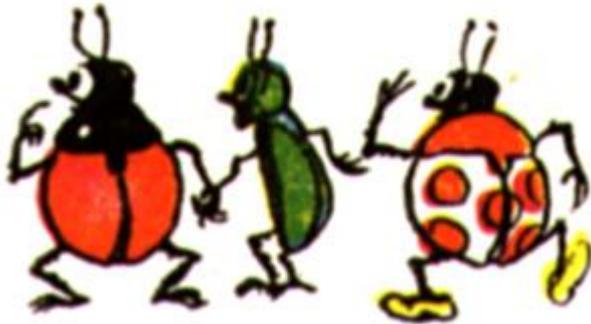


Infection Control in Assisted Living Facilities

Christine Hahn, MD
Division of Public Health
IDHW



Topics

- What are diseases of concern in Idaho?
- General infection prevention measures and guidelines
- Specific ways to prevent and manage:
 - Norovirus
 - C-Diff
 - Influenza and other respiratory infections
 - TB
- Questions?

Respiratory Diseases



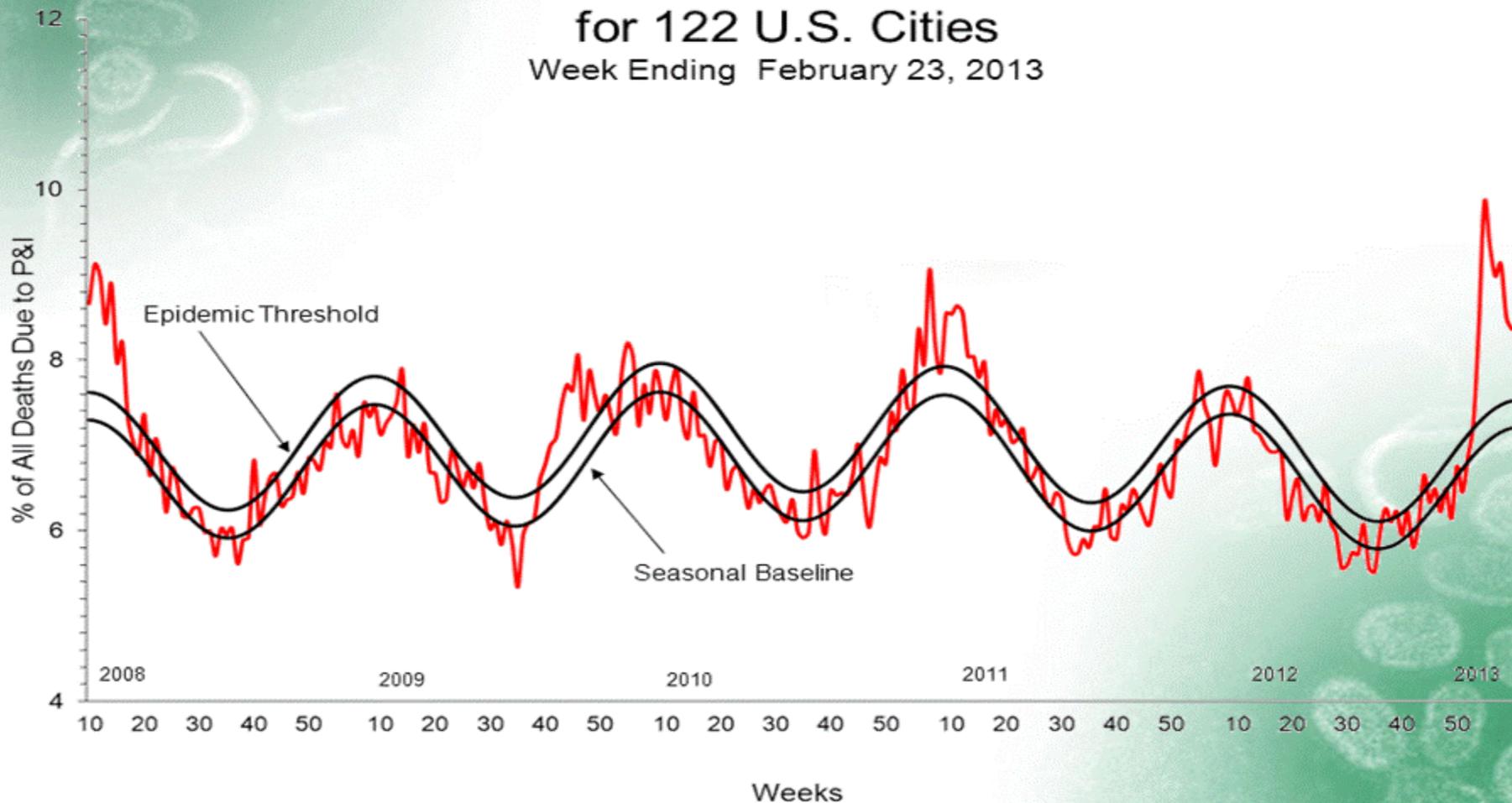
Influenza

- Leading cause of illness and death in elderly, but also has great impact in other populations
- CDC estimates that from the 1976 --2007 flu seasons, flu-associated deaths ranged from a low of about 3,000 to a high of about 49,000 people each year.
- Spread is facilitated by close contact, so living settings are a very important location for prevention of the spread of influenza

A Weekly Influenza Surveillance Report Prepared by the Influenza Division

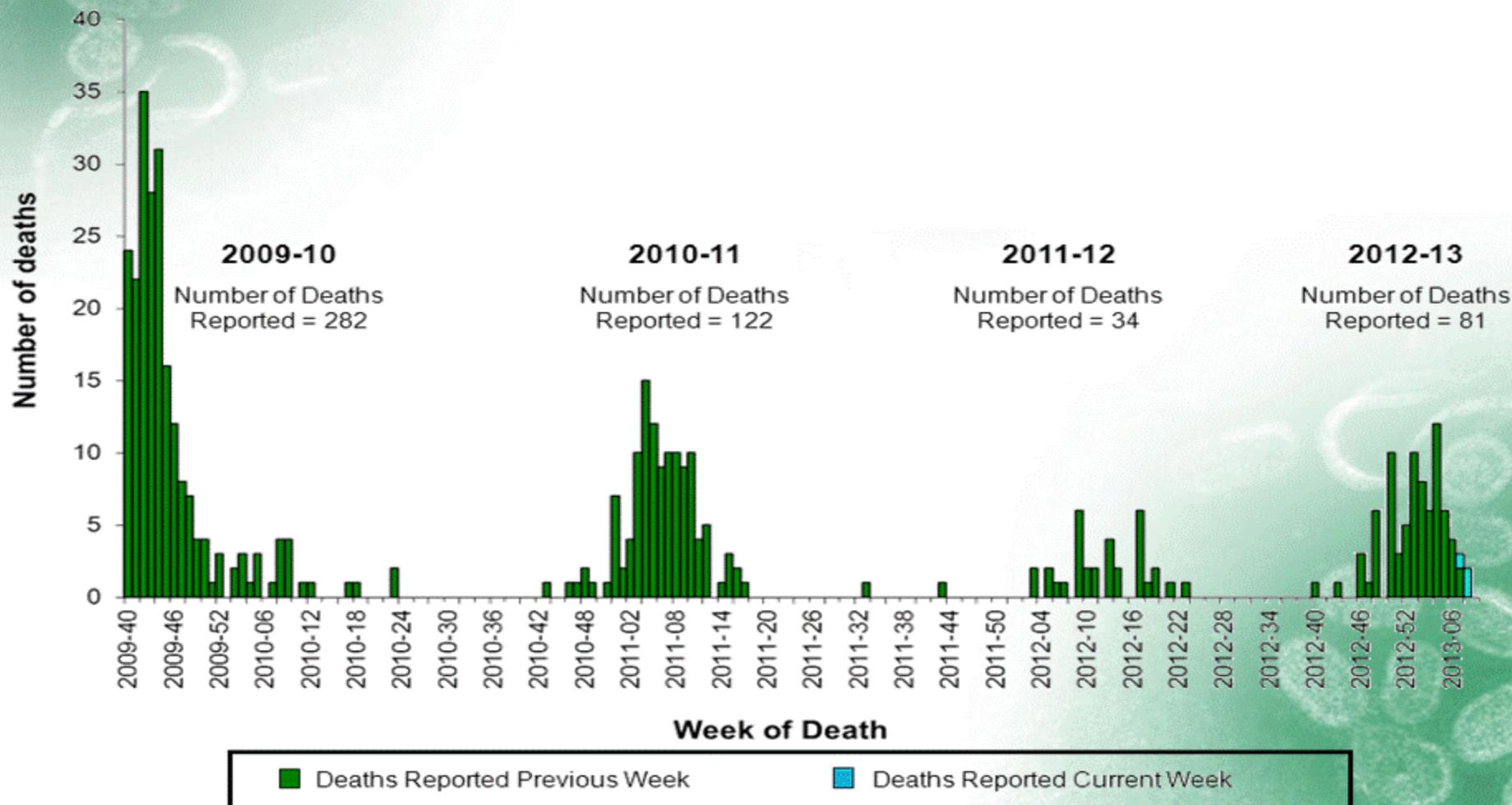
Pneumonia and Influenza Mortality for 122 U.S. Cities

Week Ending February 23, 2013



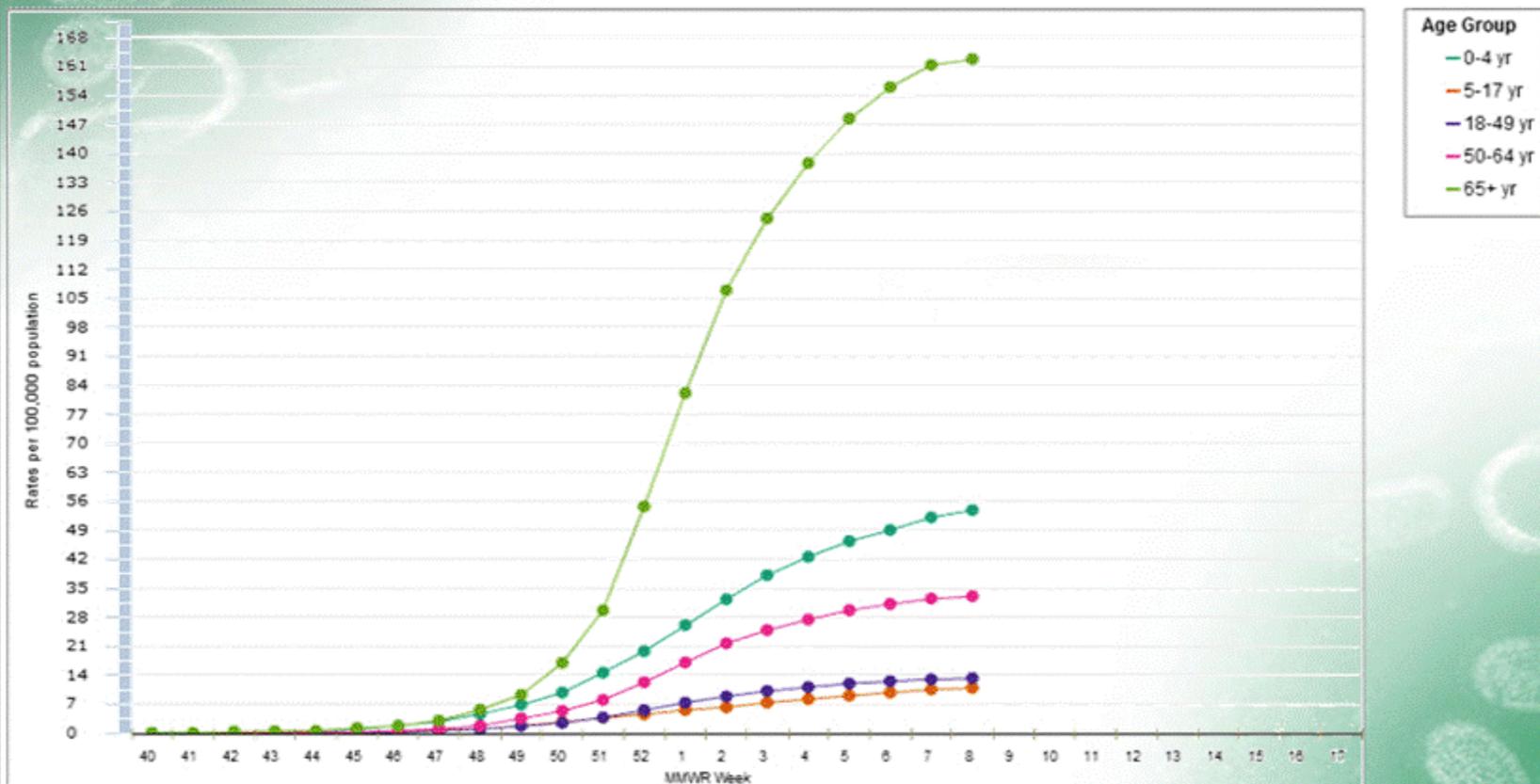
A Weekly Influenza Surveillance Report Prepared by the Influenza Division

Number of Influenza-Associated Pediatric Deaths by Week of Death: 2009-10 season to present



Laboratory-Confirmed Influenza Hospitalizations

Preliminary rates as of Feb 23, 2013



Data from the Influenza Hospitalization Surveillance Network (FluSurv-NET), a population-based surveillance for influenza related hospitalizations in children and adults in 15 US states. Incidence rates are calculated using the National Center for Health Statistics¹ (NCHS) population estimates for the counties included in the surveillance catchment area.

VIEW ARTICLE

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posted on February 05, 2013 15:23

NEWS RELEASE--FOR IMMEDIATE RELEASE**Date: Feb. 5, 2013****Contact:** Niki Forbing-Orr
Public Information Officer
(208) 334-0693**Flu-related deaths in Idaho now number 21 and include two children**

Public health officials in Idaho are reporting two influenza-associated deaths among children younger than 18, bringing the total flu-related deaths to 21 since the start of the flu season on Oct. 1, 2012. The 19 adult deaths reported all were individuals older than 50.

"Our sympathies are with the families of all the victims, and especially with those grieving the loss of a child. Although influenza has hit the older population particularly hard this season, these pediatric deaths are a tragic reminder that influenza can be a very serious infection for all age groups," says Dr. Leslie Tengelsen, deputy state epidemiologist. "Influenza activity is still high, and as long as the virus is circulating in our communities, the best protection for you and your family is to get the vaccine. It is not too late to get the shot."

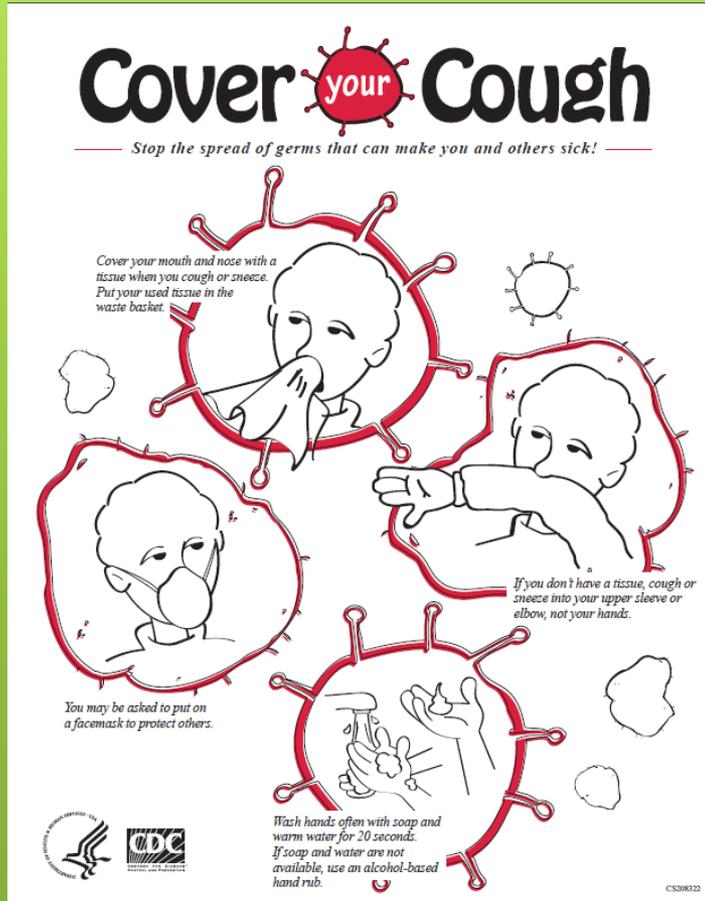
Vaccination is recommended for everyone older than 6 months of age. There is still plenty of pediatric vaccine for those who want it. Adults, however, may want to consider calling ahead to make sure vaccine is available, or find a clinic at www.flu.gov

Influenza can cause severe illness, especially for certain high risk groups such as those who are pregnant; those who have diabetes, asthma and heart disease; those with compromised immune systems; and the elderly. People who are at higher risk for complications from influenza should consult with their healthcare provider within the first 48 hours of illness to see if the use of antiviral medications would be right for them.

Influenza vaccination

- Routine annual influenza vaccination is recommended for all persons aged ≥ 6 months.
- Vaccination is especially important for the elderly, people with chronic health conditions, developmental disabilities, and for health care providers and caregivers for persons at high risk of influenza complications
- To permit time for production of protective antibody levels, vaccination optimally should occur before onset of influenza activity in the community. Therefore, vaccination providers should offer vaccination as soon as vaccine is available.
- Vaccination should be offered throughout the influenza season.

Respiratory Hygiene



Respiratory hygiene includes:

- Covering cough
- Washing hands
- Masks if appropriate
- Staying away from others while sick



Residential Care and Assisted Living Newsletter

December 2012

Flu Season Reminder

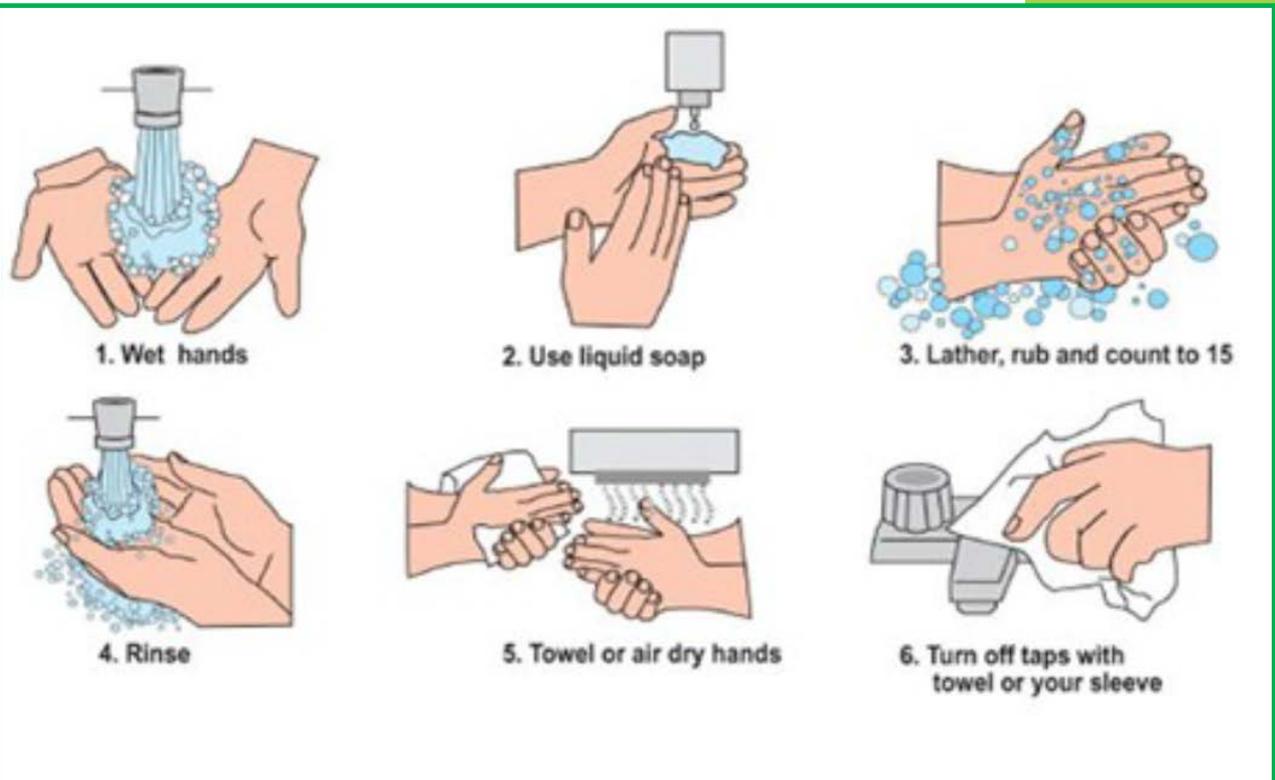
Remember the flu can cause serious complications. People who have chronic illnesses such as: heart disease, diabetes, asthma, and the flu, are aged 65 years or older.

So it is very important to limit the spread of the flu. This can be done by:

- ~ encouraging staff and residents to get vaccinated with the flu.
- ~ encouraging staff, to stay home when they are sick without a fever.

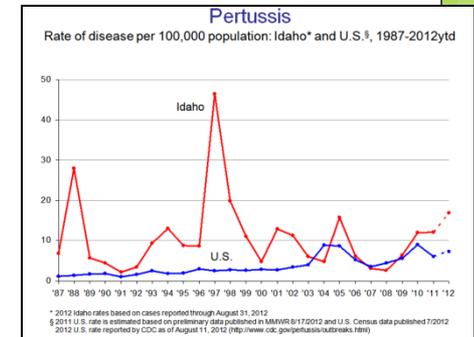
~ putting proper infection controls in place

1. Encourage residents and staff to get vaccinated to reduce the spread of the flu.
2. Encourage residents and staff to get vaccinated to reduce the spread of germs.
3. Encourage staff and residents to practice good hygiene through out the flu season.



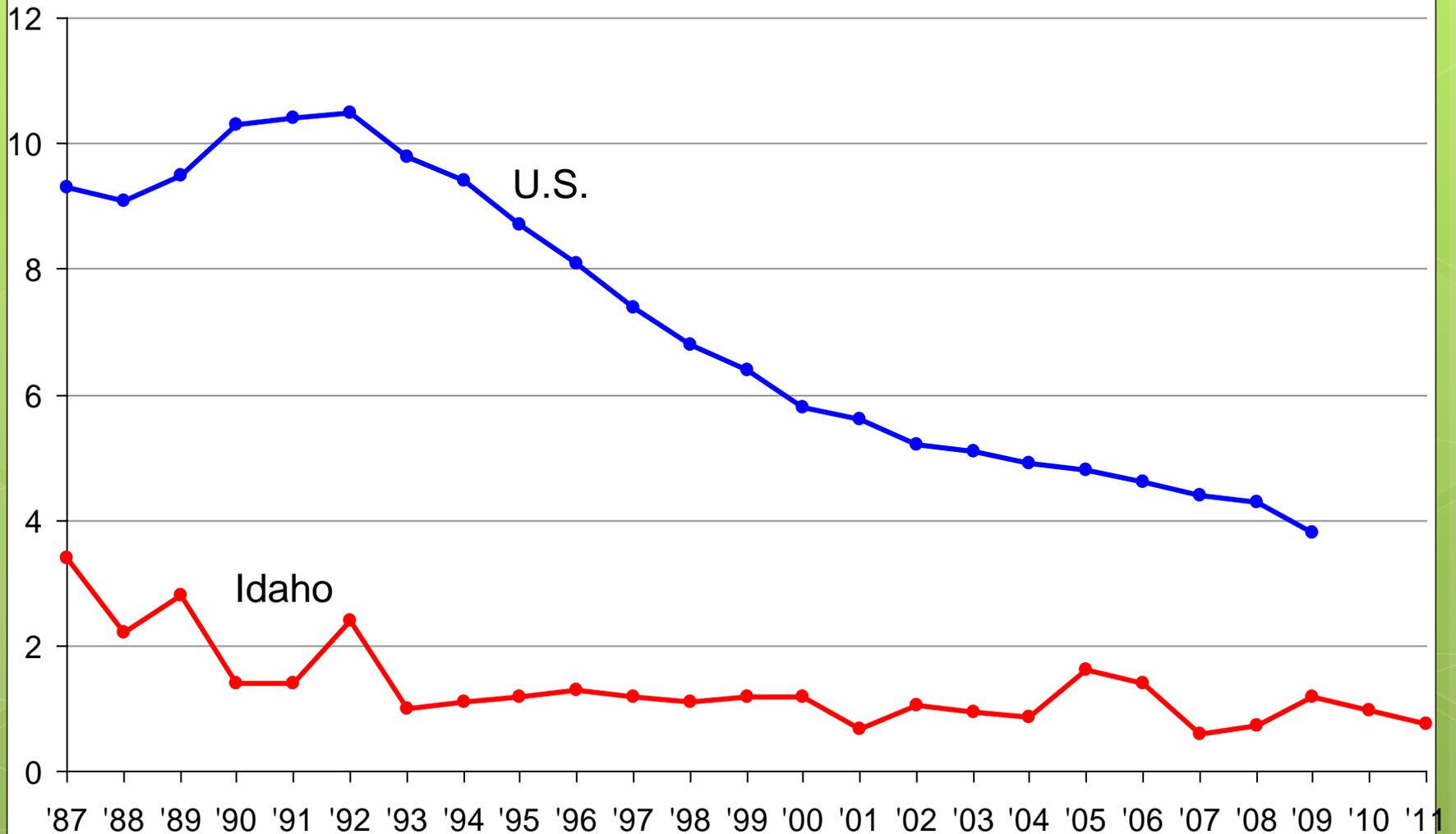
Other common respiratory infections transmitted in living settings

- Pertussis (whooping cough)– vaccine recommended for children (Dtap), adolescents and adults (Tdap)
- Respiratory syncytial virus (RSV)
- Cold viruses
- Strep pneumoniae– causes bacterial pneumonia and blood infection. Vaccine recommended for persons 50 years of age and older, or younger persons at high risk for pneumococcal disease (Pneumovax, the “pneumonia shot”)



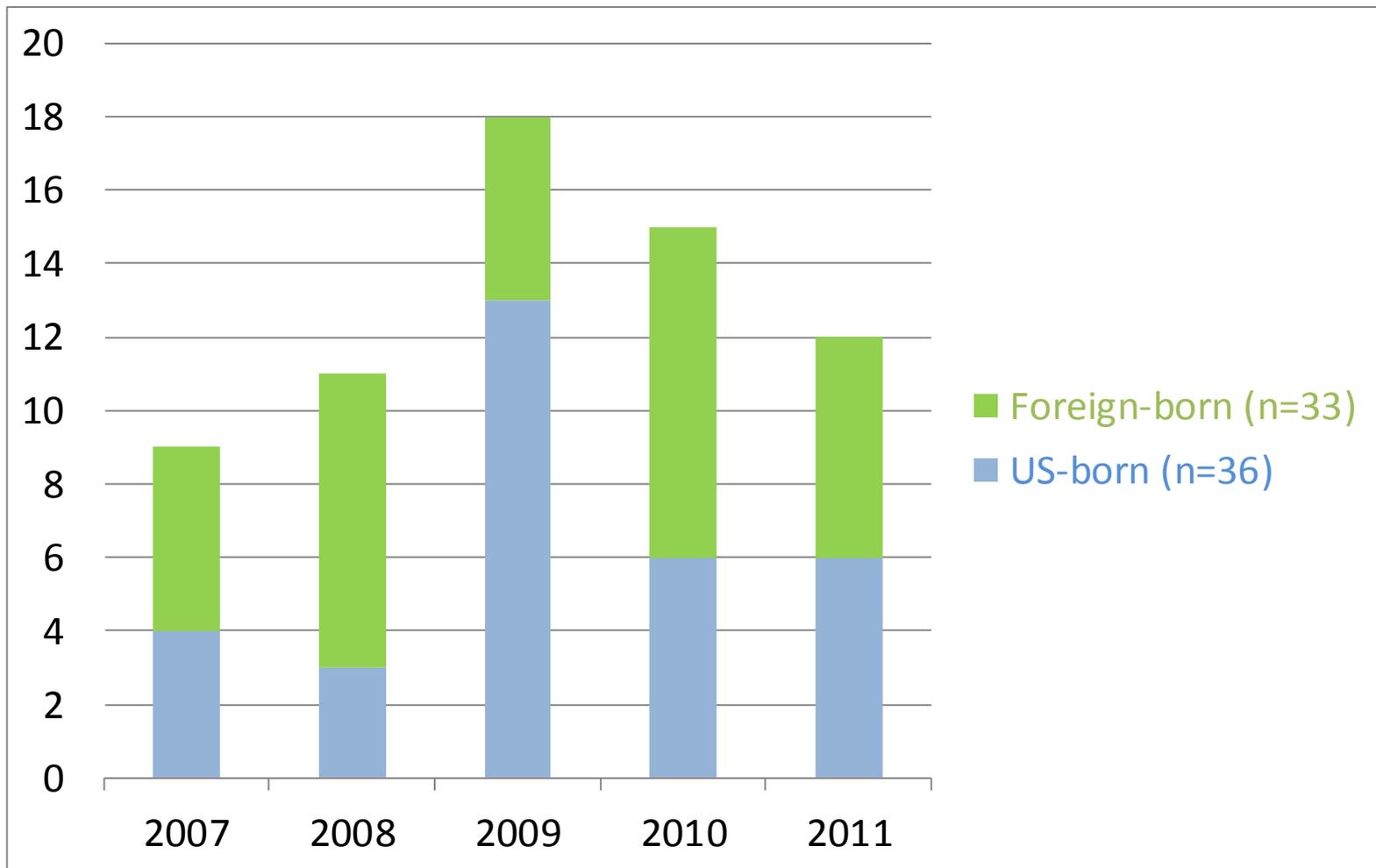
Tuberculosis

Rate of disease per 100,000 population: Idaho and U.S., 1987-2011



U.S. rates from CDC Publication TB in the United States

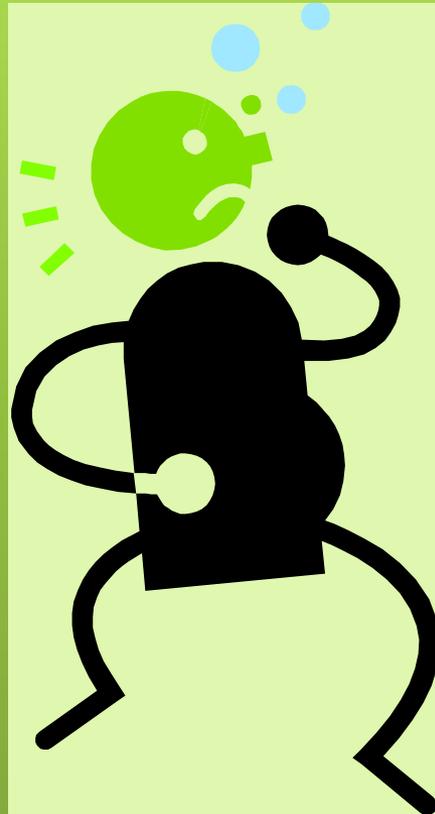
TB cases, by origin of birth, Idaho– 2007-2011



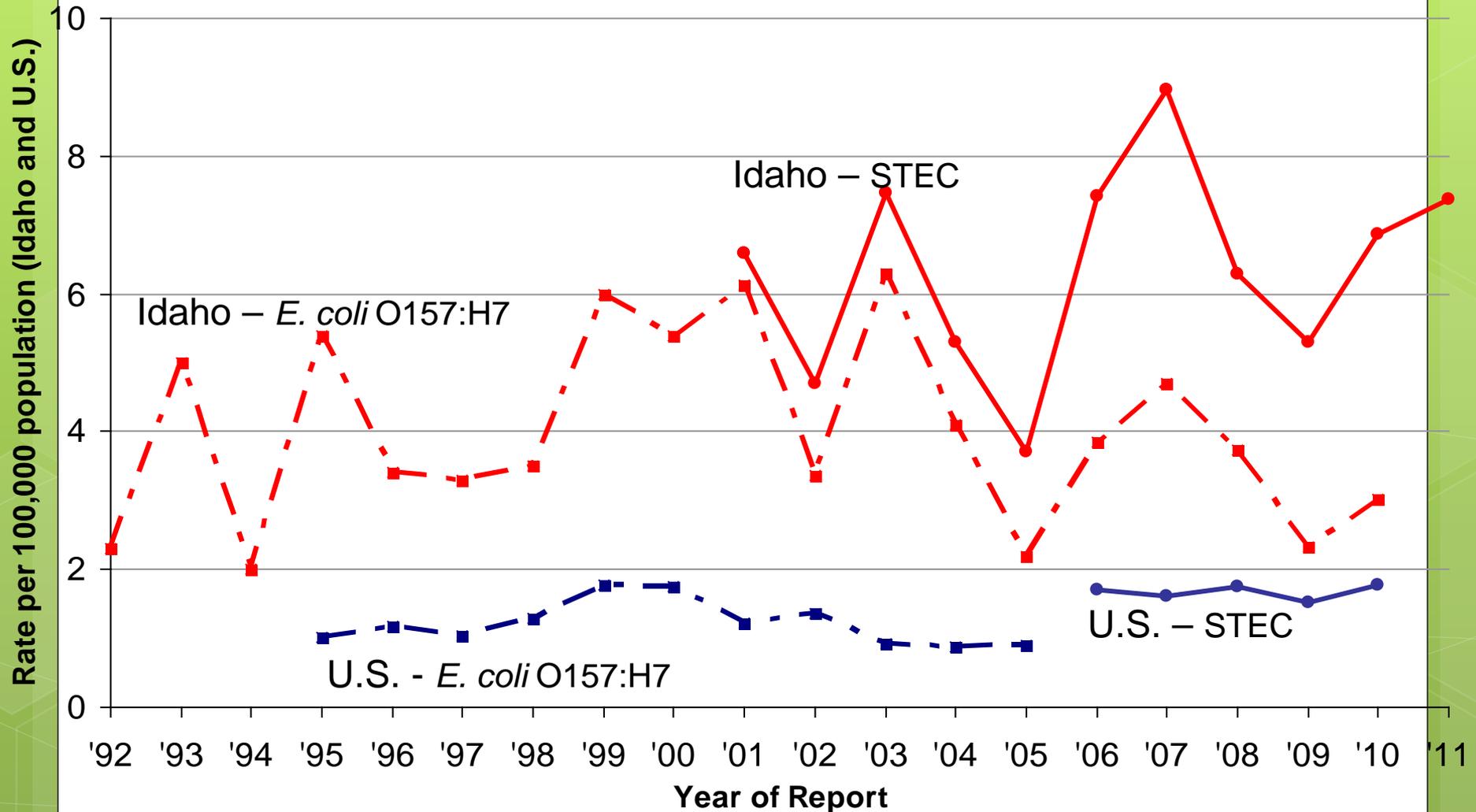
Prevention of TB

- Skin testing (PPD) or blood testing (IGRA, QFT, Eli-Spot) to look for latent infection
- If skin or blood test positive, should have medical evaluation for TB infection, TB disease, and be considered for antibiotic treatment to eliminate infection
- Any prolonged illness (>2-3 weeks) should be evaluated
- Certain CXR findings are suspicious for TB and should be taken very seriously if found
- Public health can assist with any questions (your local public health district is the first line; the IDHW TB control staff, located in the Division of Public Health, can help if they are not able to help)

Gastrointestinal infections



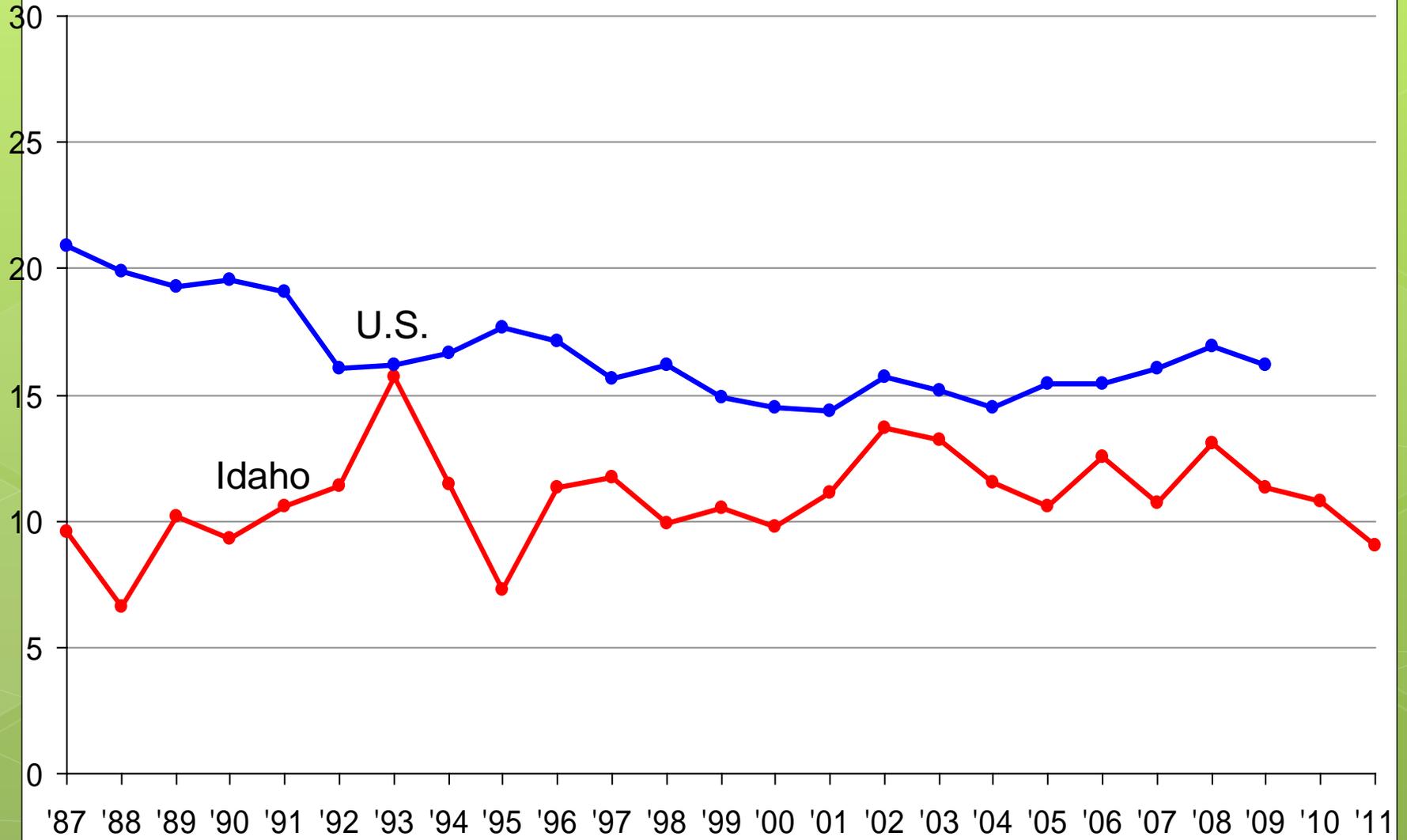
E. Coli STEC and *E. Coli* O157:H7



In 2006, CDC began reporting all STEC together rather than by serotype.

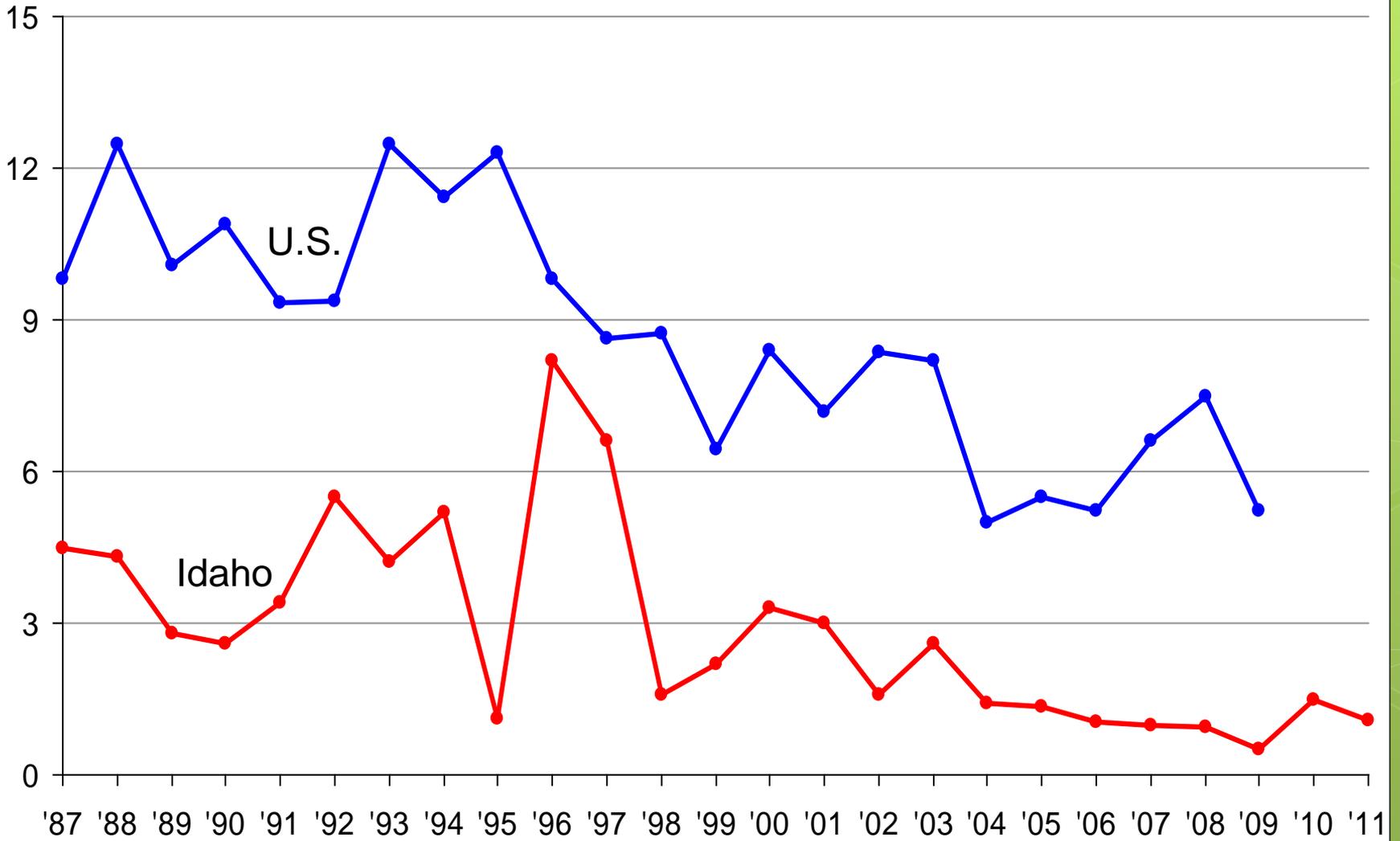
Salmonellosis

Rate of disease per 100,000 population: Idaho and U.S.



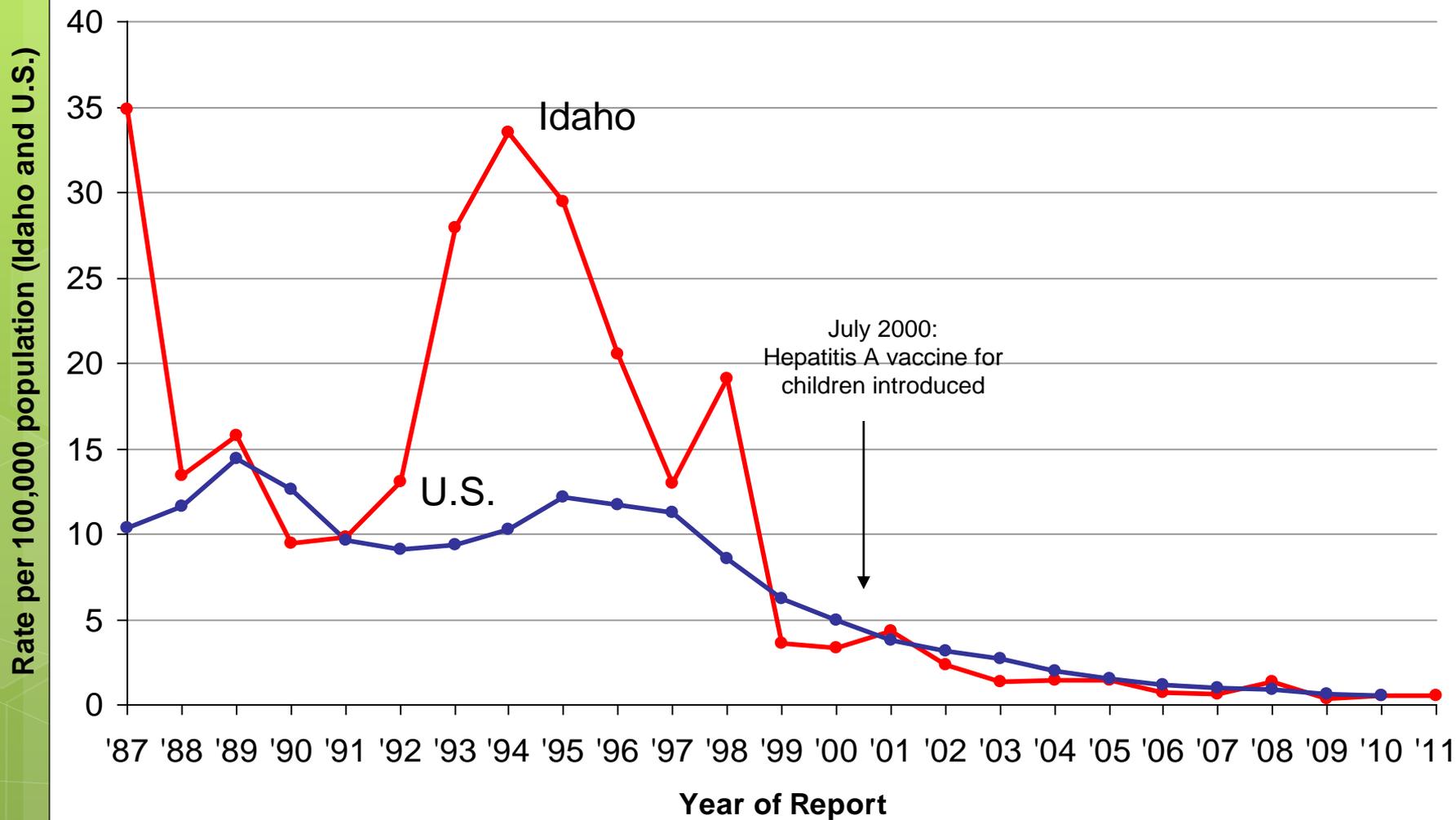
Shigellosis

Rate of disease per 100,000 population: Idaho and U.S.



Hepatitis A

Rate per 100,000 population: Idaho and U.S.



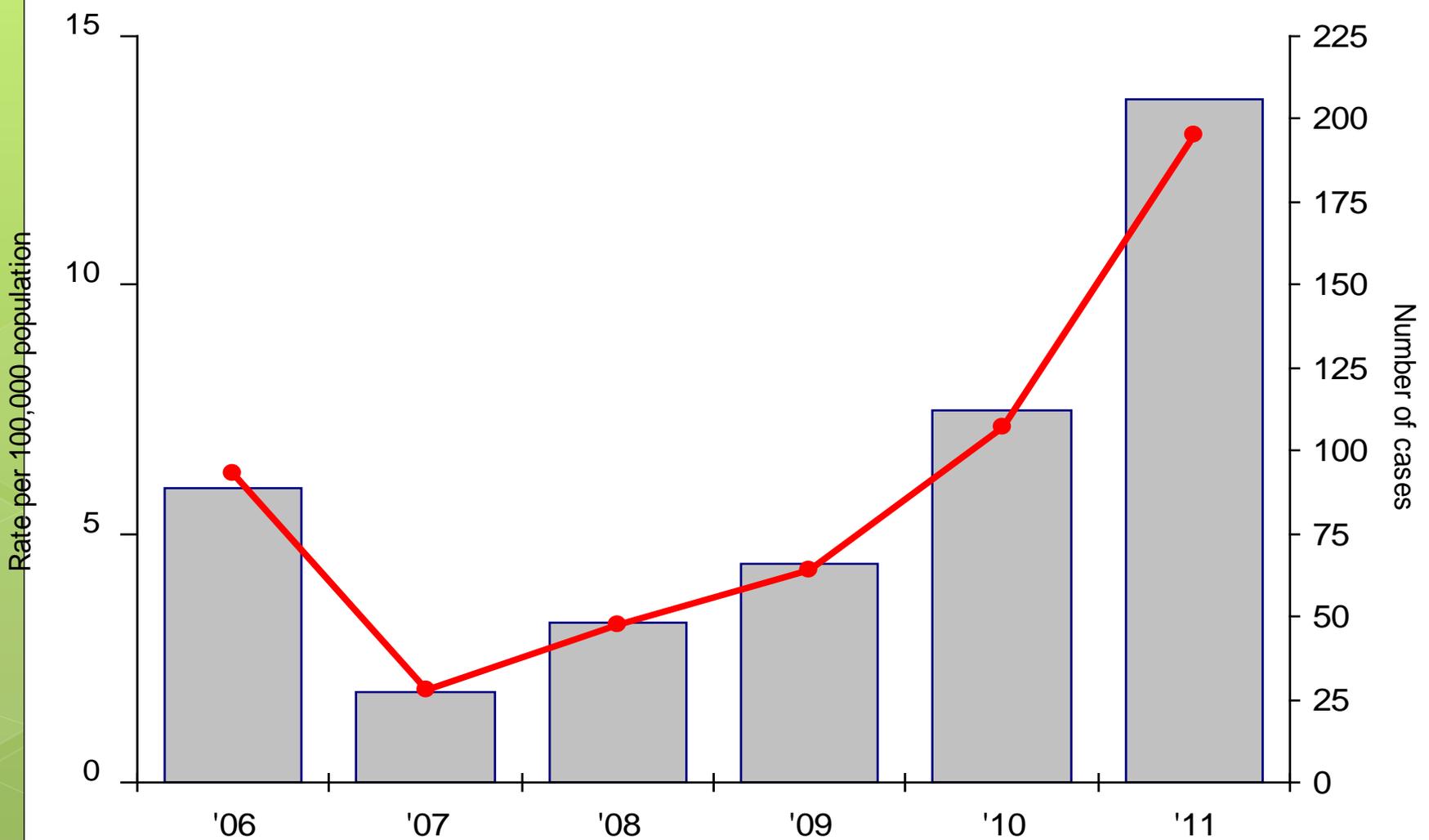
Hepatitis A prevention

- Good hand hygiene
- Routine Vaccination of:
 - All 2-yr old children
 - Travelers
 - MSM
 - Users of illegal injection and noninjection drugs.
 - Persons with certain medical conditions (chronic liver disease or clotting-factor disorders).



Norovirus

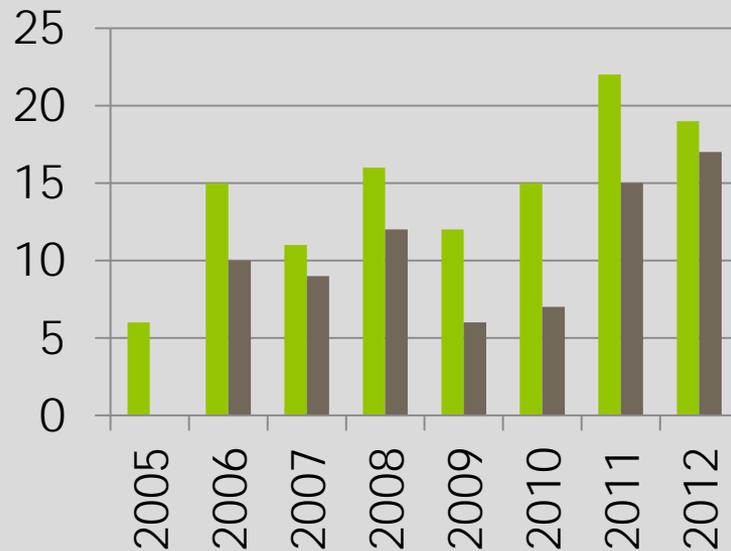
Cases (not outbreak associated) and rate of disease per 100,000 population: Idaho, 2006-2011



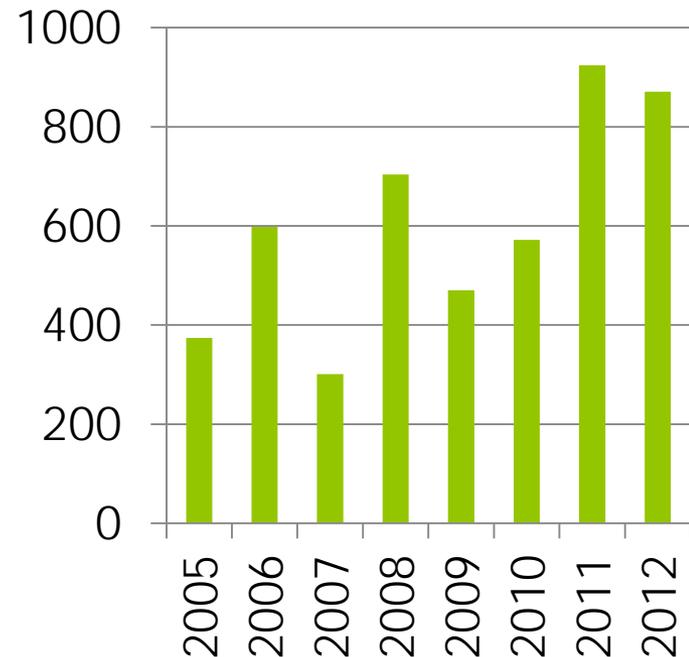
Norovirus was not tracked in Idaho until 2006.

Norovirus Outbreaks in Idaho

Number of Outbreaks including Facility-Associated Outbreaks



Outbreak-associated Cases





Residential Care and Assisted Living Newsletter

Norovirus (cont)

To prevent this highly contagious virus:

- Remind staff, residents, volunteers, and visitors to be more conscientious about hand washing and infection control.
- Carefully wash fruits and vegetables and thoroughly cook oysters and other shellfish before serving them.
- Prevent anyone with any gastroenteritis symptoms (nausea, vomiting, and diarrhea) from preparing food.
- Clean and disinfect surfaces that could be contaminated. A bleach-based cleaner should be used according to the product label. If no cleaning product is available, make a cleaning solution that has between 5 tablespoons and 1.5 cups of bleach per gallon of water (depending on the surface).
- Ensure that laundry contaminated with vomit or stools is not agitated (to avoid spreading the virus) and wash it immediately.
- Wear gloves while handling soiled clothes and wash your hands after handling laundry items.

Clostridium difficile (C diff)

Patients who are highest risk for C diff are those who:

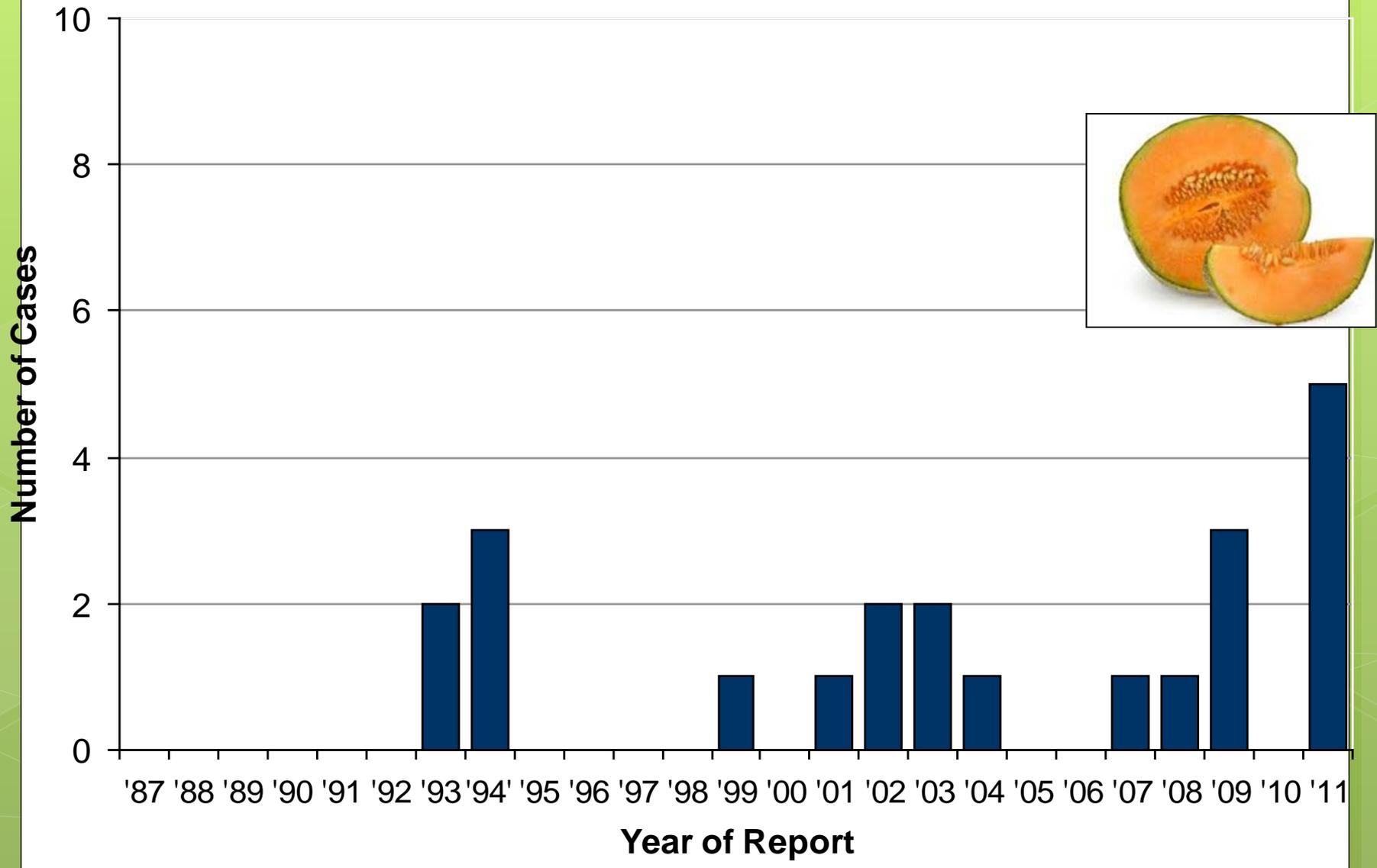
- Are currently taking or have recently taken antimicrobials
- Have had gastrointestinal surgery or manipulation
- Have had a long length of stay in a healthcare setting
- Have a serious underlying illness
- Are immunocompromised
- Are of advanced age

Management of C diff

- Private room is recommended, especially for residents who are fecally incontinent or who cannot practice good handwashing.
- If patients with C diff have diarrhea, this is a very challenging situation; contact precautions are needed.
- Hands should be washed frequently with soap and water. Alcohol-based hand gels and lotions are not effective do not work and are not recommended.
- An EPA-approved hospital disinfectant-detergent should be used for all environmental cleaning.

Listeriosis

Cases: Idaho, 1987-2011



2011 Cantaloupe outbreak

- Total 146 ill from 28 states
 - Median age 77; median age among fatalities was 82.5
 - 142 were hospitalized
 - 30 adult deaths and one pregnant woman miscarried
 - Deadliest foodborne outbreak in US since 1985 (48 deaths from Listeria, from soft cheese) and meat outbreak in 1998 (31 deaths from Listeria, from deli and cured meats)
 - Multiple areas of contamination found in packing area of farm
- Idaho:
 - Eventually 2 confirmed cases identified
 - 68yo F who handled cantaloupe;
 - 66yo M with diabetes who was poor historian but believes he may have consumed cantaloupe.
 - Both were hospitalized and had positive blood cultures for Listeria, and have recovered.

Prevention of foodborne illness

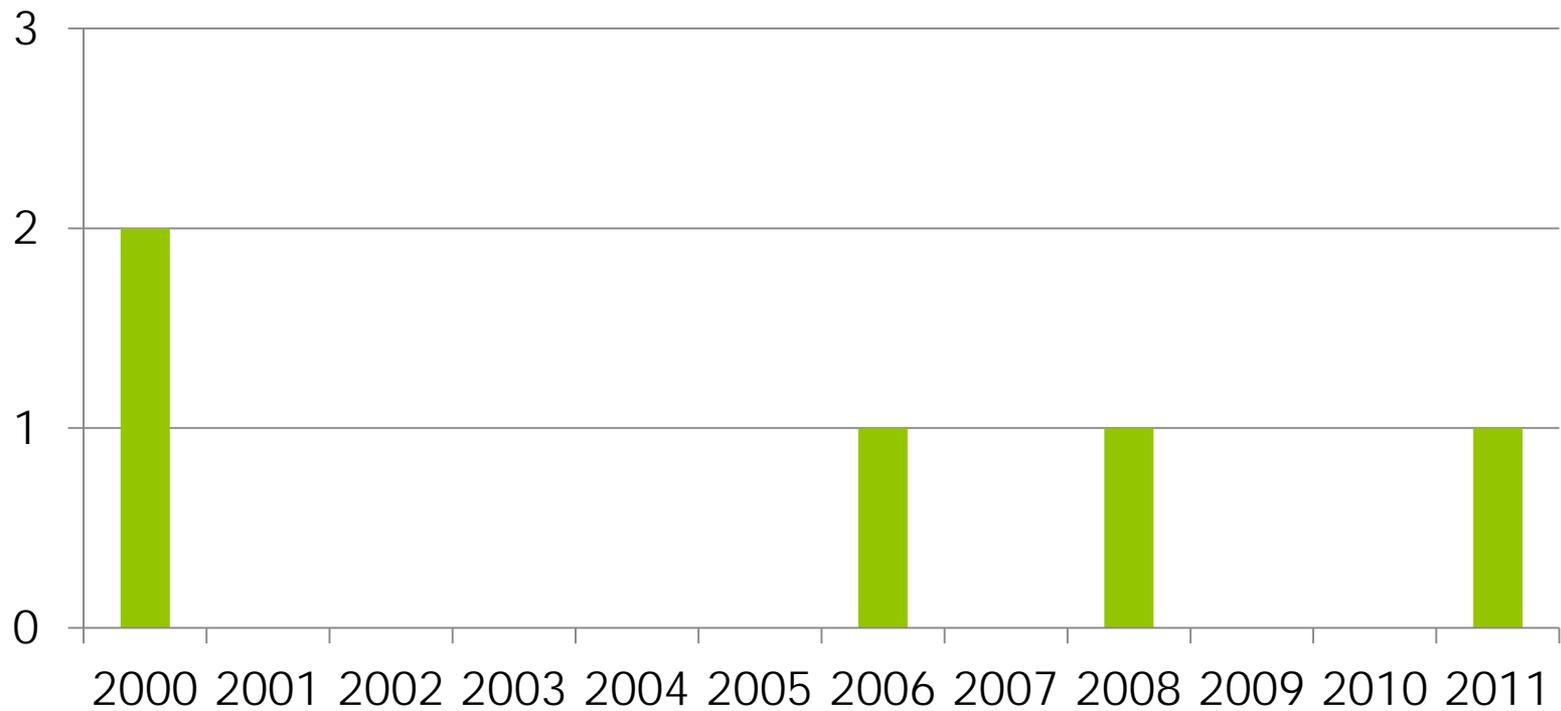
Produce:

- Rinse raw produce thoroughly under running tap water before eating, cutting, or cooking (even if the produce will be peeled).
- Scrub firm produce (e.g. melons and cucumbers) with a produce brush.
- Dry the produce with a clean cloth or paper towel.

Meats:

- Separate uncooked meats in the refrigerator.
- Wash hands, knives, countertops, and cutting boards after handling and preparing uncooked foods.
- Clean up spills in your refrigerator right away.
- Thoroughly cook raw food from animal sources, such as beef, pork, or poultry to a safe internal temperature.
- Follow USDA refrigerator storage time guidelines:
 - Hot Dogs – opened package: 1 week. Unopened package: 2 weeks.
 - Luncheon and Deli Meat – unopened package: 2 weeks. Opened packages: 3 to 5 days.
- Divide leftovers into shallow containers to promote rapid, even cooling. Cover with airtight lids or enclose in plastic wrap or aluminum foil. Use leftovers within 3 to 4 days.

Idaho outbreaks linked to unpasteurized milk



Challenges in Assisted Living Populations

- Diminished immune response in the elderly
- Decreased ability to perform hygiene functions, either from physical or mental limitations
- Functional impairments may limit urinary incontinence, diminished cough reflex
- Blunted febrile response to infections

Table 1. Common long-term care facility epidemics

Respiratory:

Influenza

Tuberculosis

S pneumoniae

Chlamydia pneumoniae

Legionella spp

Other respiratory viruses (Parainfluenza, RSV)

Gastrointestinal: (may be foodborne)

Viral gastroenteritis (Norovirus, etc)

Clostridium difficile

Salmonellosis

E coli O157:H7 colitis

Other infections:

Methicillin-resistant *Staphylococcus aureus* (MRSA)

Vancomycin-resistant *Enterococcus* (VRE)

Group A Streptococcus

Scabies

Conjunctivitis

Source: Society for Healthcare Epidemiology/Association for Professionals in Infection Control and Epidemiology Guideline:
Infection prevention and control in the long-term care facility, July 2008

Idaho-specific rules for assisted living facilities

- All facilities are required to develop and implement policies and procedures on infection control
- Staff with infectious diseases must not work (or be reassigned to where they will not infect others) until they are no longer infectious
- Name of any resident or staff with a reportable disease will be reported to the local public Health District



Perspectives in Disease Prevention and Health Promotion Update: Universal Precautions for Prevention of Transmission of Human Immunodeficiency Virus, Hepatitis B Virus, and Other Bloodborne Pathogens in Health-Care Settings

Introduction

The purpose of this report is to clarify and supplement the CDC publication entitled "Recommendations for Prevention of HIV Transmission in Health-Care Settings" (1).*

In 1983, CDC published a document entitled "Guideline for Isolation Precautions in Hospitals" (2) that contained a section entitled "Blood and Body Fluid Precautions." The recommendations in this section called for blood and body fluid precautions when a patient was known or suspected to be infected with bloodborne pathogens. In August 1987, CDC published a document entitled "Recommendations for Prevention of HIV Transmission in Health-Care Settings" (1). In contrast to the 1983 document, the 1987 document recommended that blood and body fluid precautions be consistently used for all patients regardless of their bloodborne infection status. This extension of blood and body fluid precautions to all patients is referred to as "Universal Blood and Body Fluid Precautions" or "Universal Precautions." Under universal precautions, blood and certain body fluids of all patients are considered potentially infectious for human immunodeficiency virus (HIV), hepatitis B virus (HBV), and other bloodborne pathogens.

Universal precautions are intended to prevent parenteral, mucous membrane, and nonintact skin exposures of health-care workers to bloodborne pathogens. In addition, immunization with HBV vaccine is recommended as an important adjunct to universal precautions for health-care workers who have exposures to blood (3,4).

Since the recommendations for universal precautions were published in August 1987, CDC and the Food and Drug Administration (FDA) have received requests for clarification of the following issues: 1) body fluids to which universal precautions apply, 2) use of protective barriers, 3) use of gloves for phlebotomy, 4) selection of gloves for use while observing universal precautions, and 5) need for making changes in waste management programs as a result of adopting universal precautions.

Body Fluids to Which Universal Precautions Apply

Universal precautions apply to blood and to other body fluids containing visible blood. Occupational transmission of HIV and HBV to health-care workers by blood is documented (4,5). **Blood is the single most important source of HIV, HBV, and other bloodborne pathogens in the occupational setting. Infection control efforts for HIV, HBV, and other bloodborne pathogens must focus on preventing exposures to blood as well as on delivery of HBV immunization.**

Universal precautions also apply to semen and vaginal secretions. Although both of these fluids have been implicated in the sexual transmission of HIV and HBV, they have not been implicated in occupational transmission from patient to health-care worker. This observation is not unexpected, since exposure to semen in the usual health-care setting is limited, and the routine practice of wearing gloves for performing vaginal examinations protects health-care workers from exposure to potentially infectious vaginal secretions.

Universal precautions also apply to tissues and to the following fluids: cerebrospinal fluid (CSF), synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, and amniotic fluid. The risk of transmission of HIV and HBV from these fluids is unknown.

Universal Precautions

- Apply to blood and other body fluids containing visible blood; tissues; and various body fluids (cerebrospinal fluid (CSF), synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, semen, vaginal secretions, and amniotic fluid)
- Do NOT apply to feces, nasal secretions, sputum, sweat, tears, urine, and vomitus unless they contain visible blood.



Universal Precautions: Use of Protective Barriers

- Do not recap used needles by hand
- Do not remove used needles from disposable syringes by hand
- Do not bend, break, or otherwise manipulate used needles by hand
- Place used disposable syringes and needles, scalpel blades, and other sharp items in puncture-resistant containers for disposal.
- Locate the puncture-resistant containers as close to the use area as is practical.
- Use protective barriers to prevent exposure to blood, body fluids containing visible blood, and other fluids to which universal precautions apply. The type of protective barrier(s) should be appropriate for the procedure being performed and the type of exposure anticipated.
- Immediately and thoroughly wash hands and other skin surfaces that are contaminated with blood, body fluids containing visible blood, or other body fluids to which universal precautions apply.
- Use of gloves during phlebotomy will reduce exposure but can't prevent needlesticks

Universal Precautions: Selection of Gloves

- Use sterile gloves for procedures involving contact with normally sterile areas of the body.
- Use examination gloves for procedures involving contact with mucous membranes, unless otherwise indicated, and for other patient care or diagnostic procedures that do not require the use of sterile gloves.
- Change gloves between patient contacts.
- Do not wash or disinfect surgical or examination gloves for reuse. Washing with surfactants may cause "wicking," i.e., the enhanced penetration of liquids through undetected holes in the glove. Disinfecting agents may cause deterioration.
- Use general-purpose utility gloves (e.g., rubber household gloves) for housekeeping chores involving potential blood contact and for instrument cleaning and decontamination procedures. Utility gloves may be decontaminated and reused but should be discarded if they are peeling, cracked, or discolored, or if they have punctures, tears, or other evidence of deterioration.



Residential Care and Assisted Living Newsletter

Infection Control Reminder

If your facility has residents who require assistance with personal cares, their bathrooms should be equipped with liquid soap, paper towels, and gloves.

Caregivers and other residents living in the facility need to be protected from the spread of germs. Having gloves easily accessible to caregivers promotes their use during care assistance and also reduces transmission of bodily fluids from the residents to the caregivers.

Liquid hand soap and paper towels in residents' rooms are required, so caregivers can properly wash their hands after helping a resident with cares. If these items aren't available, the potential for transmitting germs to other caregivers and residents increases exponentially.

Infection control is vital in protecting your residents. Please ensure that gloves, liquid hand soap, and paper towels are available in residents' rooms when staff is required to help with personal cares.

Thank you!