

Pesticide Registration (PR Notice) Notice 2020-[X]

**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: Draft List of Pests of Significant Public Health Importance – Revised 2020

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 list was first published in 2002, fulfilling the requirement of FIFRA sec. 28(d) to identify pests of significant public health importance. EPA, HHS and USDA believe that pests, diseases and control techniques have evolved since 2002. The list provides an interagency baseline for the federal government and the public to begin any discussions on government regulation and control of disease or disease vectors. 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 this list. No person is required to take any action in response to this notice.

The publication of this list does not affect the regulatory status of any registration or application for registration of any pesticide product. This list does 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 particular pesticide is a public health pesticide is beyond the scope of this PR Notice.

The Agency has determined that the list 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 significant 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 LIST

EPA has determined that the pests identified in Appendix A are pests of significant public health importance as that term is used in FIFRA section 28(d). Although this list is 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 this list. EPA is publishing this list separate from any statutory or regulatory conclusions which may be associated with public health pesticides. Additionally, this list does 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 diseases such as 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 list (PR Notice 2002-1) (see: <https://www.epa.gov/sites/production/files/2014-04/documents/pr2002-1.pdf>), this list identifies the pests that EPA, HHS and USDA currently consider to be of significant public health importance. As deemed necessary, the Agency will update the list 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. Interested parties are invited to petition the Agency regarding the amendment of this list. 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 LIST OF PESTS OF SIGNIFICANT PUBLIC HEALTH IMPORTANCE LIST BY THE AGENCY

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

1. Fulfill the requirements set forth in FIFRA section 28(d); and
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:

[To Be Added at Signing]

phone: (703) 305-xxxx

fax: (703) 305-xxxx

e-mail: xxx@epa.gov

[To Be Added at Signing]

phone: (703) 305-xxxx

fax: (703) 305-xxxx

e-mail: xxx@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 7505C)
1200 Pennsylvania Avenue, N.W.

125 Washington, DC 20460

126 **VI. Signature**

127 [Insert Signature Block for Signing Official (Match PIV Digital Signature)]

128 Director, Office of Pesticide Programs

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130 Appendix A:

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Appendix A

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, tick paralysis, Colorado tick fever
Rocky Mountain wood tick	<i>Dermacentor andersoni</i>	
Western blacklegged tick	<i>Ixodes pacificus</i>	Lyme disease, Ehrlichiosis, Human babesiosis
Blacklegged tick (deer tick)	<i>Ixodes scapularis</i>	
Brown dog tick	<i>Rhipicephalus sanguineus</i>	Rocky Mountain spotted fever
Lone star tick	<i>Amblyomma americanum</i>	Ehrlichiosis
Gulf Coast tick	<i>Amblyomma maculatum</i>	Tick paralysis
Asian long-horned tick	<i>Haemaphysalis longicornis</i>	Lyme disease, Powassan virus, Anaplasmosis, tick paralysis
Trombidiformes		
Chigger mites		Thrombiculidae
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,
	<i>Demodex folliculorum</i>	Demodicidosis, eye infections

Arthropod Pests		
Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
Sarcoptiformes		
Dust Mites	Pyroglyphidae	
American house dust mite	Dermatophagoides farina	Allergic reaction, Asthma
European house dust mite	Chorioptes pteronyssinus	
Itch Mites	Sarcoptidae	
Scabies mite	Sarcoptes scabiei	Scabies
Araneae		
Spiders		
Widow spiders, including: Southern black widow Northern black widow Western black widow Brown widow	Latrodectus mactans Latrodectus variolus Latrodectus hesperus Latrodectus geometricus	Venomous bite
Recluse spiders, including: Brown recluse	Loxosceles reclusa	
Scorpiones		
Scorpions		
Bark scorpions	Centruroides sculpturatus	Venomous sting
	Centruroides exilicauda	
	Centruroides vittatus	
Chilopoda		
Centipedes		
House centipede	Scutigera coleoptrata	Venomous bite
Florida blue centipede	Hemiscolopendra marginata	
Scolopendra centipedes	Scolopendra spp.	
INSECTS		
Blattodea		
Cockroaches		
American cockroach	Periplaneta americana	Allergic reaction, asthma, Salmonellosis, E. coli infection, hepatitis
Australian cockroach	Periplaneta australasiae	
Brown cockroach	Periplaneta brunnea	
Smokybrown cockroach	Periplaneta fuliginosa	
Brownbanded cockroach	Supella longipalpa	

Arthropod Pests

Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
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 pubus</i>	
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		
Flies, including Mosquitoes Horse & Deer Flies	Tabanidae	
Black horse fly	<i>Tabanus atratus</i>	Painful Bite, allergic reactions
Striped horse fly	<i>Tabanus lineola</i>	
Greenhead fly	<i>Tabanus nigrovittatus</i>	
Deer flies	<i>Chrysops</i> spp.	
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>	

Arthropod Pests

Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
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>	
Horn fly	<i>Haematobia irritans</i>	Painful bite
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		
House mosquitoes	<i>Culex</i> , <i>Culiseta</i> , <i>Aedes</i> , <i>Ochlerotatus</i> , <i>Anopheles</i> , <i>Psorophora</i> , and <i>Coquillettidia</i> spp.	Malaria, Encephalitis (St. Louis, West Nile, Eastern Equine, Western Equine, Venezuela Equine, LaCrosse and Cache Valley), Dengue fever, Yellow fever, Zika fever, Chikungunya
Southern house mosquitoes		
Asian tiger mosquito		
Yellow fever mosquito		

Arthropod Pests		
Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
Siphonaptera		
Fleas		
Cat flea	Ctenocephalides felis	Bartonella, Murie typhus, tapeworm infection, dermatitis with a risk of secondary infection, allergic reactions, painful bite
Dog flea	Ctenocephalides canis	
Human flea	Pulex irritans	Dermatitis with risk of secondary infection, allergic reactions, painful bite
Sticktight flea	Echidnophaga gallinacea	Bubonic plague, Murine plague (endemic typhus), Dermatitis with risk of secondary infection, allergic reactions, painful bite
Oriental rat flea	Xenopsylla cheopis	
Chigoe	Tunga penetrans	
Other fleas	Oropsylla spp.	
	Thrassis spp.	
	Ceratophyllus gallinae	
Hymenoptera		
Stinging Wasps, Bees, & Ants		
Yellowjackets	Vespula spp.	Painful stings, allergic reactions
European hornet	Vespa crabro	
Bald-faced hornet	Dolichovespula maculata	
Paper wasps	Polistes spp.	
Thread-waisted wasps (including mud daubers)	Sphecidae: Various species	
Velvet ants	Mutillidae: Various species	
Ants		

Arthropod Pests		
Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
Harvester ants	<i>Pogonomyrmex</i> spp.	Painful stings, allergic reactions
Bees	Apidae	
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
Copperhead and cottonmouth snakes	<i>Agkistrodon</i> spp.	direct injury
Coral snakes	<i>Micrurus</i> spp.	direct injury
Brown tree snake	<i>Boiga irregularis</i>	direct injury
Birds		
Geese	Subfamily Anserinae	disease, direct injury, human safety at airports
Mute swan	<i>Cygnus olor</i>	disease, direct injury, human safety at airports
Gulls	Subfamily Larinae	disease, human safety at airports
Coot	<i>Fulica americana</i>	Disease
Rock dove (domestic pigeon)	<i>Columba livia</i>	disease, human safety at airports
Cliff swallow	<i>Petrochelidon pyrrhonota</i>	disease, human safety at airports
Barn swallow	<i>Hirundo rustica</i>	disease, human safety at airports
House (English) sparrow	<i>Passer domesticus</i>	disease, human safety at airports
American crow	<i>Corvus brachyrhynchos</i>	disease
Fish crow	<i>Corvus ossifragus</i>	disease
European starling	<i>Sturnus vulgaris</i>	disease, human safety at airports
House finch	<i>Carduelis purpureus</i>	disease, human safety at airports
Blackbirds	Family Icteridae	disease, human safety at airports
Common raven	<i>Corvus corax</i>	disease, human safety at airports
Chihuahuan raven	<i>Corvus cryptoleucus</i>	disease, human safety at airports
Black vulture	<i>Cathartes aura</i>	direct injury, human safety at airports
Turkey vulture	<i>Coragyps atratus</i>	direct injury, human safety at airports

Vertebrate Pests

Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
Mammals		
Bats		
Big brown bat	<i>Eptesicus fuscus</i>	disease
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>	disease, human safety
Deer mouse	<i>Peromyscus maniculatus</i>	
Cotton mouse	<i>Peromyscus gossypinus</i>	
White-footed mouse (White-footed deer mouse)	<i>Peromyscus leucopus</i>	
Rats		
Norway rat	<i>Rattus norvegicus</i>	disease, direct injury, human safety
Roof rat	<i>Rattus rattus</i>	
Squirrels		
Flying squirrels	<i>Glaucomys</i> spp.	disease, human safety
Ground squirrels and prairie dogs	<i>Urocitellus</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>Otospermopjilus</i> spp., <i>Ammospermophilus</i> spp.	disease
Tree squirrels and chipmunks	<i>Sciurus</i> spp., <i>Tamias</i> spp., <i>Eutamias</i> spp., <i>Tamiasciurus</i> pp.	disease, human safety
Woodchuck	<i>Marmota monax</i>	
Yellow-bellied marmot	<i>Marmota flaviventris</i>	
Other Mammals		
Bears	Family Ursidae	direct injury
Coyote	<i>Canis latrans</i>	disease, direct injury
Arctic fox	<i>Alopex lagopus</i>	
Gray fox	<i>Urocyon cinereoargenteus</i>	disease, direct injury

Vertebrate Pests

Pest	Scientific Name	Public Health Importance/ Possible Clinical Significance
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>	
Wild (feral) horse	<i>Equus caballus</i>	
Wild (feral) swine	<i>Sus scrofa</i>	
Deer and elk	Family Cervidae	
Mongoose	Family Herpestidae	
Mountain lion (cougar)	<i>Puma concolor</i>	
Nutria	<i>Myocastor coypus</i>	disease
Porcupine	<i>Erethizon dorsatum</i>	disease, direct injury
North American beaver	<i>Castor canadensis</i>	disease, human safety
Badger	<i>Taxidea taxus</i>	disease
Muskrat	<i>Ondatra zibethicus</i>	
Striped skunk	<i>Mephitis mephitis</i>	disease, direct injury
Spotted skunk	<i>Spilogale putorius</i>	
Raccoon	<i>Procyon lotor</i>	
Rabbits	Family Leporidae	disease
Virginia opossum	<i>Didelphis virginiana</i>	disease, direct injury

Microorganisms

Taxonomic Name (Organism or Particle Type)	Public Health Importance (Possible Clinical Significance)
Bacteria	
Spirochetes	
<i>Leptospira spp.</i>	Leptospirosis
<i>Treponema spp.</i>	syphilis, yaws, pinta
Gram-Negative Bacteria – aerobic rods and cocci	
<i>Campylobacter spp.</i>	enteritis, abscesses,
<i>Pseudomonas spp.</i>	septicemia, abscesses, respiratory and urinary infections, bacteremia
<i>Stenotrophomonas spp.</i>	respiratory infections, urinary tract infections
<i>Burkholderia spp.</i>	endocarditis, septicemia, wound infections
<i>Legionella spp.</i>	Legionnaire's Disease, pneumonia
<i>Neisseria spp.</i>	meningitis, gonorrhea, urinary tract infections
<i>Elizabethkingia spp. (Chryseobacterium - Flavobacteria spp.)</i>	Nosocomial infection, meningitis, septicemia
<i>Bordetella spp.</i>	whooping cough
<i>Brucella spp.</i>	brucellosis, undulant fever
<i>Moraxella spp.</i>	conjunctivitis
<i>Acinetobacter spp.</i>	nosocomial infections
<i>Aeromonas spp.</i>	gastroenteritis, wound, septicemia
<i>Haemophilus spp.</i>	bronchitis, sinusitis, otitis, septicemia, venereal disease
<i>Chromobacterium spp.</i>	pyogenic infections, septicemia
Gram-Negative Bacteria –facultatively anaerobic rods	
<i>Vibrio spp.</i>	cholera, gastroenteritis, septicemia, ear infections
<i>Plesiomonas spp.</i>	gastroenteritis
<i>Pasteurella spp.</i>	meningitis, arthritis, otitis, septicemia, sinusitis, encephalitis
<i>Actinobacillus spp.</i>	pneumonia, bronchitis, septicemia, sinusitis
<i>Bacteroides spp.</i>	diarrhea, intra-abdominal abscesses, peritoneal infections, inflammatory bowel disease, anaerobic bacteremia, colon cancer
<i>Cardiobacterium spp.</i>	endocarditis
<i>Gardnerella spp.</i>	vaginitis
<i>Eikenella spp.</i>	Sinusitis, pulmonary infections, arthritis, endocarditis, pancreatic abscesses
Enteric Bacteria	
<i>Escherichia spp.</i>	urinary tract infections, septicemia, diarrhea, hemorrhagic colitis
<i>Shigella spp.</i>	dysentery, diarrhea

Microorganisms

Taxonomic Name (Organism or Particle Type)	Public Health Importance (Possible Clinical Significance)
<i>Salmonella spp.</i>	gastroenteritis, septicemia, bacteremia, arthritis, typhoid fever, enterocolitis, gallbladder infection
<i>Citrobacter spp.</i>	opportunistic infections, neonatal meningitis
<i>Klebsiella spp.</i>	pneumoniae, infant diarrhea and urinary tract infection
<i>Enterobacter spp.</i> /Other related species	wound infection, nosocomial infections, urinary tract infections, gastroenteritis
<i>Hafnia spp.</i>	opportunistic infections
<i>Proteus spp.</i>	urinary tract infections, infant diarrhea, respiratory infections
<i>Serratia spp.</i>	cystitis, bloodstream and central nervous system infections
<i>Providencia spp.</i>	nosocomial infections, urinary tract infections, burn wound infections
<i>Morganella spp.</i>	bacteremia, respiratory/urinary tract infections, wound infections
<i>Yersinia spp.</i>	gastroenteritis, wound infections, septicemia
Gram-Negative, Anaerobic, Straight, Curved, and Helical Rods	
<i>Bacterioides spp.</i>	periodontal disease, bacteremia
<i>Fusobacterium spp.</i>	abscesses
Rickettsia and Chlamydia – obligate, intracellular parasites	
Rickettsia—Rod-shaped bacteria or Coccobacilli, Gram-Negative, Non-motile, Most transmitted by arthropods	
<i>Rickettsia spp.</i>	Rickettsial pox
<i>Coxiella spp.</i>	Q fever
Chlamydia –coccoid bacteria, Gram-negative, non-motile	
<i>Chlamydia spp.</i>	trachoma (blindness), nongonococcal urethritis, lymphoma venereum, pneumonia
<i>Mycoplasma spp.</i>	pneumonia, urogenital tract infections
<i>Ureaplasma spp.</i>	urogenital tract infections

Microorganisms

Taxonomic Name (Organism or Particle Type)	Public Health Importance (Possible Clinical Significance)
Gram-Positive Cocci	
<i>Staphylococcus spp.</i>	cellulitis, boils, carbuncles, impetigo, toxic shock syndrome, bacteremia, endocarditis, meningitis, pneumonia, osteomyelitis
<i>Coagulase-negative Staphylococcus spp.</i>	bacteremia, endocarditis, peritonitis, genitourinary tract infections
Group A <i>Streptococci spp.</i>	pharyngitis, tonsillitis, sinusitis, arthritis, rheumatic fever, scarlet fever, impetigo
Group B <i>Streptococci spp.</i>	neonatal disease, pneumonia, septicemia, meningitis, endocarditis
Group C <i>Streptococci spp.</i>	pneumonia, pharyngitis, endocarditis, meningitis
<i>Enterococcus spp.</i>	wound infections, bacteremia, endocarditis, meningitis
Additional <i>Streptococci spp.</i>	pneumonia, otitis media, bacteremia, meningitis
Endospore-forming Gram-positive rods and cocci	
<i>Bacillus spp.</i>	Anthrax, gastroenteritis
<i>Clostridioides spp.</i>	pseudomembranous colitis
<i>Clostridium spp.</i>	tetanus, botulism, gangrene
Non-Endospore forming Gram-Positive Rods	
<i>Listeria spp.</i>	Food poisoning, abscess, abortion, meningitis
<i>Erysipelothrix spp.</i>	Erysipeloid, arthritis, endocarditis
Irregular, non-endospore forming, Gram-positive rods	
<i>Corynebacterium spp.</i>	diphtheria
<i>Actinomyces spp.</i>	actinomyces-granulomatous, ocular infections, caries, periodontal disease, intrauterine infection
<i>Propionibacterium spp.</i>	acne
<i>Mycobacterium spp.</i>	tuberculosis, pulmonary disease, cutaneous abscesses, post-operative wound infections
Actinomycetes—Irregular, non-endospore forming, Gram-positive	
<i>Nocardia spp.</i>	cutaneous/subcutaneous infections, nocardiosis, mycetoma
<i>Rhodococcus spp.</i>	opportunistic pathogens
<i>Streptomyces spp.</i>	actinomycetoma
<i>Actinomadura spp.</i>	actinomycetoma
Fungi	
<i>Rhizopus spp.</i>	opportunistic infections--Mucormycosis
<i>Rhizomucor spp.</i>	opportunistic infections--Mucormycosis

Microorganisms

Taxonomic Name (Organism or Particle Type)	Public Health Importance (Possible Clinical Significance)
<i>Absidia spp.</i>	opportunistic infections--Mucormycosis
<i>Mucor spp.</i>	opportunistic infections--Mucormycosis
<i>Cunninghamella spp.</i>	opportunistic infections--Mucormycosis
<i>Mortierella spp.</i>	opportunistic infections--Mucormycosis
<i>Saksenaea spp.</i>	opportunistic infections--Mucormycosis
<i>Apophysomyces spp.</i>	opportunistic infections--Mucormycosis
<i>Penicillium spp.</i>	Pneumonia, endocarditis, urinary tract infections
<i>Candida spp.</i>	candidiasis, thrush, iatrogenic infections, genitourinary tract infections
<i>Fusarium spp.</i>	disseminated skin lesions in patients with leukemia
<i>Pseudalleschericia spp.</i>	local lesions in paranasal sinuses, disseminated in kidney, thyroid, brain, heart
<i>Cryptococcus</i>	meningitis
<i>Trichosporon spp.</i>	trichosporonosis
<i>Epidermophyton spp.</i>	tinea cruris, tinea pedis
<i>Malassezia spp.</i>	tinea versicolor
<i>Exophiala spp.</i>	tinea nigra palmaris
<i>Trichophyton spp.</i>	athlete's foot, tinea pedis, tinea corporis, tinea pedis, tinea barbae, tinea cruris, tinea capitis, tinea favosa
<i>Microsporum spp.</i>	tinea capitis
<i>Pneumocystis spp.</i>	pneumonia
<i>Histoplasma spp.</i>	histoplasmosis
<i>Coccidioides spp.</i>	coccidioidomycosis
<i>Paracoccidioides spp.</i>	paracoccidioidomycosis
<i>Blastomyces spp.</i>	blastomycosis
<i>Sporothrix spp.</i>	tinea nigra
<i>Aspergillus spp.</i>	aspergillosis, pneumonia, ear infections, food-borne intoxication (aflatoxin)
<i>Stachybotrys spp. / Memnoniella spp.</i>	Toxic mold (black)

Microorganisms

Taxonomic Name (Organism or Particle Type)	Public Health Importance (Possible Clinical Significance)
Protozoans	
Amoebas	
<i>Entamoeba spp.</i>	amoebic dysentery
<i>Naegleria spp.</i>	microencephalitis
<i>Acanthamoeba spp.</i>	keratitis, chronic granulomatous amoebic encephalitis
Flagellates	
<i>Giardia spp.</i>	dysentery
<i>Trichomonas spp.</i>	urethritis, vaginitis
Ciliates	
<i>Balantidium spp.</i>	dysentery
Sporozoans	
<i>Cryptosporidium spp.</i>	diarrhea
<i>Cyclospora spp.</i>	food poisoning
<i>Toxoplasma spp.</i>	Toxoplasmosis
<i>Isospora spp.</i>	intestinal disease
Viruses	
Adenoviruses (Infectious canine hepatitis virus)	bronchitis, pneumonia, diarrhea, conjunctivitis, fever, bladder inflammation
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	nausea, vomiting rash, aches, pains, bleeding from nose or gums

Microorganisms

Taxonomic Name (Organism or Particle Type)	Public Health Importance (Possible Clinical Significance)
virus)	
Orthomyxoviruses (influenza viruses, Thogotovirus)	fever, chills, cough, sore throat, rhinitis
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)	fatigue, fever, muscle aches, vomiting, diarrhea, 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
Hepeviruses (Hepatitis E virus)	nausea, jaundice, liver failure
Hepadnaviruses (Hepatitis B virus)	fever, vomiting, nausea, dark urine, jaundice
Arenaviruses (Lymphocytic choriomeningitis virus (LCMV), Lassa 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