

February 23, 2023

Pesticide Registration Notice (PR Notice) 2023-01

NOTICE TO MANUFACTURERS, FORMULATORS, PRODUCERS, REGISTRANTS AND APPLICATORS OF PESTICIDE PRODUCTS

ATTENTION: Persons Responsible for Public Health Programs and Those Responsible for Registration of Pesticide Products

SUBJECT: Lists of Pests of Significant Public Health Importance – Revised 2023

This notice updates and replaces PR Notice 2002-1, which identifies pests of significant public health importance. Section 28(d) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requires the United States Environmental Protection Agency (EPA), in coordination with the United States Department of Health and Human Services (HHS) and United States Department of Agriculture (USDA), to identify pests of significant public health importance and to develop and implement programs to improve and facilitate the safe and necessary use of chemical, biological and other methods to combat and control such pests of public health importance.

The lists were first published in 2002, fulfilling the requirement of FIFRA section to identify pests of significant public health importance. EPA, HHS and USDA believe that pests, diseases, and control techniques have changed since 2002. The lists provide an interagency baseline for the federal government and the public to begin any discussions on government regulation and control of disease or vectors of disease agents. EPA makes this information available, in part, to establish a platform for stakeholders, such as public health departments or pesticide registrants to prioritize their workloads and resource allocations. The Office of Pesticide Programs, EPA, coordinated the review by experts in public health and/or pesticide use patterns to compile these lists. No person is required to take any action in response to this notice.

The publication of these lists do not affect the regulatory status of any pesticide registration, pesticide registration exemption under FIFRA section 25(b), pesticide device, or application for registration of any pesticide product or device. These lists do not, by itself, determine whether a pesticide product might be considered a “public health pesticide” as that term is used in FIFRA. That term is defined in FIFRA section 2(nn); determining whether any specific pesticide is a public health pesticide is beyond the scope of this PR Notice.

The Agency has determined that the lists of pests of significant public health importance required under FIFRA section 28(d) can be established independently of the definition of “public health pesticide” in section 2(nn). EPA is interpreting the term “significant public health importance” broadly, to include pests that pose a widely recognized risk to considerable numbers of people.

I. BACKGROUND

FIFRA section 28(d) charges EPA with identifying “pests of significant public health importance.” FIFRA section 2(t) defines the term “pest” as meaning:

(1) any insect, rodent, nematode, fungus, weed, or (2) any other form of terrestrial or aquatic plant or animal life or virus, bacteria, or other micro-organism (except viruses, bacteria, or other micro-organism on or in living man or other living animals) which the Administrator declares to be a pest under section 25(c)(1).

Pursuant to the authorization in the second part of this definition, EPA has broadly declared that the term pest includes all members of each of the categories of organisms identified in FIFRA section 2(t) in circumstances where they are deleterious to man or the environment, except for the organisms specifically excluded by the definition (See 40 CFR 152.5).

II. THE LISTS

EPA has determined that the pests identified in the Appendix are pests of significant public health importance as that term is used in FIFRA section 28(d). Although these lists are derived in large part from review of the pesticide/pest combinations for which efficacy (product performance) data are generally required to be submitted and reviewed prior to registration; in no way should this be interpreted to mean that EPA has or would base any regulatory action solely on these lists. EPA is publishing these lists separate from any statutory or regulatory conclusions which may be associated with public health pesticides. Additionally, these lists do not account for unanticipated nomenclature changes and/or novel pests. A brief description of the pests and their potential impact on the public's health each is provided below:

Arthropods. The listed arthropods may cause asthma or trigger allergies, contaminate food, irritate skin, cause direct injury, or carry agents causing diseases such as Lyme disease, epidemic typhus, trench fever, epidemic relapsing fever, malaria, encephalitis (St. Louis, Eastern, Western, West Nile and LaCrosse), yellow fever, dengue fever and many others.

Vertebrates. The listed organisms have the potential for direct human injury and can act as disease reservoirs for rabies and other diseases. The rats and mice include those that spread rodent-borne diseases and contaminate food for human consumption.

Microorganisms and acellular particles. This category includes listed bacteria, fungi, protozoans, viruses, virusoids, and prions. The microorganisms and acellular particles listed in this category cause diseases such as COVID-19, cholera, meningitis, Legionnaire's Disease and many others.

As with the original 2002 lists (PR Notice 2002-1)¹, these lists identify the pests that EPA, HHS and USDA currently consider to be of significant public health importance. As deemed necessary, the Agency will update the lists of pests of significant public health importance. Also, EPA notes that the listings in the "Public Health Importance/Possible Clinical Significance" column are not exhaustive and can vary in their presence and severity (up to and including death) based on a variety of situation specific factors.

¹ <https://www.epa.gov/sites/production/files/2014-04/documents/pr2002-1.pdf>

Interested parties are invited to petition the Agency regarding the amendment of these lists. This petition should include the common use name and scientific name of the pest, and a rationale regarding the public health threat posed by this pest. These petitions can be sent to the contact under **Part V. For Additional Information.**

III. USE OF THE LISTS OF PESTS OF SIGNIFICANT PUBLIC HEALTH IMPORTANCE BY THE AGENCY

The Agency will use the lists of pests of significant public health importance to:

1. Fulfill the requirements set forth in FIFRA section 28(d)
2. Together with other federal agencies, develop and implement programs to improve and facilitate the safe and necessary use of chemical, biological and other methods to control pests of public health importance
3. To identify pests that might warrant additional scrutiny and analyses of benefits before changing, restricting or eliminating a use to control a pest of public health significance

IV. WHAT REGISTRANTS SHOULD DO

Registrants do not need to do anything in response to this notice.

V. FOR ADDITIONAL INFORMATION

If you have questions regarding this PR Notice, please contact one of the following individuals:

Name: Susan Jennings
phone: (706) 355-8574
e-mail: jennings.susan@epa.gov

You may also mail a written inquiry to EPA using the following address:

U.S. Environmental Protection Agency
Office of Pesticide Programs (Mailcode 7505M)
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

VI. Signature

This PR Notice is digitally signed today, February 23, 2023.

Michael Goodis,
Acting Director, Office of Pesticide Programs.

Appendix

Appendix to PR Notice 2023-01 (02/23/2023)

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Arthropod Pests		
Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
ARACHNIDS		
Ixodida		
Soft Ticks		Argasidae
Relapsing fever ticks (and allied species)	<i>Ornithodoros turicata</i>	Tick-borne relapsing fever
	<i>Ornithodoros hermsi</i>	
	<i>Ornithodoros parkeri</i>	
Hard Ticks		Ixodidae
American dog tick	<i>Dermacentor variabilis</i>	Rocky Mountain spotted fever, Tularemia, tick paralysis,
Rocky Mountain wood tick	<i>Dermacentor andersoni</i>	Colorado tick fever, Rocky Mountain spotted fever, Tularemia, tick paralysis,
Pacific Coast tick	<i>Dermacentor occidentalis</i>	Pacific Coast tick fever
Western blacklegged tick	<i>Ixodes pacificus</i>	Anaplasmosis, <i>Borrelia miyamotoi</i> disease, Lyme disease
Blacklegged tick (deer tick)	<i>Ixodes scapularis</i>	Anaplasmosis, <i>Borrelia miyamotoi</i> disease, Lyme disease, Babesiosis, Powassan encephalitis
Brown dog tick	<i>Rhipicephalus sanguineus</i>	Rocky Mountain spotted fever
Lone star tick	<i>Amblyomma americanum</i>	Ehrlichiosis, Bourbon virus disease, Heartland virus disease, Alpha-gal syndrome (red meat allergy)
Gulf Coast tick	<i>Amblyomma maculatum</i>	<i>Rickettsia parkeri</i> rickettsiosis
Trombidiformes		
Chigger mites		Trombiculidae
Common chiggers	<i>Eutrombicula</i> spp.	Dermatitis with risk of secondary infection
Follicle mites		Demodicidae
Dog follicle mite	<i>Demodex canis</i>	Scabies
Human follicle mites	<i>Demodex brevis</i>	Roseacea, Demodicosis, Demodicidosis, eye infections
	<i>Demodex folliculorum</i>	
Sarcoptiformes		
Dust Mites		Pyroglyphidae
American house dust mite	<i>Dermatophagoides farina</i>	Allergic reaction, Asthma
European house dust mite	<i>Chorioptes pteronyssinus</i>	
Itch Mites		Sarcoptidae
Scabies mite	<i>Sarcoptes scabiei</i>	Scabies

Arthropod Pests		
Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
Araneae		
Spiders		
Widow spiders, including: Southern black widow Northern black widow Western black widow Brown widow	<i>Latrodectus mactans</i> <i>Latrodectus variolus</i> <i>Latrodectus hesperus</i> <i>Latrodectus geometricus</i>	Venomous bite
Recluse spiders, including: Brown recluse	<i>Loxosceles reclusa</i>	
Scorpiones		
Scorpions		
Bark scorpions	<i>Centruroides sculpturatus</i>	Venomous sting
	<i>Centruroides exilicauda</i>	
	<i>Centruroides vittatus</i>	
Chilopoda		
Centipedes		
House centipede	<i>Scutigera coleoptrata</i>	Venomous bite
Florida blue centipede	<i>Hemiscolopendra marginata</i>	
Scolopendra centipedes	<i>Scolopendra</i> spp.	
INSECTS		
Blattodea		
Cockroaches		
American cockroach	<i>Periplaneta americana</i>	Allergic reaction, asthma, Salmonellosis, <i>E. coli</i> infection, hepatitis
Australian cockroach	<i>Periplaneta australasiae</i>	
Brown cockroach	<i>Periplaneta brunnea</i>	
Smokybrown cockroach	<i>Periplaneta fuliginosa</i>	
Brownbanded cockroach	<i>Supella longipalpa</i>	
German cockroach	<i>Blattella germanica</i>	
Oriental cockroach	<i>Blatta orientalis</i>	
Anoplura		
Sucking lice		
Body louse (cootie)	<i>Pediculus humanus humanus</i>	Epidemic typhus, epidemic relapsing fever, Trench fever, dermatitis with risk of secondary infection
Head louse	<i>Pediculus humanus capitis</i>	
Crab louse (crabs)	<i>Phthirus pubis</i>	

Arthropod Pests		
Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
Heteroptera		
True bugs		
Bed bug	<i>Cimex lectularis</i>	Bites, allergic reactions
Tropical bed bug	<i>Cimex hemipterus</i>	
Masked hunter	<i>Reduvius personatus</i>	Chagas disease, allergic reactions
Large kissing bug	<i>Triatoma rubrofasciata</i>	Chagas disease, allergic reactions
Bloodsucking conenose	<i>Triatoma sanguisuga</i>	
Western bloodsucking conenose	<i>Triatoma protracta</i>	
Diptera		
Horse & Deer Flies		
Horse flies	<i>Tabanus spp.</i>	Painful Bite, allergic reactions, mechanical transmission of anthrax
Deer flies	<i>Chrysops spp.</i>	Painful Bite, allergic reactions, Tularemia
Calyptrate Flies		
House fly	<i>Musca domestica</i>	Salmonellosis, Shigella, dysentery, myiasis, allergic reactions
Stable fly	<i>Stomoxys calcitrans</i>	
Little house fly	<i>Fannia canicularis</i>	
Horse bot fly	<i>Gasterophilus intestinalis</i>	Ocular myiasis, cutaneous myiasis
Nose bot fly	<i>Gasterophilus haemorrhoidalis</i>	
Torsalo (human bot fly)	<i>Dermatobia hominus</i>	
Sheep ked	<i>Melophagus ovinus</i>	Myiasis
Flesh flies	Sarcophagidae, including <i>Sarcophaga</i> and <i>Wohlfahrtia</i> spp.	Myiasis, mechanical vector of pathogens
Blow flies	Calliphoridae, including <i>Phaenicia</i> and <i>Calliphora</i> spp.	Myiasis, mechanical vector of pathogens
Screwworm	<i>Cochliomyia hominivorax</i>	Myiasis
Secondary screwworm	<i>Cochliomyia macellaria</i>	

Arthropod Pests		
Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
Biting Midges and Sand Flies		
"No-See-Ums"	<i>Culicoides</i> spp., <i>Leptoconops</i> spp.	Dermatitis with risk of secondary infection, allergic reactions
Punkies		
Biting midges		
Sand flies	<i>Lutzomyia</i> spp., <i>Phlebotomus</i> spp.	Dermatitis with risk of secondary infection, American dermal leishmaniasis
Black flies	Simuliidae; includes <i>Simulium</i> and <i>Prosimulium</i> spp.	River blindness, dermatitis with risk of secondary infection, painful bite, allergic reactions
Black gnats		
Mosquitoes Culicidae		
Mosquito species that vector disease	<i>Aedes</i> spp. <i>Culex</i> spp. <i>Culiseta</i> spp. <i>Ochlerotatus</i> spp. <i>Anopheles</i> spp. <i>Psorophora</i> spp. <i>Coquillettidia</i> spp. <i>Mansonia</i> spp.	Viral diseases, such as: West Nile, St. Louis encephalitis Eastern equine encephalitis, Western equine encephalitis, Venezuelan equine encephalitis, LaCrosse, Jamestown Canyon, Cache Valley virus disease, Dengue fever, Yellow fever, Malaria, Zika, Chikungunya, Japanese encephalitis (note: not all diseases are vectored by every genera)
Siphonaptera		
Fleas		
Cat flea	<i>Ctenocephalides felis</i>	Bartonella, Murine typhus, tapeworm infection, dermatitis with a risk of secondary infection, allergic reactions, painful bite
Dog flea	<i>Ctenocephalides canis</i>	Dermatitis with risk of secondary infection, allergic reactions, painful bite
Human flea	<i>Pulex irritans</i>	Bubonic plague, Murine plague (endemic typhus), Dermatitis with risk of secondary infection, allergic reactions, painful bite
Sticktight flea	<i>Echidnophaga gallinacea</i>	Bubonic plague, Murine plague (endemic typhus), Dermatitis with risk of secondary infection, allergic reactions, painful bite
Oriental rat flea	<i>Xenopsylla cheopis</i>	
Chigoe	<i>Tunga penetrans</i>	
Other fleas	<i>Oropsylla</i> spp. <i>Thrassis</i> spp. <i>Ceratophyllus gallinae</i>	

Arthropod Pests		
Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
Hymenoptera		
Stinging Wasps, Bees, & Ants		
Yellowjackets	<i>Vespula</i> spp.	Painful stings, allergic reactions
European hornet	<i>Vespa crabro</i>	
Bald-faced hornet	<i>Dolichovespula maculata</i>	
Paper wasps	<i>Polistes</i> spp.	
Thread-waisted wasps (including mud daubers)	Sphecidae: Various species	
Ants Formicidae		
Pharaoh ant	<i>Monomorium pharaonis</i>	Feed on wounds
Fire ants, including: Southern fire ant Tropical fire ant Red imported fire ant Black imported fire ant European fire ant	<i>Solenopsis</i> spp. <i>Solenopsis xyloni</i> <i>Solenopsis geminata</i> <i>Solenopsis invicta</i> , <i>Solenopsis richteri</i> <i>Myrmica rubra</i>	Painful stings, allergic reactions
Harvester ants	<i>Pogonomyrmex</i> spp.	Painful stings, allergic reactions
Bees		
Africanized honey bee	<i>Apis mellifera scutellata</i>	Painful stings, allergic reactions

Vertebrate Pests		
Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
Reptiles		
Rattlesnakes	<i>Crotalus</i> spp.	Direct injury, venomous bites
Copperhead and cottonmouth snakes	<i>Agkistrodon</i> spp.	
Coral snakes	<i>Micrurus</i> spp.	
Brown tree snake	<i>Boiga irregularis</i>	
Fish		
Great white shark	<i>Carcharodon carcharias</i>	Direct Injury
Tiger shark	<i>Galeocerdo cuvier</i>	
Bull shark	<i>Carcharhinus leucas</i>	
Asian carps	<i>Cyprinus</i> spp. <i>Ctenopharyngodon</i> spp. <i>Hypophthalmichthys</i> spp.	
Birds		
Geese	Subfamily Anserinae	Histoplasmosis, cryptococcosis, psittacosis, avian influenza, direct injury, bird strike at airports
Mute swan	<i>Cygnus olor</i>	
Gulls	Subfamily Larinae	
Coot	<i>Fulica americana</i>	
Rock dove (domestic pigeon)	<i>Columba livia</i>	
Cliff swallow	<i>Petrochelidon pyrrhonota</i>	
Barn swallow	<i>Hirundo rustica</i>	
House (English) sparrow	<i>Passer domesticus</i>	
American crow	<i>Corvus brachyrhynchos</i>	
Fish crow	<i>Corvus ossifragus</i>	
European starling	<i>Sturnus vulgaris</i>	
House finch	<i>Carduelis purpureus</i>	
Blackbirds	Family Icteridae	
Common raven	<i>Corvus corax</i>	
Chihuahuan raven	<i>Corvus cryptoleucus</i>	
Black vulture	<i>Cathartes aura</i>	
Turkey vulture	<i>Coragyps atratus</i>	

Vertebrate Pests		
Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
Mammals		
Bats		
Big brown bat	<i>Eptesicus fuscus</i>	Rabies, histoplasmosis, salmonellosis, yersiniosis, Nipah virus, Ebola virus, SARS coronavirus
Little brown bat	<i>Myotis lucifugus</i>	
Brazilian (Mexican) free-tailed bat	<i>Tadarida brasiliensis</i>	
Big eared bat	<i>Corynorhinus townsendii</i>	
Common vampire bat	<i>Desmodus rotundus</i>	
Mice		
House mouse	<i>Mus musculus</i>	Hantavirus, salmonellosis, tularemia, leptospirosis, lymphocytic chorio-meningitis, rat bite fever, other diseases, allergy and asthma triggers from urine/hair/dander
Deer mouse	<i>Peromyscus maniculatus</i>	
Cotton mouse	<i>Peromyscus gossypinus</i>	
White-footed mouse (White-footed deer mouse)	<i>Peromyscus leucopus</i>	
Eastern harvest mouse	<i>Reithrodontomys humuli</i>	
Golden mouse	<i>Ochrotomys nuttalli</i>	
Rats		
Norway rat	<i>Rattus norvegicus</i>	Leptospirosis, plague, rat bite fever, salmonellosis, tularemia, lymphocytic chorio-meningitis, direct injury, allergy and asthma triggers from urine/hair/dander
Roof rat	<i>Rattus rattus</i>	
Polynesian rat	<i>Rattus exulans</i>	
Cotton rats	<i>Sigmodon</i> spp.	
Mexican woodrat	<i>Neotoma mexicana</i>	
Southern plains woodrat	<i>Neotoma micropus</i>	
White-throated woodrat	<i>Neotoma albigula</i>	

Vertebrate Pests		
Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
Squirrels		
Flying squirrels	<i>Glaucomys</i> spp.	Sylvatic typhus, leptospirosis
Ground squirrels and prairie dogs	<i>Uroditellus</i> spp., <i>Spermophilus</i> spp., <i>Ictidomys</i> spp., <i>Poliocitellus</i> spp., <i>Cynomys</i> spp., <i>Xerospermophilus</i> spp., <i>Callospermophilus</i> spp., <i>Otospermophilus</i> spp., <i>Ammospermophilus</i> spp.	Plague, tularemia
Tree squirrels and chipmunks	<i>Sciurus</i> spp., <i>Tamias</i> spp., <i>Eutamias</i> spp., <i>Tamiasciurus</i> spp.	Leptospirosis, salmonellosis, tularemia, rabies, direct injury
Woodchuck	<i>Marmota monax</i>	
Yellow-bellied marmot	<i>Marmota flaviventris</i>	
Other Mammals		
Bears	Family Ursidae	Toxoplasmosis, brucellosis, trichinellosis, direct injury
Coyote	<i>Canis latrans</i>	Rabies, canine distemper virus, leptospirosis, direct injury
Arctic fox	<i>Alopex lagopus</i>	
Gray fox	<i>Urocyon cinereoargenteus</i>	
Red fox	<i>Vulpes vulpes</i>	
Gray wolf	<i>Canis lupus</i>	
Wild (feral) dog	<i>Canis lupus familiaris</i>	
Wild (feral) cat	<i>Felis catus</i>	Toxoplasmosis, rabies, direct injury
Wild (feral) horse	<i>Equus caballus</i>	Rabies, leptospirosis, salmonellosis, campylobacteriosis, cryptosporidiosis, direct injury
Wild (feral) swine Javelina (collared peccary)	<i>Sus scrofa</i> <i>Dicotyles tajacu</i>	Leptospirosis, brucellosis, <i>E. coli</i> infection, salmonellosis, toxoplasmosis, rabies, swine influenza viruses, trichinosis, giardiasis, cryptosporidiosis, direct injury
Deer and elk	Family Cervidae	Leptospirosis, salmonellosis, chlamydiosis, campylobacteriosis, cryptosporidiosis, giardiasis, direct injury
American bison	<i>Bison bison</i>	Brucellosis, direct injury
Mongoose	Family Herpestidae	Leptospirosis, direct injury

Vertebrate Pests		
Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
Other Mammals (continued)		
Mountain lion (cougar)	<i>Puma concolor</i>	Toxoplasmosis, plague, rabies, direct injury
Nutria	<i>Myocastor coypus</i>	Tuberculosis, septicemia, rabies, leptospirosis
Porcupine	<i>Erethizon dorsatum</i>	Rabies, tularemia, direct injury
North American beaver	<i>Castor canadensis</i>	Giardiasis, leptospirosis, hantavirus, direct injury, waterway impoundment that can lead to life-threatening flooding
Badger	<i>Taxidea taxus</i>	Rabies, direct injury
Muskrat	<i>Ondatra zibethicus</i>	Leptospirosis, tularemia
Striped skunk	<i>Mephitis mephitis</i>	Leptospirosis, tularemia, direct injury
Spotted skunk	<i>Spilogale putorius</i>	
Raccoon	<i>Procyon lotor</i>	
Rabbits	Family Leporidae	Cryptosporidiosis, tularemia, rabbit hemorrhagic fever
Virginia opossum	<i>Didelphis virginiana</i>	Leptospirosis, tularemia, direct injury
Nine-banded armadillo	<i>Dasypus novemcinctus</i>	Leprosy, Chagas disease

Microorganisms	
Taxonomic Name (Organism or Particle Type)	Public Health Importance (Possible Clinical Significance)
Bacteria	
Spirochetes	
<i>Borrelia</i> spp.	Lyme disease, <i>Borrelia miyamotoi</i> disease, tick-borne relapsing fever
<i>Leptospira</i> spp.	Leptospirosis
<i>Treponema</i> spp.	Syphilis, yaws, pinta
Gram-Negative Bacteria – aerobic rods and cocci	
<i>Campylobacter</i> spp.	Enteritis, abscesses,
<i>Pseudomonas</i> spp.	Septicemia, abscesses, respiratory and urinary infections, bacteremia
<i>Stenotrophomonas</i> spp.	Respiratory infections, urinary tract infections
<i>Burkholderia</i> spp.	Endocarditis, septicemia, wound infections
<i>Legionella</i> spp.	Legionnaires' Disease, pneumonia
<i>Neisseria</i> spp.	Meningitis, gonorrhea, urinary tract infections
<i>Elizabethkingia</i> spp. (<i>Chryseobacterium</i> - <i>Flavobacteria</i> spp.)	Nosocomial infection, meningitis, septicemia
<i>Bordetella</i> spp.	Whooping cough
<i>Brucella</i> spp.	Brucellosis, undulant fever
<i>Moraxella</i> spp.	Conjunctivitis
<i>Acinetobacter</i> spp.	Nosocomial infections
<i>Aeromonas</i> spp.	Gastroenteritis, wound, septicemia
<i>Haemophilus</i> spp.	Bronchitis, sinusitis, otitis, septicemia, venereal disease
<i>Chromobacterium</i> spp.	Pyogenic infections, septicemia
Gram-Negative Bacteria –facultatively anaerobic rods	
<i>Vibrio</i> spp.	Cholera, gastroenteritis, septicemia, ear infections
<i>Plesiomonas</i> spp.	Gastroenteritis
<i>Pasteurella</i> spp.	Meningitis, arthritis, otitis, septicemia, sinusitis, encephalitis
<i>Actinobacillus</i> spp.	Pneumonia, bronchitis, septicemia, sinusitis
<i>Bacteroides</i> spp.	Diarrhea, intra-abdominal abscesses, peritoneal infections, inflammatory bowel disease, anaerobic bacteremia, colon cancer
<i>Cardiobacterium</i> spp.	Endocarditis
<i>Gardnerella</i> spp.	Vaginitis
<i>Eikenella</i> spp.	Sinusitis, pulmonary infections, arthritis, endocarditis, pancreatic abscesses

Microorganisms	
Taxonomic Name (Organism or Particle Type)	Public Health Importance (Possible Clinical Significance)
Enteric Bacteria	
<i>Escherichia</i> spp.	Urinary tract infections, septicemia, diarrhea, hemorrhagic colitis
<i>Shigella</i> spp.	Dysentery, diarrhea
<i>Salmonella</i> spp.	Gastroenteritis, septicemia, bacteremia, arthritis, typhoid fever, enterocolitis, gallbladder infection
<i>Citrobacter</i> spp.	Opportunistic infections, neonatal meningitis
<i>Klebsiella</i> spp.	Pneumoniae, infant diarrhea and urinary tract infection
<i>Enterobacter</i> spp./Other related species	Wound infection, nosocomial infections, urinary tract infections, gastroenteritis
<i>Hafnia</i> spp.	Opportunistic infections
<i>Proteus</i> spp.	Urinary tract infections, infant diarrhea, respiratory infections
<i>Serratia</i> spp.	Cystitis, bloodstream and central nervous system infections
<i>Providencia</i> spp.	Nosocomial infections, urinary tract infections, burn wound infections
<i>Morganella</i> spp.	Bacteremia, respiratory/urinary tract infections, wound infections
<i>Yersinia</i> spp.	Gastroenteritis, wound infections, septicemia
Gram-Negative, Anaerobic, Straight, Curved, and Helical Rods	
<i>Bacterioides</i> spp.	Periodontal disease, bacteremia
<i>Fusobacterium</i> spp.	Abscesses
Rickettsia and Chlamydia – obligate, intracellular parasites	
Rickettsia—Rod-shaped bacteria or Coccobacilli, Gram-Negative, Non-motile, Most transmitted by arthropods	
<i>Rickettsia</i> spp.	Rickettsialpox, Rocky Mountain spotted fever, <i>Rickettsia parkeri</i> rickettsiosis, Pacific Coast tick fever
<i>Anaplasma</i> spp.	Anaplasmosis
<i>Ehrlichia</i> spp.	Ehrlichiosis
<i>Coxiella</i> spp.	Q fever
Chlamydia –coccoid bacteria, Gram-negative, non-motile	
<i>Chlamydia</i> spp.	Trachoma (blindness), nongonococcal urethritis, lymphoma venereum, pneumonia
<i>Mycoplasma</i> spp.	Pneumonia, urogenital tract infections
<i>Ureaplasma</i> spp.	Urogenital tract infections

Microorganisms	
Taxonomic Name (Organism or Particle Type)	Public Health Importance (Possible Clinical Significance)
Gram-Positive Cocci	
<i>Staphylococcus</i> spp.	Cellulitis, boils, carbuncles, impetigo, toxic shock syndrome, bacteremia, endocarditis, meningitis, pneumonia, osteomyelitis
Coagulase-negative <i>Staphylococcus</i> spp.	Bacteremia, endocarditis, peritonitis, genitourinary tract infections
Group A <i>Streptococci</i> spp.	Pharyngitis, tonsillitis, sinusitis, arthritis, rheumatic fever, scarlet fever, impetigo
Group B <i>Streptococci</i> spp.	Neonatal disease, pneumonia, septicemia, meningitis, endocarditis
Group C <i>Streptococci</i> spp.	Pneumonia, pharyngitis, endocarditis, meningitis
<i>Enterococcus</i> spp.	Wound infections, bacteremia, endocarditis, meningitis
Additional <i>Streptococci</i> spp.	Pneumonia, otitis media, bacteremia, meningitis
Endospore-forming Gram-positive rods and cocci	
<i>Bacillus</i> spp.	Anthrax, gastroenteritis
<i>Clostridioides</i> spp.	Pseudomembranous colitis
<i>Clostridium</i> spp.	Tetanus, botulism, gangrene
Non-Endospore forming Gram-Positive Rods	
<i>Listeria</i> spp.	Food poisoning, abscess, abortion, meningitis
<i>Erysipelothrix</i> spp.	Erysipeloid, arthritis, endocarditis
Irregular, non-endospore forming, Gram-positive rods	
<i>Corynebacterium</i> spp.	Diphtheria
<i>Actinomyces</i> spp.	Actinomyces-granulomatous, ocular infections, caries, periodontal disease, intrauterine infection
<i>Propionibacterium</i> spp.	Acne
<i>Mycobacterium</i> spp.	Tuberculosis, pulmonary disease, cutaneous abscesses, post-operative wound infections
Actinomycetes—Irregular, non-endospore forming, Gram-positive	
<i>Nocardia</i> spp.	Cutaneous/subcutaneous infections, nocardiosis, mycetoma
<i>Rhodococcus</i> spp.	Opportunist pathogens
<i>Streptomyces</i> spp.	Actinomycetoma
<i>Actinomadura</i> spp.	

Microorganisms	
Taxonomic Name (Organism or Particle Type)	Public Health Importance (Possible Clinical Significance)
Fungi	
<i>Rhizopus</i> spp.	Opportunistic infections--Mucormycosis
<i>Rhizomucor</i> spp.	
<i>Absidia</i> spp.	
<i>Mucor</i> spp.	
<i>Cunninghamella</i> spp.	
<i>Mortierella</i> spp.	
<i>Saksenaea</i> spp.	
<i>Apophysomyces</i> spp.	
<i>Penicillium</i> spp.	Pneumonia, endocarditis, urinary tract infections
<i>Candida</i> spp.	Candidiasis, thrush, iatrogenic infections, Genitourinary tract infections
<i>Fusarium</i> spp.	Disseminated skin lesions in patients with leukemia
<i>Pseudalleschericia</i> spp.	Local lesions in paranasal sinuses, disseminated in kidney, thyroid, brain, heart
<i>Cryptococcus</i> spp.	Meningitis
<i>Trichosporon</i> spp.	Trichosporonosis
<i>Epidermophyton</i> spp.	Tinea cruris, tinea pedis
<i>Malassezia</i> spp.	Tinea versicolor
<i>Exophiala</i> spp.	Tinea nigra palmaris
<i>Trichophyton</i> spp.	Athlete's foot, tinea pedis, tinea corporis, tinea pedis, tinea barbae, tinea cruris, tinea capitis, tinea favosa
<i>Microsporum</i> spp.	Tinea capitis
<i>Pneumocystis</i> spp.	Pneumonia
<i>Histoplasma</i> spp.	Histoplasmosis
<i>Coccidioides</i> spp.	Coccidioidomycosis
<i>Paracoccidioides</i> spp.	Paracoccidioidomycosis
<i>Blastomyces</i> spp.	Blastomycosis
<i>Sporothrix</i> spp.	Sporotrichosis
<i>Aspergillus</i> spp.	Aspergillosis, pneumonia, ear infections, food-borne intoxication (aflatoxin)
<i>Stachybotrys</i> spp. / <i>Memnoniella</i> spp.	Allergic reactions
Protozoans	
Amoebas	
<i>Entamoeba</i> spp.	Amoebic dysentery
<i>Naegleria</i> spp.	Meningoencephalitis
<i>Acanthamoeba</i> spp.	Keratitis, chronic granulomatous amoebic encephalitis

Microorganisms	
Taxonomic Name (Organism or Particle Type)	Public Health Importance (Possible Clinical Significance)
Flagellates	
<i>Giardia</i> spp.	Dysentery
<i>Trichomonas</i> spp.	Urethritis, vaginitis
Ciliates	
<i>Balantidium</i> spp.	Dysentery
Sporozoans	
<i>Babesia</i> spp.	Babesiosis
<i>Cryptosporidium</i> spp.	Diarrhea
<i>Cyclospora</i> spp.	Food poisoning
<i>Toxoplasma</i> spp.	Toxoplasmosis
<i>Isospora</i> spp.	Watery diarrhea, abdominal pain/cramping, vomiting, fever
Viruses	
Adenoviruses (Infectious canine hepatitis virus)	Bronchitis, pneumonia, diarrhea, conjunctivitis, fever, bladder inflammation
Alphaviruses (Eastern equine encephalitis virus, chikungunya virus)	Fever, headache, joint swelling, pain, seizures, neurocognitive symptoms
Papillomaviruses (HPV),	Cancers, papilloma, warts
Polyomaviruses (simian vacuolating virus, Simian Virus 40, BK virus)	Usually asymptomatic, hemorrhagic cystitis,
Herpesviruses (herpes simplex viruses, varicella-zoster virus, cytomegalovirus, Epstein-Barr virus)	Shingles, chicken pox, fever, sore throat, swollen glands, hepatitis
Parvoviruses (parvovirus B19, canine parvovirus)	Fifth disease, rash, rhinitis, headache, painful joints
Poxviruses (smallpox virus, cow pox virus, sheep pox virus, monkey pox, vaccinia virus, molluscum contagiosum)	Lesions, skin nodules, disseminated rash
Picornaviruses (poliovirus, rhinovirus, coxsackie virus, enterovirus, hepatovirus, cardiovirus)	Hand, foot, and mouth disease, viral meningitis, myocarditis, acute flaccid paralysis, inflammatory muscle disease, stomach pain, nausea
Reoviruses (rotavirus)	Acute necrotizing encephalopathy, vomiting, diarrhea, abdominal pain
Caliciviruses (norovirus)	Diarrhea, vomiting, stomach pain
Togoviruses (rubella virus, alphavirus)	German measles, rash, sore throat
Flaviviruses (dengue virus, hepatitis C virus, yellow fever virus, Zika virus, West Nile virus, Powassan virus, tick-borne encephalitis virus)	Fever, headache, neurological symptoms, nausea, vomiting, rash, aches, pains, bleeding from nose or gums
Orthomyxoviruses (influenza viruses, Thogotovirus)	Fever, chills, cough, sore throat, rhinitis

Microorganisms	
Taxonomic Name (Organism or Particle Type)	Public Health Importance (Possible Clinical Significance)
Viruses (continued)	
Paramyxoviruses (measles virus, measles virus, respiratory syncytial virus (RSV), canine distemper virus)	High fever, coryza, conjunctivitis, coughing, wheezing,
Bunyaviruses (California encephalitis virus, hantavirus, Crimean-Congo hemorrhagic fever)	Fever, fatigue, muscle aches, vomiting, diarrhea, lethargy, shortness of breath
Rhabdoviruses (rabies virus)	Flu-like symptoms, weakness, fever, headache
Filoviruses (Ebola virus, Marburg virus)	Muscle pains, fatigue, diarrhea, unexplained bleeding or bruising
Coronaviruses (coronavirus, SARS-CoV, MERS-CoV)	Rhinitis, cough, sore throat, fever, fatigue, difficulty breathing
Astroviruses (astrovirus)	Vomiting, diarrhea
Retroviruses (HIV)	Night sweats, continual fevers, extreme fatigue, prolonged swelling of lymph glands, immune deficiency (i.e., AIDS)
Hepeviruses (Hepatitis E virus)	Nausea, jaundice, liver failure
Hepadnaviruses (Hepatitis B virus)	Fever, vomiting, nausea, dark urine, jaundice
Arenaviruses (Lymphocytic choriomeningitis virus (LCMV), Lujo Hemorrhagic Fever (LHF) virus, Sabia Virus, Lassa virus)	Meningitis, encephalitis, hydrocephalus, rash on face and trunk, respiratory distress, circulatory issues
Prions	
<i>TSEs (transmissible spongiform encephalopathies)</i>	Gerstmann-Straussler-Scheinker Syndrome, fatal familial insomnia, kuru, Creutzfeldt-Jakob Disease, bovine spongiform encephalopathy, scrapie, transmissible mink encephalopathy, feline spongiform encephalopathy, ungulate spongiform encephalopathy, chronic wasting disease