occurs.

The Idaho Department of Health and Welfare (IDHW) recommends physicians

screen patients for HIV in accordance with the most recent CDC recommendations (<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5514a1.htm>).

For all healthcare settings, routine opt-out screening for HIV is recommended for all patients aged 13–64 years. Assessment for risk of HIV infection should be incorporated into routine primary care for all sexually active persons to determine the frequency of rescreening.

Healthcare providers should test all persons likely to be at high risk for HIV at least annually. Individuals considered high risk include, but are not limited to:

- injection-drug users and their sex partners,
- persons who exchange sex for money or drugs,
- sex partners of HIV-infected persons,

- sexually active men who have sex with men (MSM), and
- heterosexual persons who or whose sex partners have had more than one sex partner since their most recent HIV test.

Additional situations in which testing may be warranted include:

- persons considering engaging in a new sexual relationship,
- patients with newly diagnosed active tuberculosis,
- patients with medical conditions consistent with Acquired Immune Deficiency Syndrome (AIDS), and
- patients presenting with acute viral illnesses of unexplained etiology who have risk factors for HIV.

Idaho's Immunization Registry (IRIS) is Changing

The Idaho Immunization Reminder Information System (IRIS) is turning 12 years old this year, having been authorized in Idaho statute in 1999. IRIS has been referred to as one of the most robust and mature immunization registries in the country, and enhancements and new functionality have been coming online nearly every month over the last few years. Through a change to the Idaho immunization registry statute in 2010, IRIS became an opt-out system which eliminated the need to providers to collect and maintain opt-in paperwork, and made it easier for providers to record immunizations in IRIS through electronic exports. IRIS now contains immunization information for over one million Idahoans.

Medical practice, including the use of electronic health records, is changing rapidly; a new immunization registry system for Idaho is part of our effort to keep pace with the changes. The technology for the new system was developed for the Wisconsin immunization registry and won the prestigious national “Davies Award of Excellence” for excellence in healthcare information technology in 2010.

The system has been successfully deployed in several states.

The new registry system is anticipated to be implemented in March of 2012. In the weeks leading up to the go-live day, in-person and online training opportunities will be offered. During the coming year as the system is customized, tested and brought online, the Idaho Immunization Program will be sharing information with Idaho immunization providers, other system users, and the public in a variety of ways:

- Critical Notices faxed to Vaccine for Children (VFC) providers: These notices are rare, appearing only once or twice per year, and contain the most urgent immunization-related information such as vaccine recalls, shortage information or changes to immunization laws or rules.
- Important Notices faxed to VFC providers: These notices are released every 4–6 weeks as needed, and contain information about immunization program changes, immunization news from the Centers for Disease Control and Prevention, and other less critical information related to the Idaho Immunization Program.

- Continuous online messaging (available at <http://www.ImmunizeIdaho.com>).

These communications will include updates and information regarding the switch-over to the new IRIS system. For faxed notices, a routing box at the top of the first page requests that each notice be directed to the Office Manager, medical staff, nursing staff, and the Immunization Coordinator. If you do not routinely see these notices and would like to, please ask the person in your practice who is in charge of distributing faxes to include you on the list of recipients. These notices are also sent to professional medical organizations such as the Idaho chapters of the AAP, AAFP, and the IMA, and are posted to the web at <http://www.ImmunizeIdaho.com> under the “Healthcare Providers” link.

Information about the new IRIS system was shared during the Shot Smarts conferences held the last week of April. Updates will be included in the Booster Shots conferences later this year. For more information regarding Shot Smarts and Booster Shots conferences please visit <http://www.ImmunizeIdaho.com>.



Division of Public Health
P.O. Box 83720
Boise, ID 83720-0036

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**ROUTINE 24-Hour
Disease Reporting Line
1.800.632.5927**

**EMERGENCY 24-Hour
Reporting Line
1.800.632.8000**

An electronic version of the Rules and Regulations Governing Idaho Reportable Diseases may be found at <http://adm.idaho.gov/adminrules/rules/idapa16/0210.pdf>.

Current and past issues are archived online at www.idb.dhw.idaho.gov.

Measles Outbreak in Utah—Idahoans Exposed

A case of measles in an unvaccinated traveler returning from Poland led to a measles outbreak involving nine cases in Utah residents. Four Idahoans residing in two Idaho public health districts were reported to have been exposed. Exposures occurred in healthcare and religious event settings. Investigation by Idaho public health district epidemiologists found that two exposed adults had been previously vaccinated with a measles, mumps, and rubella-containing vaccine (MMR) and two exposed children aged <5 years had never received MMR. The family of the exposed children cooperated with the public health district recommendation to keep the children home and monitor and report signs of illness during the incubation period. Notification was not received within the 72-hour window for post-exposure vaccination to prevent illness; however, unimmunized family members intend to obtain vaccination with MMR to provide immunity should future

exposures occur.

Clinicians should counsel potential overseas travelers on the advisability of immunity to measles, and should consider measles in the differential diagnosis for rash illness among unvaccinated persons, especially in those with recent travel to Utah; European countries experiencing measles outbreaks*; or developing countries in which measles is common, such as parts of Africa and Asia. Suspected measles cases must be reported within one working day to state or district public health officials to ensure prompt initiation of control measures. To prevent acquisition and transmission of measles in health-care facilities, the Advisory Committee on Immunization Practices (ACIP) recommends that all persons who work in healthcare facilities have acceptable evidence of measles immunity, as updated in 2009 (<http://www.cdc.gov/vaccines/recs/provisional/downloads/mmr-evidence-immunity-Aug2009-508.pdf>).

**See World Health Organization Epidemiological Brief, http://www.euro.who.int/__data/assets/pdf_file/0008/135188/EPI-BRIEF-13.pdf.*

Idaho Disease Bulletin Now Available Electronically— See Our New IDB Website!

In January 2011, the Idaho Disease Bulletin (IDB) website (<http://www.IDB.dhw.idaho.gov>) was redesigned to include searchable indices of issues from the last 10 years, the ability for you to suggest topics, and the ability for you to sign up to receive an electronic copy of the IDB. Electronic distribution of the IDB is a new feature this year. If you would like to receive a link to new issues of the IDB by e-mail please go to www.IDB.dhw.idaho.gov to submit a request or send an email to IDB@dhw.idaho.gov.