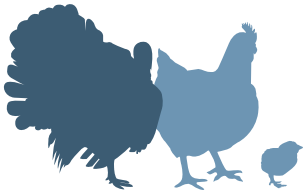

Zoonotic Diseases of Poultry

The Center for Food Security & Public Health
Iowa State University® College of Veterinary Medicine

Zoonotic Disease *Etiologic Agent*	R	Transmission	Clinical Signs in Poultry Prevention for Poultry	Clinical Signs in People Prevention for People
Avian Influenza *Influenzavirus A* *Highly pathogenic strains are reportable		**Direct contact:** nasal discharge **Fomites** **Inhalation:** droplets and aerosols from coughing/sneezing	**Respiratory:** (avian, low path) depression; respiratory signs (coughing, sneezing, nasal and ocular discharge) **Systemic:** (avian, high path) acute death; edema and cyanosis of comb, head, wattle, snood; green diarrhea Clean and disinfect; practice good biosecurity; provide good ventilation; minimize stress; prevent exposure to wild birds; all-in, all-out; quarantine, test new animals; isolate infected animals; cull depending on virus strain; destroy infected carcasses; keep sick people away from animals	**Respiratory**: fever; chills; myalgia; upper respiratory symptoms; sore throat; lethargy; headache **Gastrointestinal:** (especially children) poor appetite; nausea; vomiting; diarrhea Wash hands; wear PPE (gloves, mask or respirator, coveralls); don't touch your face; get the flu vaccine every year; avoid sick animals, wild birds; don't eat or drink around animals
Campylobacteriosis *Campylobacter jejuni*	H	**Ingestion:** feces; contaminated meat, soil, water **Direct contact:** infected animals **Fomites**	**Incubation period:** 3-25 days **Asymptomatic** **Gastrointestinal:** acute, fatal enteritis in new chicks Clean and disinfect; remove manure; prevent overcrowding;	**Incubation period:** 1-10 days **Gastrointestinal:** mild to severe GI distress; fulminant or relapsing colitis; fever; headache; muscle pain; children and immunosupporessed most at risk for diarrhea Wash hands; wear gloves; control rodents; do not consume undercooked meat, untreated water; wash fruits, vegetables; disinfect kitchen surfaces; avoid cross-contamination
Colibacillosis *Escherichia coli*	H	**Ingestion:** contaminated soil, food, water **Direct contact:** feces **Fomites**	**Incubation period:** varies **Septicemia:** airsacculitis; salpingitis; granulomas Clean and disinfect; remove manure; prevent overcrowding; all-in, all-out	**Incubation period:** 1-16 days with most signs in 3-4 days **Gastrointestinal:** watery diarrhea; hemorrhagic colitis; nausea; vomiting; abdominal pain; cramping **Systemic:** hemolytic uremic syndrome (HUS); fever Wash hands; wear gloves; keep boots outside the home; launder dirty clothing separately; cook meat thoroughly, avoid cross-contamination
Erysipelas *Erysipelothrix rhusiopathiae* Erysipeloid in people		**Direct contact:** animals, fluids, feces **Ingestion:** contaminated soil, feed, or water; cannibalism (poultry) **Iatrogenic:** artificial insemination in turkeys **Vectors: (mechanical):** poultry red mite	**Incubation period:** 1-7 days **Acute:** sudden death **Systemic:** depressed, unsteady gait **Chronic (uncommon):** cutaneous lesions, swollen hocks Clean and disinfect; remove manure; control rodents; vaccinate (pigs, turkeys); cull symptomatic pigs; destroy infected carcasses	**Incubation period:** 1-7 days **Cutaneous**: acute localized cellulitis; painful red/purple firm swelling, usually on hands and fingers; generalized disease possible Wash hands; wear gloves; cover wounds

R=Reportable Disease; A=for animals, H=for humans

Zoonotic Diseases of Poultry, continued

Zoonotic Disease *Etiologic Agent*	R	Transmission	Clinical Signs in Poultry Prevention for Poultry	Clinical Signs in People Prevention for People
Favus/ Dermatophytosis *Microsporum gallinae*		**Direct contact:** infected birds; skin lesions **Fomites:** soil; equipment; clothing; people; housing	**Incubation period:** 2-4 weeks **Asymptomatic** **Cutaneous:** small, white chalky deposits on comb; can coalesce to dull white moldy layer several millimeters thick; if feathered portions, bird may be emaciated and die	**Incubation period:** 1-2 weeks **Cutaneous:** pink to red, scaly, slightly elevated skin lesions; follicular papules, pustules, or vesicles at the borders Immunocompromised may develop extensive skin lesions that penetrate deep into the skin and tissues
			Clean and disinfect, quarantine new animals; isolate and treat affected animals; usually self-limiting	Wash hands; wear gloves when handling affected birds;
Fowl Mites/Acariasis *Dermanyssus gallinae, Ornithonyssus sylviarum*		**Fomites:** clothing; footwear; egg baskets; equipment **Carriers:** wild birds, rodents *mites may transmit viral and bacterial infections to poultry (*Erysipelothrix;* avian influenza A; *Salmonella*)	**Asymptomatic** **Cutaneous:** pruritus; excessive preening; restlessness; lower legs and breast most affected; skin on legs may become thickened, scaly, and crusty; feather loss and secondary skin trauma from scratching and biting themselves; blackened, 'dirty-looking' feathers from *Orn. sylviarum*, crusts, thickened skin, scabs, and cracks around cloaca **Reproductive:** decreased egg production; decreased male reproduction **Systemic:** anemia; decreased body weight; death in severely affected birds;	**Incubation period:** <24 hours **Cutaneous:** painful bite; pruritus (most intense at night); allergic dermatitis; rash; papules; vesicles; lesions often on backs of hands and forearms in poultry workers
			Clean and disinfect; nest and litter management; acaricides; minimize hiding places of mites; power spray surfaces and mite hiding places; isolate and treat new birds; prevent intermingling of groups; prevent exposure to rodents, wild birds, and their nests; monitor birds weekly or bimonthly at night for signs of pruritus and agitation	Wash hands, wear gloves and protective clothing when handling poultry and material in their environment; environmental hygiene (frequent vacuuming, change bedding, wash clothing)
Newcastle disease *Avian paramyxovius 1*		**Direct contact:** feces, respiratory secretions **Inhalation:** aerosols **Ingestion:** infected tissues; contaminated feed, water **Fomites** **People: Direct contact:** birds; secretions; feces; feathers; litter	**Respiratory:** coughing; sneezing; dyspnea; crackles **Reproductive:** decreased egg production; misshapen and abnormal eggs (velogenic strains) **Neurologic:** paresis or paralysis; tremors; torticollis **Systemic:** (velogenic strains) cyanosis; conjunctivitis and edema; head and neck swelling; sudden death	**Ocular:** conjunctivitis (usually from large viral exposures)
			Clean and disinfect; remove manure; vaccinate; purchase from disease-free flocks; practice good biosecurity; all-in, all-out; control flies; prevent feed contamination; prevent exposure to wild birds; quarantine new birds; isolate, depopulate infected birds; remove, destroy carcasses;	Wash hands; wear PPE (gloves, mask, eye protection, coveralls) when handling birds; don't touch eyes/face

Zoonotic Diseases of Poultry, continued

Zoonotic Disease *Etiologic Agent*	R	Transmission	Clinical Signs in Poultry Prevention for Poultry	Clinical Signs in People Prevention for People
Avian chlamydiosis/ Ornithosis *Chlamydia psittaci* Psittacosis in people		**Inhalation:** aerosolized feces, respiratory secretions **Ingestion:** feces; carcasses; contaminated feed, water **Fomites** **People: Inhalation:** aerosolized feces, respiratory secretions **Direct contact:** bites, beak contact	**Incubation period:** 5-14 days up to 30 days **Asymptomatic** in chickens; turkeys, ducks affected **Ocular:** conjunctivitis **Respiratory:** oculonasal discharge; sneezing; dyspnea **Gastrointestinal:** green to yellow diarrhea **Reproductive:** decreased egg production **Neurologic:** (ducks) trembling, abnormal gait	**Incubation period: 7-28 days** **Flu-like:** fever; headache; chills; myalgia; sore throat **Respiratory:** severe atypical pneumonia; dyspnea; dry to mucopurulent cough **Reproductive:** severe illness; abortion; preterm birth
			Clean and disinfect; remove manure; dispose of carcasses properly; control rodents; minimize stress, prevent overcrowding; quarantine and test new birds; isolate and treat infected birds; prevent aerosolization of dust, feces, feathers; prevent exposure to wild birds; keep infected people away from poultry	Wash hands; wear PPE (gloves, respirator, eye protection, coveralls); keep birds in well-ventilated areas; clean cages regularly, but dampen first to decrease aerosols; don't clean bird feeders indoors; keep children away from sick, dead birds; isolate if you are ill
Salmonellosis *Salmonella* spp. ser. Typhimurium ser. Enteritidis	H	**Ingestion:** contaminated feed, water **Direct contact:** infected animal, feces **Fomites** **Reproductive:** vertical (poultry) **Mechanical vectors:** flies	**Incubation period:** varies; less than 1-2 days if severe **Asymptomatic** **Systemic:** (poultry hatchlings) septicemia; CNS signs; pneumonia	**Incubation period:** 6-72 hours **Gastrointestinal:** acute diarrhea (+/- blood); abdominal pain; nausea; vomiting; dehydration **Flu-like:** fever; muscle pain; headache; malaise; chills **Systemic:** (immunocompromised most at risk) bacteremia; septicemia
			Clean and disinfect, especially equipment, buildings; remove manure; practice good biosecurity; control vectors; reduce stress; prevent overcrowding; provide colostrum; purchase from Salmonella-free sources; quarantine new animals; isolate and treat, or cull, carriers; all-in, all-out; vaccinate (does not protect fully)	Wash hands; wear gloves; wash and/or peel fruits, vegetables; don't consume raw dairy; cook meat, poultry, eggs to proper internal temperature; reheat foods thoroughly; refrigerate leftovers; don't cross-contaminate; don't drink untreated water; avoid high risk animals – reptiles, amphibians, young poultry
Tuberculosis, avian *Mycobacterium avium*		**Ingestion:** infected carcasses; contaminated water **Inhalation:** aerosols People **Direct contact:** feces, birds **Ingestion:** contaminated water **Inhalation:** aerosols from soil, feces	**Incubation period: not known** **Systemic:** emaciation; granulomas (GI, tract, spleen, liver, bone marrow); death	Most cases in elderly or immunocompromised people **Respiratory:** cough; fever; fatigue; night sweats **Lymphadenitis:** unilateral swelling of cervical LN **Systemic**: disseminated disease (HIV patients)
			Clean and disinfect (organism may be resistant); remove manure; don't overcrowd; all-in, all-out; don't keep free-range flocks; provide good ventilation; quarantine, test new birds; buy from TB-free sources; depopulate; burn carcasses; keep swine, poultry apart	Wash hands; wear PPE (gloves, mask, especially if vulnerable); practice good biosecurity; stay away from infected birds; also wear mask when gardening or working with dusty soil