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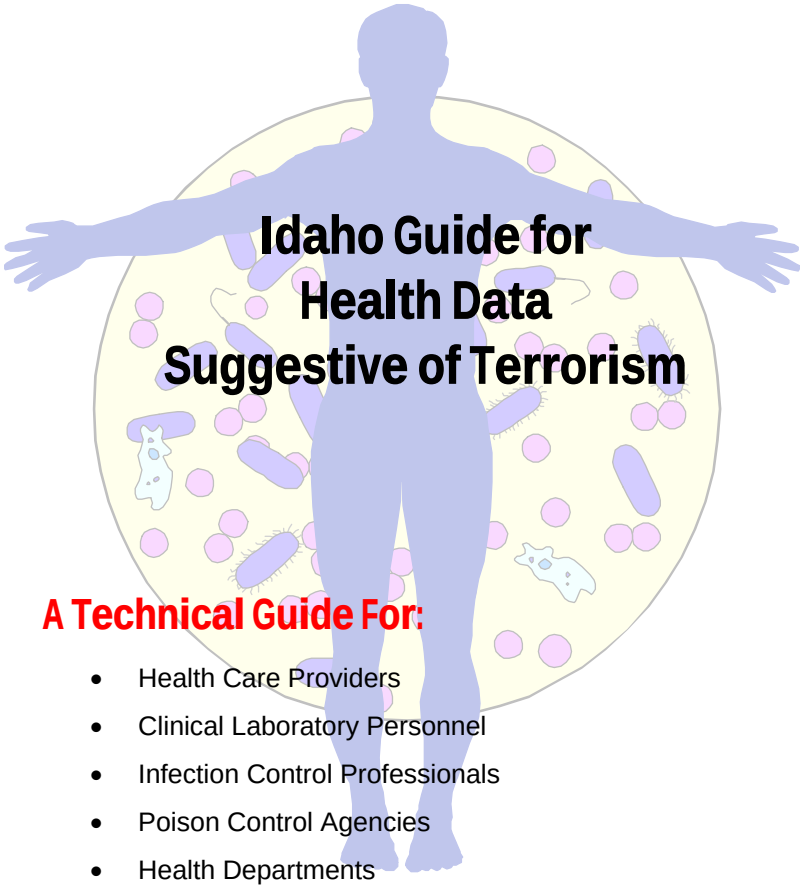

Idaho Guide for Health Data Suggestive of Terrorism

A Technical Guide For:

- Health Care Providers
- Clinical Laboratory Personnel
- Infection Control Professionals
- Poison Control Agencies
- Health Departments

IDAHO DEPARTMENT OF HEALTH & WELFARE

March 2005

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Idaho Guide for Health Data Suggestive of Terrorism

In response to the perceived threat of terrorism healthcare providers, clinical laboratory personnel, and infection control professionals may wish to improve their ability to detect, recognize, and respond to illnesses caused by release of biologic, chemical, or radiologic agents. This can be accomplished by monitoring illness patterns and diagnostic clues that might indicate an unusual disease outbreak associated with release of such agents.

This guide is intended to help healthcare providers detect and report any clusters or findings to their district or state health department. The following material enhances the Idaho Reportable Disease List by providing guidance on extraordinary occurrence of illness, including clusters, in the context of potential acts of terrorism. If detected, clusters of unusual disease syndromes must be reported within 24 hours.

BIOLOGIC AGENTS

The covert release of a biologic agent may not be recognized immediately because of the delay between exposure and illness onset, and because outbreaks associated with intentional releases might closely resemble naturally occurring outbreaks. Indications of intentional release of a biologic agent include one or more of the following:

1. A disease unusual for a given geographic area or transmission season.
2. Many cases of unexplained illness or death.
3. More severe disease than is usually expected for a specific pathogen or failure to respond to standard therapy.
4. An unusual age distribution for common diseases.
5. Unusual routes of exposure for a pathogen.
6. A disease normally transmitted by a vector that is not present in the local area.
7. A single case of disease by an uncommon agent (see page 3, Idaho Reportable Disease List).
8. Unusual strains or variants of organisms or antimicrobial resistance patterns different from those circulating.
9. A disease outbreak affecting animals and people.

Hospital data that may be used for syndromic surveillance (monitoring constellations of clinical signs and symptoms in patients) for bioterrorism-associated disease before specific diagnoses are made include ICD-9-CM-coded discharge diagnoses for outpatient visits and emergency department visits. The Centers for Disease Control and Prevention (CDC) published a report from a multi-agency working group, "Syndrome Definitions for Diseases Associated with Critical Bioterrorism-associated Agents" in October, 2003. This document defines syndrome definitions and associated ICD-9-CM-coded syndrome groups that can be used for syndromic surveillance and provides some guidance in their use. See http://www.bt.cdc.gov/surveillance/syndromedef/index.asp . The Early Aberration Reporting System (EARS) is a widely used syndromic surveillance tool that can be used with ICD-9-CM codes and other data. EARS is easy to use and is available at no cost from the CDC. For more information about EARS, see http://www.bt.cdc.gov/surveillance/ears/index.asp .

Diseases caused by biologic agents are reportable under Idaho Statute (next page, the information is also available at http://www.healthy.idaho.gov under R, Reportable Diseases.)

IDAHO REPORTABLE DISEASE LIST

Healthcare providers, laboratorians, and hospital administrators are required, according to the Rules and Regulations Governing Idaho Reportable Diseases (IDAPA 16.02.10), to report the following communicable diseases and conditions to their local health district or state Office of Epidemiology and Food Protection. Conditions highlighted in red must be reported immediately, conditions in blue, within 24 hours, and the remaining conditions within 3 working days of identification or diagnosis. Suspected cases of diseases marked by a bullet (•) should also be reported.

Rules link: http://adm/idaho.gov/adminrules/rules/idapa16/0210.pdf

Bacterial Diseases

- Anthrax [immediately]
- Botulism: foodborne, infant, other [immediately]
- Brucellosis [24 hours]
- Campylobacteriosis
- Chancroid
- *Chlamydia trachomatis*
- Cholera [24 hours]
- Diphtheria [immediately]
- *E. coli* O157:H7, other toxigenic non-O157 strains [24 hours]
- Gonorrhea *(Neisseria gonorrhoeae)*
- *Haemophilus influenzae*, invasive disease [24 hours]
- Legionellosis/Legionnaire's disease
- Leprosy
- Leptospirosis
- Listeriosis
- Lyme disease
- *Neisseria meningitidis*, invasive [24 hours]
- Pertussis [24 hours]
- Plague [immediately]
- Psittacosis
- Relapsing fever (tick and louse-borne)
- Salmonellosis (including typhoid fever) [24 hours]
- Shigellosis (all species)
- Streptococcus, group A, invasive
- *Streptococcus pneumoniae* (pneumococcus), < 18y
- Syphilis
- Tetanus
- Tuberculosis
- Tularemia [24 hours]
- Yersiniosis (all spp.)

Rickettsia and Parasites

- Amebiasis
- Cryptosporidiosis
- Giardiasis
- Malaria
- *Pneumocystis carinii* pneumonia (PCP)
- Q-fever [24 hours]
- Rocky Mountain spotted fever
- Trichinosis

Viral Diseases

- Encephalitis, viral or aseptic
- Hantavirus pulmonary syndrome [24 hours]
- Hepatitis A [24 hours]
- Hepatitis B [24 hours]
- Hepatitis C
- HIV/AIDS: positive tests (HIV antibody, HIV antigen & other HIV isolations, CD4 count < 200 cells/mm3 blood or ≤ 14%)
- HTLV (human T-lymphotrophic virus)
- Measles (rubeola) [24 hours]
- Meningitis, viral or aseptic
- Mumps
- Myocarditis, viral
- Poliomyelitis [24 hours]
- Rabies: human [immediately], animal [24 hours]
- Rabies post-exposure prophylaxis
- Rubella, including congenital rubella syndrome [24 hours]
- SARS [24 hours]
- Smallpox [immediately]
- West Nile virus infections

Other

- Cancer (report to Cancer Data Registry, 338-5100)
- Extraordinary occurrence of illness including syndromic clusters with or without an etiologic agent [24 hours]
- Foodborne illness/food poisoning [24 hours]
- HUS (hemolytic uremic syndrome) [24 hours]
- Lead ≥ 10 ug/dl whole blood
- Newborn screening abnormal findings: [24 hours]
  - Biotinidase deficiency
  - Congenital hypothyroidism
  - Maple syrup urine disease
  - Galactosemia
  - Phenylketonuria
- Reye's syndrome
- Rheumatic fever, acute
- Severe or unusual reactions to any immunization [24 hours]
- Transmissible spongiform encephalopathies (TSEs) including CJD and vCJD
- TSS (toxic shock syndrome)
- Waterborne illness [24 hours]

CHEMICAL AGENTS

Familiarity with general characteristics of a covert chemical agent release and recognition of epidemiologic clues and syndromic presentations of chemical agent exposures could improve recognition of these releases and might reduce further morbidity and mortality. Epidemiologic clues that might suggest the covert release of a chemical agent include one or more of the following:

1. An unusual increase in the number of patients seeking care for illness potentially related to chemical release.
2. Unexplained deaths among young or healthy persons.
3. Emission of unexplained odors by patients.
4. Clusters of illness in persons who have common characteristics, such as drinking water from the same source.
5. Rapid onset of symptoms after an exposure to a potentially contaminated medium.
6. A syndrome suggesting a disease associated commonly with a known chemical exposure.

Various chemical agents could be used as covert weapons, and the resulting clinical syndrome depends on the type of agent, the amount and concentration of the chemical, and the route of exposure; however, certain clinical presentations might be more common with a covert chemical release. Selected clinical syndromes and chemical etiologies are listed in the table (next page) from CDC, *Recognition of Illness Associated With Exposure to Chemical Agents —United States*, MMWR 2003;52(39);938-940. For the full article, see http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5239a3.htm .

Case definitions for chemical poisoning were published in January 2005 and can be downloaded from http://www.cdc.gov/mmwr/PDF/rr/rr5401.pdf .

Syndromic clusters with or without an etiologic agent are also reportable within 24 hours. We encourage health care providers to contact the Idaho poison control center at **1-800-860-0620 or 1-800-222-1212** for technical assistance. Call data is uploaded every 4–10 minutes to the national Toxic Exposure Surveillance System, which is used to detect sudden increases in case (or syndrome) frequency and severity, on a temporal or regional basis, that could indicate a chemical terrorism event.

Selected* clinical syndromes and potential chemical etiologies. Centers for Disease Control and Prevention. Recognition of Illness Associated With Exposure to Chemical Agents — United States, MMWR 2003;52(39);938-940

Category	Clinical Syndrome	Potential Chemical Etiology
Cholinergic crisis	• Salivation, diarrhea, lacrimation, bronchorrhea, diaphoresis, and/or urination • Miosis, fasciculations, weakness, bradycardia or tachycardia, hypotension or hypertension, altered mental status, and/or seizures	• Nicotine† • Organophosphate insecticides† - decreased acetylcholinesterase activity • Carbamate insecticides • Medicinal carbamates (e.g., physostigmine)
Generalized muscle rigidity	• Seizure-like, generalized muscle contractions or painful spasms (neck and limbs) and usually tachycardia and hypertension	• Strychnine - intact sensorium
Oropharyngeal pain and ulcerations	• Lip, mouth, and pharyngeal ulcerations and burning pain	• Paraquat† - dyspnea and hemoptysis secondary to pulmonary edema or hemorrhage; can progress to pulmonary fibrosis over days to weeks • Diquat • Caustics (i.e., acids and alkalis) • Inorganic mercuric salts • Mustards (e.g., sulfur)
Cellular hypoxia	• Mild: nausea, vomiting, and headache • Severe: altered mental status, dyspnea, hypotension, seizures, and metabolic acidosis	• Cyanide† (e.g., hydrogen cyanide gas or sodium cyanide) - bitter almond odor§ • Sodium monofluoroacetate (SMFA)† - hypocalcemia or hypokalemia • Carbon monoxide • Hydrogen sulfide • Sodium azide • Methemoglobin-causing agents
Peripheral neuropathy and/or neurocognitive effects	• Peripheral neuropathy signs and symptoms: muscle weakness and atrophy, "glove and stocking" sensory loss, and depressed or absent deep tendon reflexes • Neurocognitive effects: memory loss, delirium, ataxia, and/or encephalopathy	• Mercury (organic)† - visual disturbances, parethesias, and/or ataxia • Arsenic (inorganic)† - delirium and/or peripheral neuropathy • Thallium - delirium and/or peripheral neuropathy • Lead - encephalopathy • Acrylamide - encephalopathy and/or peripheral neuropathy
Severe gastrointestinal illness, dehydration	• Abdominal pain, vomiting, profuse diarrhea (possibly bloody), and hypotension, possibly followed by multisystem organ failure	• Arsenic† • Ricin† - inhalation an additional route of exposure; severe respiratory illness possible • Colchicine • Barium - hypokalemia common

* Not intended as a complete differential diagnosis for each syndrome or a list of all chemicals that might be used in a covert chemical release.
† Potential agents for a covert chemical release based on historic use (i.e., intentional or inadvertent use), high toxicity, and/or ease of availability.
§ Unreliable sign.

RADIOLOGIC AGENTS

Familiarity with general characteristics of overt or covert releases of radiologic agents and recognition of epidemiologic clues and syndromic presentations of radiation exposure could improve recognition of these releases and might reduce further morbidity and mortality. Exposure may be clandestine or known and recognized, such as large radiation exposure from catastrophic damage to a nuclear power station. Diagnosis of acute radiation syndrome (ARS) or cutaneous radiation syndrome in the absence of known occupational or accidental exposure suggests an intentional exposure. Multiple victims may present with ARS following substantial exposure, or victims may present individually with symptom clusters as delayed effects, over a longer period of time after exposure to contaminated sources hidden in the community. Such symptom clusters are:

1. Headache, fatigue, and weakness.
2. Partial and full thickness skin damage, hair loss, and skin ulceration.
3. Anorexia, nausea, vomiting, and diarrhea.
4. Lymphopenia, neutropenia, thrombopenia, purpura, and opportunistic infections.

Skin lesions resembling thermal burns without documented heat exposure are also suggestive of radiation exposure. Additionally, blast injuries and thermal burns may be seen in victims following a nuclear detonation. Syndromes of ARS are described in the table on the next page from the CDC Fact Sheet, "Acute Radiation Syndrome: A Fact Sheet for Physicians". The fact sheet is also available at http://www.bt.cdc.gov/radiation/arsphysicianfactsheet.asp .

Acute radiation syndrome in the absence of known occupational or accidental exposure is reportable within 24 hours as an extraordinary occurrence of illness.

Acute Radiation Syndromes *excerpt from* "Acute Radiation Syndrome: A Fact Sheet for Physicians", CDC

Syndrome	Dose*	Prodromal Stage	Latent Stage	Manifest Illness Stage	Recovery
Bone Marrow (Hematopoietic)	0.7–10 Gy (70–1000 rads) (mild symptoms may occur as low as 0.3 Gy or 30 rads)	• anorexia, nausea and vomiting • occurs 1 hour to 2 days after exposure • lasts for minutes to days	• stem cells in bone marrow are dying though patient may appear and feel well • lasts 1to 6 weeks	• drop in all blood cell counts for several weeks • anorexia, fever, malaise • primary cause of death is infection and hemorrhage • survival decreases with increasing dose • most deaths occur within a few months after exposure	• in most cases, bone marrow cells will begin to repopulate the marrow • there should be full recovery for a large percentage of individuals from a few weeks up to two years after exposure • death may occur in some individuals at 1.2 Gy (120rads) • the $LD_{50/60}$† is about 2.5 to 5 Gy (250 to 500 rads)
Gastrointestinal (GI)	10–100 Gy (1000–10,000 rads) (some symptoms may occur as low as 6Gy or 600rads)	• anorexia, severe nausea, vomiting, cramps and diarrhea • occurs within a few hours of exposure • lasts about 2 days	• stem cells in bone marrow and cells lining GI tract are dying, though patient may appear and feel well • lasts less than 1 week	• malaise, anorexia, severe diarrhea, fever, dehydration, electrolyte imbalance • death is due to infection, dehydration, and electrolyte imbalance • death occurs within 2 weeks of exposure	• the LD_{100}§ is about 10Gy (1000 rads)
Cardiovascular (CV)/ Central Nervous System (CNS)	>50 Gy (5000 rads) (some symptoms may occur as low as 20Gy or 2000 rads)	• extreme nervousness; confusion; severe nausea, vomiting, and watery diarrhea; loss of consciousness; burning sensations of the skin • occurs within minutes of exposure • lasts for minutes to hours	• patient may return to partial functionality • may last for hours but often is less	• return of watery diarrhea, convulsions, coma • begins 5 to 6 hours after exposure • death within 3 days of exposure	• no recovery

* The absorbed doses quoted here are "gamma equivalent" values. Neutrons or protons generally produce the same effects as gamma, beta or X-rays, but at lower doses. If the patient has been exposed to neutrons or protons, consult radiation experts on how to interpret the dose.

† The $LD_{50/60}$ is the dose necessary to kill 50% of the exposed population in 60 days.

§ The LD_{100} is the dose necessary to kill 100% of the exposed population

REFERENCES

The material in this brochure was adapted from the following references.

Armed Forces Radiobiology Research Institute. Medical Management of Radiological Casualties Handbook, 2nd Edition. Armed Forces Radiobiology Research Institute, Bethesda, Maryland. April 2003. Available on-line at http://www.afrri.usuhs.mil .

Centers for Disease Control and Prevention. *Acute Radiation Syndrome: A Fact Sheet for Physicians.* Available on-line at http://www.bt.cdc.gov/radiation/arsphysicianfactsheet.asp ,accessed 12/06/2004.

Centers for Disease Control and Prevention. *Recognition of Illness Associated With Exposure to Chemical Agents — United States*, *2003*. MMWR 2003; 52(39); 938-940. Available on-line at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5239a3.htm .

Centers for Disease Control and Prevention. *Recognition of Illness Associated With the Intentional Release of a Biologic Agent*, MMWR 2001; 50(41); 898-7. Available on-line at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5041a2.htm .

Centers for Disease Control and Prevention, *Syndrome Definitions for Diseases Associated with Critical Bioterrorism-associated Agents,* October 23, 2003. Available on-line at http://www.bt.cdc.gov/surveillance/syndromedef/index.asp .

U.S. Army Medical Research Institute of Infectious Diseases. USAMRIID's Medical Management of Biological Casualties Handbook, 5th Edition. U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, Frederick, Maryland. August 2004. Available on-line at http://www.usamriid.army.mil/education/bluebook.htm .

REPORTING SUSPECTED CASES*

To provide emergency notification or immediate reports of reportable diseases or conditions:

After Business Hours

Call Idaho State Communications, **1-800-632-8000**, and a public health official will be paged.

During Business Hours

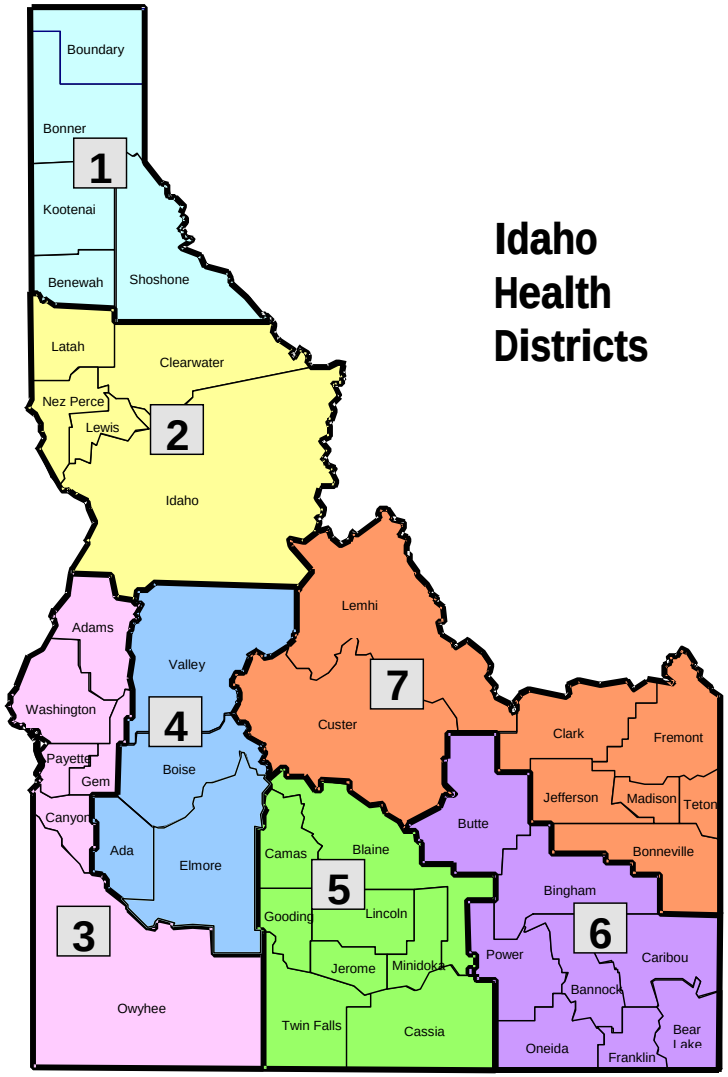
Monday – Friday, 8:00 a.m. – 5:00 p.m.
Call your district health department or the Idaho Department of Health and Welfare, Office of Epidemiology and Food Protection.

	Health Department	Phone
1	Panhandle Health District	208-666-9269
2	North Central District Health Department	208-799-3100
3	Southwest District Health	208-455-5442
4	Central District Health Department	208-327-8625
5	South Central District Health	208-734-5900
6	Southeastern District Health Department	208-239-5231 208-478-6321
7	District 7 Health Department	208-522-0310
State	IDHW Office of Epidemiology and Food Protection	208-334-5939

Please see the Idaho Health District Map on page 10

**All reports are confidential and must include:*

- *Disease or condition reported*
- *Patient's name, age, sex, address (including city and county), phone number*
- *Physician's name, address, phone number*



Idaho Health Districts

Costs associated with this publication are available from the

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