

INFECTIOUS DISEASES OF HAITI



Stephen Berger, MD

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E-BOOK SERIES

2017 Edition

Infectious Diseases of Haiti - 2017 edition

Stephen Berger, MD

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Scope of Content

Disease designations may reflect a specific pathogen (ie, Adenovirus infection), generic pathology (Pneumonia - bacterial) or etiologic grouping (Coltivirus - Old world). Such classification reflects the clinical approach to disease allocation in the Infectious Diseases Module of the GIDEON web application. Similarly, a number of diseases which are generally diagnosed and treated outside of the field of Infectious Diseases are not included, despite the fact that a clear infectious etiology exists. Examples include Peptic ulcer, Creutzfeldt-Jakob disease, Human papillomavirus infections, etc. In contrast, a number of other entities of unknown etiology which do present to Infectious Diseases specialists have been included: Kawasaki's disease, Chronic fatigue syndrome, Kikuchi and Kimura diseases. Several minor infections having minimal relevance to the field of Infectious Diseases are not covered: Paronychia, Otitis externa, etc.

Introduction: The GIDEON e-book series

Infectious Diseases of Haiti is one in a series of GIDEON [ebooks](#) which summarize the status of Infectious diseases, Drugs, Vaccines and Pathogens in every country of the world.

Chapters are arranged alphabetically, by disease name. Each section is divided into four sub-sections:

1. Descriptive epidemiology
2. Status of the disease in Haiti
3. References

The initial items in the first section, Descriptive epidemiology, are defined as follows:

Agent	Classification (e.g., virus, parasite) and taxonomic designation.
Reservoir	Any animal, arthropod, plant, soil or substance in which an infectious agent normally lives and multiplies, on which it depends primarily for survival, and where it reproduces itself in such a manner that it can be transmitted to a susceptible host.
Vector	An arthropod or other living carrier which transports an infectious agent from an infected organism or reservoir to a susceptible individual or immediate surroundings.
Vehicle	The mode of transmission for an infectious agent. This generally implies a passive and inanimate (i.e., non-vector) mode.

A chapter outlining the routine vaccination schedule of Haiti follows the diseases chapters.

Content

There are 357 generic infectious diseases in the world today. 210 of these are endemic, or potentially endemic, to Haiti. A number of other diseases are not relevant to Haiti and have not been included in this book.

In addition to endemic diseases, we have included all published data regarding imported diseases and infection among expatriates from Haiti.

Sources

Data are based on the GIDEON web application (www.gideononline.com) which relies on standard text books, peer-review journals, Health Ministry reports and ProMED, supplemented by an ongoing search of the medical literature.

The availability and quality of literature regarding specific infectious diseases vary from country to country. As such, you may find that many of the sections in this book are limited to a general discussion of the disease itself - with no data regarding Haiti.

This is a book about the geography and epidemiology of Infection. Comprehensive and up-to-date information regarding the causes, diagnosis and treatment of each disease is available in the [GIDEON web application](#). Many of the diseases are generic. For example, such designations as Pneumonia bacterial and Urinary tract infection include a number of individual diseases. These appear under the subheading, Synonyms, listed under each disease.

Exploring Outbreaks and Surveys

Outbreak and survey charts are designed to allow users to quickly scan and compare publications according to year, setting, number of cases / deaths, affected population and other parameters. Linked references are displayed where available.

Parallel charts in the [GIDEON web app](#) allow for sorting within columns. In the following example, data are displayed alphabetically by outbreak setting or region.

Years	Region	Setting	Cases	Deaths	Source	Pathogen	Years	Region	Setting	Cases	Deaths	Source	Pathogen
1990	Alberta						2013*		airplane			eggs	Heidelberg
1999	Alberta		12		pet food	infantis	1966		bar mitzvah	34		fish	Java
2004	Alberta	restaurant	31			Heidelberg	1984	Ontario	day nursery	22			typhimurium
2010 to 2011	Alberta		91		food	enteritidis	1992*	Ontario	hospital				enteritidis
1960	British Columbia		65				1997*	Montreal	hotel				enteritidis PT 8
1985 to 1986	British Columbia		13		chocolate	nima	1982	Quebec	nursery			milk	typhimurium
1995 to 1996	British Columbia		133		sprouts	Newport	1983 to 1986	Halifax	nursing home	51			Newport
2000	British Columbia		47		baked goods	enteritidis	2011	New Brunswick	nursing home	7	1		
2000	British Columbia		62		eggs		1999	Edmonton	restaurant	27			typhimurium
2005*	British Columbia				baked goods		2001	multiple sites	restaurant	12		sprouts	enteritidis PT 11b
2008	British Columbia		64				2004	Alberta	restaurant	31			Heidelberg
2011	British Columbia		8			agbeni	2005	Ontario	restaurant	81			
							2016	Toronto	restaurant	43			
							2012	Ontario	school	46		catered food	
							2007	Ontario	university	85		food	typhimurium PT 108

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* Not endemic. Imported, expatriate or other context reported.

+ Country specific note exists for disease

Acanthocephalan infections

Agent	PARASITE - Archiacanthocephala. Moniliformida: <i>Moniliformis moniliformis</i> , Oligacanthorhynchida: <i>Maracanthorhynchus hirudinaceus</i> .
Reservoir	Pig (<i>Maracanthorhynchus</i>), rat and fox (<i>Moniliformis</i>),
Vector	None
Vehicle	Insect ingestion
Incubation Period	Unknown - presumed 15 to 40 days
Diagnostic Tests	Identification of worm in stool.
Typical Adult Therapy	Infection is usually self-limited. Pyrantel pamoate has been used against <i>Moniliformis moniliformis</i> - 11 mg/kg PO - repeat once in 2 weeks
Typical Pediatric Therapy	Infection is usually self-limited. Pyrantel pamoate has been used against <i>Moniliformis moniliformis</i> - 11 mg/kg PO - repeat once in 2 weeks
Clinical Hints	Most infections are characterized by asymptomatic passage of a worm In some cases, only vague complaints such as 'periumbilical discomfort' and 'giddiness' have been described
Synonyms	Corynosoma, Macracanthorhynchus, Moniliform acanthocephalan, Moniliformis moniliformis. ICD9: 128.9 ICD10: B83.8

Actinomycosis

Agent	BACTERIUM. Actinomycetes, <i>Actinomyces</i> spp. Anaerobic gram-positive bacillus
Reservoir	Human (oral, fecal and vaginal flora)
Vector	None
Vehicle	Endogenous
Incubation Period	Unknown
Diagnostic Tests	Gram stain and bacteriological culture using strict anaerobic technique. Growth is apparent in 3-7 days.
Typical Adult Therapy	Ampicillin 50 mg/kg/day IV X 4 to 6 weeks - then Amoxicillin 1.5 g/d PO X 6 months. OR Penicillin G 10 to 20 million units/day X 4 to 6w; then Penicillin V X 6 to 12m. Alternatives: Doxycycline , Ceftriaxone , Erythromycin Excision/drainage
Typical Pediatric Therapy	Ampicillin 50 mg/kg/day IV X 4 to 6 weeks - then Amoxicillin 20 mg/kg/day PO X 6 months. Penicillin G 100,000 units/kg/day X 4 to 6w; then Penicillin V 25,000 units/day X 6 to 12m. Excision/drainage
Clinical Hints	Mandibular osteomyelitis with fistulae (sulfur granules) in the setting of poor dental hygiene Pelvic abscesses in a women with intra-uterine device Fever, right lower quadrant mass and fistulae Suppurative pleuropulmonary infection with fistulae
Synonyms	Actinomyces, Aktinomykose, Lumpy jaw. ICD9: 039. ICD10: A42

Adenovirus infection

Agent	VIRUS - DNA. Adenoviridae, Adenovirus Enteric strains are classified in genus Mastadenovirus
Reservoir	Human, Non-human primates
Vector	None
Vehicle	Droplet, Water, Respiratory of pharyngeal acquisition
Incubation Period	4d - 12d
Diagnostic Tests	Viral culture/serology or antigen assay. Direct fluorescence of secretions. Nucleic acid amplification.
Typical Adult Therapy	Enteric/secretion precautions. Cidofovir has been used in some cases. Symptomatic therapy
Typical Pediatric Therapy	As for adult
Vaccine	Adenovirus vaccine
Clinical Hints	Generally, an uncomplicated illness lasting 3 to 5 days - Atypical pneumonia, upper respiratory infection, tracheitis, bronchiolitis - Keratoconjunctivitis with preauricular adenopathy - Gastroenteritis or hemorrhagic cystitis
Synonyms	Adenovirus gastroenteritis, Epidemic keratoconjunctivitis, Pharyngoconjunctival fever. ICD9: 047.9,077.1,077.2,008.62,480.0 ICD10: A08.2,B30.1,B34.0,J12.0

Aeromonas and marine Vibrio infx.

Agent	BACTERIUM. <i>Aeromonas hydrophila</i> , <i>Vibrio vulnificus</i> , et al Facultative gram-negative bacilli
Reservoir	Salt or brackish water, Fish
Vector	None
Vehicle	Water, Shellfish, Contact
Incubation Period	Range 2d - 7d
Diagnostic Tests	Culture. Notify laboratory if these organisms are suspected in stool.
Typical Adult Therapy	Fluoroquinolone or Sulfamethoxazole / Trimethoprim . Other antimicrobial agent as determined by susceptibility testing
Typical Pediatric Therapy	Sulfamethoxazole / Trimethoprim . Or other antimicrobial agent as determined by susceptibility testing
Clinical Hints	Diarrhea, fever, vomiting or sepsis following marine injury or ingestion of raw oysters / contaminated fresh or brackish water Fecal leukocytes present Severe or fatal in immunosuppressed or alcoholic patients
Synonyms	Aeromonas, Aeromonas hydrophila, Vibrio mimicus, Vibrio vulnificus. ICD9: 005.81,027.9 ICD10: A48.8

Aeromonas and marine Vibrio infx. in Haiti

Prevalence surveys

Years	Study Group	%	Notes
2011	food handlers	4	food handlers working with health-care personnel (<i>Aeromonas</i> spp.) ¹

Notable outbreaks

Years	Region	Setting	Cases	Clinical	Pathogen	Notes
1976	Port au Prince	cruise ship	386	diarrhea	multiple pathogens	Outbreak associated with <i>Salmonella</i> , <i>Vibrio</i> , <i>Shigella</i> , ETEC and EIEC ²

References

1. [Pathog Glob Health 2016 Feb ;110\(1\):30-2.](#)
2. [Am J Public Health 1983 Jul ;73\(7\):770-2.](#)

Amoeba - free living

Agent	PARASITE - Protozoa. Centramoebida, Acanthamoebidae: <i>Acanthamoeba</i> and <i>Balamuthia</i> Schizopyrenida, Vahlkampfiidae: <i>Naegleria</i>
Reservoir	Water, Soil
Vector	None
Vehicle	Water (diving, swimming), Contact
Incubation Period	5d - 6d (range 2d - 14d) Granulomatous ? to 2m
Diagnostic Tests	Wet preparation. Specialized cultures. Serology available in reference centers.
Typical Adult Therapy	CNS <i>Naegleria</i> : Ampho. B to 1 mg/kg/d IV + 1.5 mg intrathec. X 8 days; + Miconazole 350 mg/sq m/d IV + 10 mg intrathec. qod X 8d <i>Acanthamoeba</i> : Sulfonamides + Flucytosine Miltefosine some cases of <i>Acanthamoeba</i> / <i>Balamuthia</i>
Typical Pediatric Therapy	CNS <i>Naegleria</i> : Amphotericin B to 1 mg/kg/d IV + 1.5 mg intrathecal X 8 days; plus Miconazole 350 mg/sq m/d IV + 10 mg intrathecal qod X 8d <i>Acanthamoeba</i> : Sulfonamides + Flucytosine Miltefosine successful in some cases of <i>Acanth.</i> / <i>Balamuthia</i> enceph.
Clinical Hints	Severe, progressive meningoencephalitis (<i>Naegleria</i> , <i>Acanthamoeba</i> or <i>Balamuthia</i>) following swimming or diving in fresh water Keratitis (<i>Acanthamoeba</i>), associated with contaminated solutions used to clean contact lenses.
Synonyms	<i>Acanthamoben</i> , <i>Acanthamoeba</i> , <i>Allovahlkampfia</i> , Amebic keratitis, <i>Balamuthia</i> , <i>Balmuthia</i> , <i>Dictyostelium</i> , Free-living amoeba, <i>Leptomyxid amoeba</i> , <i>Naegleria</i> , <i>Paravahlkampfia</i> , Primary amebic meningoencephalitis, <i>Sappinia</i> , <i>Vahlkampfia</i> . ICD9: 136.2 ICD10: B60.1,B60.2

Amoeba - free living in Haiti

A single case report of *Acanthamoeba* infection was published in 1986 - *A. castellanii* paranasal sinusitis in a patient with AIDS. ¹

References

1. Arch Pathol Lab Med 1986 Aug ;110(8):749-51.

Amoebiasis

Agent	PARASITE - Protozoa. Sarcomastigota, Entamoebidea: <i>Entamoeba histolytica</i> (must be distinguished from non-invasive, <i>Entamoeba dispar</i>)
Reservoir	Human
Vector	Fly (Musca) - occasionally
Vehicle	Food, Water, Sexual contact, Fly
Incubation Period	1w - 3w (range 3d - 90d)
Diagnostic Tests	Fresh stool/aspirate for microscopy. Stool antigen assay. Stool PCR. Note: serological tests usually negative.
Typical Adult Therapy	Metronidazole 750 mg PO TID X 10d Follow with: Paromomycin 500 mg PO TID X 7d OR Iodoquinol 650 mg PO TID X 20d
Typical Pediatric Therapy	Metronidazole 15 mg/kg TID X 10d Follow with: Paromomycin 10 mg/kg PO TID X 7d OR Iodoquinol 10 mg/kg PO TID X 20d
Clinical Hints	Dysentery, abdominal pain, tenesmus. Unlike shigellosis, hyperemia of the rectal mucosa and fecal pus are absent. Liver abscess and dysentery rarely coexist in a given patient.
Synonyms	Amebiasis, Amebiasis intestinal, Amebic colitis, Amebic dysentery, Amoebenruhr, Entamoeba bangladeshi, Entamoeba gingivalis, Entamoeba moshkovskii. ICD9: 006.0,006.1,006.2 ICD10: A06.0,A06.1,A06.2

Amoebiasis in Haiti

Prevalence surveys

Years	Study Group	%	Notes
1990 - 1993	patients - HIV/AIDS	1	1% of HIV-positive adults with diarrhea ¹
2003 - 2004	patients - HIV/AIDS	0.4	0.4% of HIV-positive patients with chronic diarrhea ²

References

1. [Ann Intern Med 1994 Nov 01;121\(9\):654-7.](#)
2. [Am J Trop Med Hyg 2009 Jun ;80\(6\):1060-4.](#)

Amoebic abscess

Agent	PARASITE - Protozoa. Sarcomastigota, Entamoebidea: <i>Entamoeba histolytica</i> (must be distinguished from non-invasive, <i>Entamoeba dispar</i>)
Reservoir	Human
Vector	Fly (Musca) - occasionally
Vehicle	Food, Water, Sexual contact, Fly
Incubation Period	2w - 6m (rarely years; 95% within 6m)
Diagnostic Tests	Imaging. Serology. Nucleic acid amplification. Note: Amoebae are usually not present in stool at this stage.
Typical Adult Therapy	Metronidazole 750 mg TID X 10d OR Tinidazole 800 mg TID X 5d
Typical Pediatric Therapy	Metronidazole 15 mg/kg TID X 10d OR Tinidazole 15 to 20 mg/kg TID X 5d
Clinical Hints	Fever, local pain and weight loss Concurrent amebic colitis is usually not present. Typically a single abscess in the right hepatic lobe (bacterial abscesses may be multiple)
Synonyms	Absceso amebiano, Amebic liver abscess. ICD9: 006.3,006.4,006.5,006.6,006.8 ICD10: A06.4,106.5,A06.7,106.8

Amoebic abscess in Haiti

Epidemiological data regarding Amebic abscess are included in the notes for Amebic colitis

References

1. [Ann Intern Med 1994 Nov 01;121\(9\):654-7.](#)
2. [Am J Trop Med Hyg 2009 Jun ;80\(6\):1060-4.](#)

Anaplasmosis

Agent	BACTERIUM. Anaplasmataceae <i>Anaplasma phagocytophilum</i> . (<i>E. phagocytophila</i> , <i>E. equi</i> "HE agent" merged into this species) Intracellular <i>Rickettsia</i> -like
Reservoir	Rodent, Rabbit, Deer, Tick, Primate, Cattle, Horse, Goat, Sheep
Vector	Tick (<i>Ixodes scapularis</i> , <i>Ix. pacificus</i> , <i>Ix. ricinus</i>)
Vehicle	Blood or secretions (rare)
Incubation Period	Unknown; mean 8d
Diagnostic Tests	Intraleucocytic inclusions ('morulae') seen in blood smear. Serology. Nucleic acid amplification/
Typical Adult Therapy	Doxycycline 100 mg PO BID X 7 to 14 days OR Tetracycline 500 mg PO QID X 7 to 14 days
Typical Pediatric Therapy	Above age 8 years: Doxycycline 2 mg/kg PO BID X 7 to 14 days OR Tetracycline 500 mg PO QID X 7 to 14 days OR Rifampin 10 mg/kg/day PO
Clinical Hints	Fever, headache and myalgia following tick bite or exposure Arthralgia or macular rash may be present Leukopenia, thrombocytopenia or hepatic dysfunction are common Inclusions may be seen in granulocytes The case-fatality rate is 5%.
Synonyms	<i>Anaplasma capra</i> , <i>Anaplasma ovis</i> , <i>Anaplasma phagocytophilum</i> , <i>Anaplasma platys</i> , Anaplasmosis - human granulocytic, Ehrlichia equi, Ehrlichia ewingii, Ehrlichia microti, Ehrlichia phagocytophila, Ehrlichiosis - human granulocytic, Human granulocytic anaplasmosis, Human granulocytic ehrlichiosis. ICD9: 082.4 ICD10: B28.8

Although Anaplasmosis is not endemic to Haiti, imported, expatriate or other presentations of the disease have been associated with this country.

Anaplasmosis in Haiti

Prevalence surveys

Years	Study Group	Notes
2016*	dogs	0% of owned dogs ¹

* indicates publication year (not necessarily year of survey)

References

- [Vet Parasitol 2016 Jul 15;224:7-12.](#)

Angiostrongyliasis

Agent	PARASITE - Nematoda. <i>Angiostrongylus (Parastrongylus) cantonensis</i>
Reservoir	Rat, Prawn, Frog
Vector	None
Vehicle	Snail, Slug, Prawn, Lettuce
Incubation Period	2w (range 5d - 35d)
Diagnostic Tests	Identification of parasite. Serological tests have limited reliability.
Typical Adult Therapy	Corticosteroids if severe CNS disease Mebendazole 100 mg BID X 5d; OR Albendazole (20 mg/kg/day)
Typical Pediatric Therapy	Corticosteroids if severe CNS disease. Mebendazole 100 mg BID X 5d (age >2); OR Albendazole (20 mg/kg/day)
Clinical Hints	Follows ingestion of slugs, snails, prawns or frogs. Eosinophilic meningitis or encephalitis - generally self-limited Fever is typically absent or low grade Cranial nerve involvement (II, VI, V and VII) is common
Synonyms	Alicata's disease, Angiostrongylose, Angiostrongylus cantonensis, Bundibugyo, Eosinophilic meningitis, Haemoststrongylus ratti, Panstrongyliasis, Parastrongyliasis, Parastrongylus cantonensis, Pulmonema cantonensis. ICD9: 128.8 ICD10: B83.2

Angiostrongyliasis in Haiti

Prevalence surveys

Years	Region	Study Group	%	Notes
2002	Port-Au-Prince	rats	21-75	75% of <i>Rattus norvegicus</i> and 21% of <i>R. rattus</i> in Port-au-Prince ¹

References

1. [Trop Med Int Health 2003 May ;8\(5\):423-6.](#)

Animal bite-associated infection

Agent	BACTERIUM. <i>Pasteurella multocida</i> , and other zoonotic bite pathogens
Reservoir	Cat, Dog, Marsupial, Other mammal, Rarely bird
Vector	None
Vehicle	Bite (cat in 60%, dog in 30%), No obvious source in 10%
Incubation Period	3h - 3d
Diagnostic Tests	Gram stain/culture. Hold specimen for 2 weeks to discount Capnocytophaga & other genera.
Typical Adult Therapy	Penicillin, a Tetracycline or Cefuroxime . Dosage and duration appropriate for nature and severity of infection
Typical Pediatric Therapy	Penicillin or Cefuroxime . Dosage and duration appropriate for nature and severity of infection
Clinical Hints	Infection of cat- dog- or other bite wound; however, as many as 10% do not recall the bite Symptoms appear within 3 to 72 hours Systemic infection (meninges, bone, lungs, joints, etc) may occur.
Synonyms	Bacteroides pyogenes, Bacteroides tectus, Bergeyella zoohelcum, Bisgaard's taxon 16, Capnocytophaga canimorsus, Capnocytophaga cynodegmi, CDC EF-4, CDC NO-1, Corynebacterium kutscheri, Corynebacterium canis, Corynebacterium freiburgense, Fusobacterium canifelinum, Halomonas venusta, Kingella potus, Moraxella canis, Mycobacterium vulneris, Neisseria animaloris, Neisseria canis, Neisseria weaveri, Neisseria zoodegmatis, Pasteurella caballi, Pasteurella canis, Pasteurella dagmatis, Pasteurella multocida, Pasteurella stomatis, Psychrobacter immobilis, Staphylococcus intermedius, Vibrio harveyi. ICD9: 027.2 ICD10: A28.0

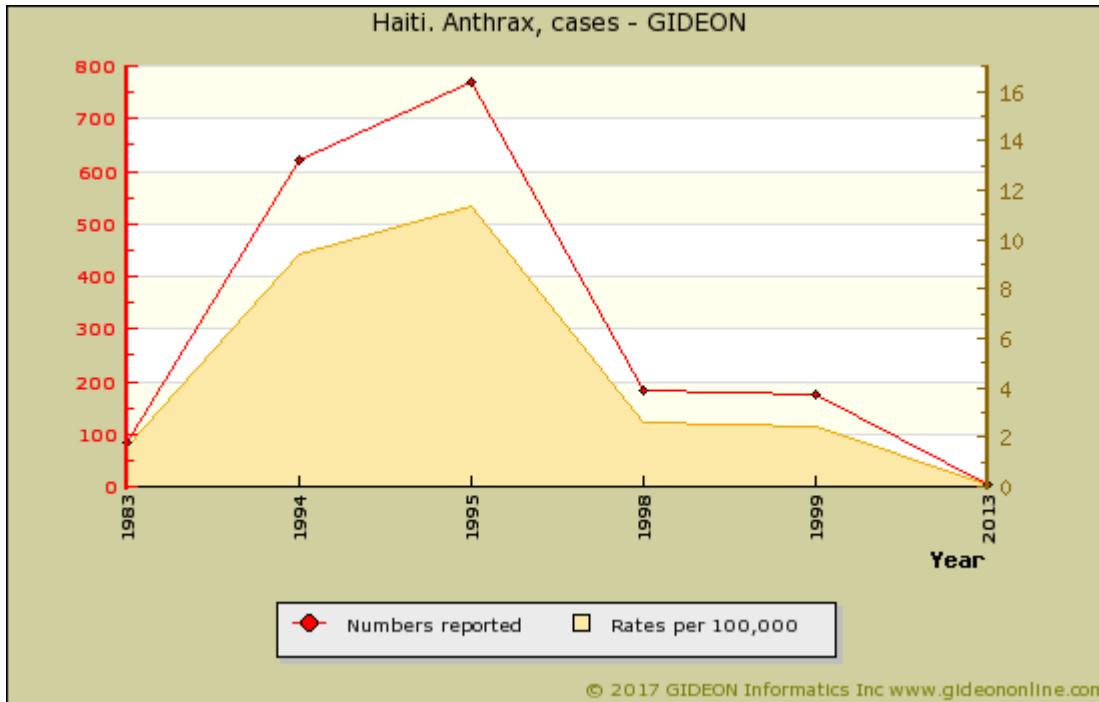
Anisakiasis

Agent	PARASITE - Nematoda. Secernentea: <i>Anisakis simplex</i> and <i>Pseudoterranova decipiens</i>
Reservoir	Marine mammals Fish
Vector	None
Vehicle	Undercooked fish
Incubation Period	Hours - 14d
Diagnostic Tests	Endoscopic identification of larvae.
Typical Adult Therapy	Endoscopic removal of larvae; surgery for complications
Typical Pediatric Therapy	As for adult
Clinical Hints	Follows ingestion of undercooked fish (e.g., sushi), squid or octopus. May present as - a generalized allergic reaction, or - acute and chronic abdominal pain, often with "peritoneal signs" or hematemesis
Synonyms	Anasakis, Bolbosoma, Cod worm disease, Contracecum, Eustrongylides, Herring worm disease, Hysterothylacium, Pseudoterranova, Whaleworm. ICD9: 127.1 ICD10: B81.0

Anthrax

Agent	BACTERIUM. <i>Bacillus anthracis</i> An aerobic gram positive bacillus
Reservoir	Soil, Goat, Cattle, Sheep, Water, Horse
Vector	Fly (rare)
Vehicle	Hair, Wool, Hides, Bone products, Air, Meat, Contact, Respiratory or pharyngeal acquisition
Incubation Period	1d-7d; 1-12 cutaneous, 1-7 GI; 1-43 pulmonary
Diagnostic Tests	Bacteriological culture. Alert laboratory that organism may be present. Serology and rapid tests by Ref. Centers.
Typical Adult Therapy	Isolation (secretions). Ciprofloxacin (or Penicillin if susceptible). If systemic infection, add Meropenem (or Imipenem) + Linezolid (or Rifampin or Clindamycin) Dosage/route/duration as per severity If inhalational anthrax, add Raxibacumab
Typical Pediatric Therapy	As for adult
Vaccine	Anthrax vaccine
Clinical Hints	Acquired from contact with large mammals or their products (meat, wool, hides, bone). Anthrax may present at dermal, pulmonary, gastrointestinal or other forms depending of site of inoculation. - Edematous skin ulcer covered by black eschar - satellite vesicles may be present - Fulminant gastroenteritis or pneumonia - Necrotizing stomatitis - Hemorrhagic meningitis.
Synonyms	Antrace, Antrax, Antraz, Carbunco, Carbunculo, La fievre charbonneuse, Malcharbon, Malignant pustule, Miltbrann, Miltvuur, Milzbrand, Mjaltbrand, Siberian plague, Siberian ulcer, Splenic fever, Wool-sorter's disease. ICD9: 022 ICD10: A22

Anthrax in Haiti



Graph: Haiti. Anthrax, cases

Notes:

- 387 clinical cases (7.6 per 10,000) of cutaneous anthrax were reported in 1973; and an additional 59 cases during the first 4 months of 1974.
- 1,587 cases of human anthrax were reported from the southern peninsula during 1973 to 1977; 1,396 (5 fatal) during 1985 to 1988
 Individual years:
 1988 - 164 cases of human anthrax were reported in the Commune of Jeremie
 1993 - 183 cases (> 12 fatal) were reported in La Brillere.
 1994 - Cases reported in all departments except Artinite & Ouest.
 1995 - 70.5% from the southeast.
 2002 - A series of 20 cases of human cutaneous anthrax was reported from the Artibonite Valley. ¹
 2010 - A case of fatal anthrax was reported in Leogane.

A case of ocular infection in the United States in 1974 was acquired from a goat-skin drum imported from Haiti. ²

Anthrax was reported in 220 bovines and 38 caprines in 1998.

- 27% to 50% of goatskin products (drums ³, voodoo dolls, rugs) are contaminated (1974).

Notable outbreaks

Years	Deaths	Clinical	Notes
1770	15,000	gastrointestinal infection	Outbreak of presumed intestinal anthrax ⁴

References

- Am J Trop Med Hyg 2007 Nov ;77(5):806-11.
- Lancet 1974 Jun 08;1(7867):1152.
- Lancet 1974 Jun 08;1(7867):1152.
- Emerg Infect Dis 2002 Oct ;8(10):1160-2.

Ascariasis

Agent	PARASITE - Nematoda. Secernentea: <i>Ascaris lumbricoides</i>
Reservoir	Human, Dog
Vector	None
Vehicle	Vegetables, Fly
Incubation Period	10d - 14d (range 7d - >200d)
Diagnostic Tests	Stool microscopy.
Typical Adult Therapy	Albendazole 400 mg X 1 dose OR Mebendazole 100 mg BID X 3d
Typical Pediatric Therapy	Albendazole 200 mg PO single dose OR Mebendazole 100 mg BID X 3 d (> age 2).
Clinical Hints	Highest rates among children and in areas of crowding and poor sanitation Acute illness characterized by cough, wheezing and eosinophilia Adult worms are associated with abdominal pain (occasionally obstruction), pancreatic or biliary disease Passage of a roundworm longer than 5 cm is virtually pathognomonic
Synonyms	Ascaris, <i>Ascaris lumbricoides</i> , Askariasis. ICD9: 127.0 ICD10: B77

Ascariasis in Haiti

Prevalence surveys

Years	Study Group	%	Notes
1999*	children	29.2	29.2% of school children ¹
2002	children	27.3	27.3% of school children ²

* indicates publication year (not necessarily year of survey)

References

1. [Am J Trop Med Hyg 1999 Mar ;60\(3\):479-86.](#)
2. [Bull Soc Pathol Exot 2005 Jun ;98\(2\):127-32.](#)

Aspergillosis

Agent	FUNGUS. Ascomycota, Euascomycetes, Eurotiales: <i>Aspergillus</i> . A hyaline hyphomycete
Reservoir	Compost, Hay, Cereal, Soil
Vector	None
Vehicle	Air, Respiratory or pharyngeal acquisition
Incubation Period	3d - 21d
Diagnostic Tests	Fungal culture. Biopsy. Nasal culture or serologic testing may be useful in select cases.
Typical Adult Therapy	Voriconazole 6 mg/kg IV Q12h, day 1; follow with 4 mg/kg IV OR Amphotericin B - if invasive, rapidly increase to max dose 0.6 mg/kg/d and to total 2.5g. OR Itraconazole
Typical Pediatric Therapy	Voriconazole 3 to 9 mg/kg IV Q12h OR Amphotericin B - if invasive, rapidly increase to max dose 0.6 mg/kg/d X 6w. OR Itraconazole
Clinical Hints	Pulmonary "fungus ball" or adult-onset asthma Pulmonary consolidation or infected "pulmonary infarct" in the setting of immune suppression (e.g., AIDS, leukemia, etc) May progress to widespread hematogenous dissemination if not treated promptly.
Synonyms	Aspergillose, Aspergillus. ICD9: 117.3 ICD10: B44

Bacillary angiomatosis

Agent	BACTERIUM. <i>Bartonella henselae</i> or <i>Bartonella quintana</i> . <i>Rickettsia</i> -like bacteria
Reservoir	Human, Tick, Cat
Vector	Cat flea, Tick (Ixodid)
Vehicle	None
Incubation Period	Unknown
Diagnostic Tests	Histology with special stains. Specialized culture techniques. Serology. Nucleic acid amplification.
Typical Adult Therapy	Clarithromycin 500 mg BID X 3 months Alternatives Azithromycin 250 mg QD Ciprofloxacin 500 mg BID OR Doxycycline 100 mg BID Erythromycin 500 mg po QID
Typical Pediatric Therapy	Clarithromycin 7.5 mg/kg PO BID X 8 months. OR Gentamicin 2 mg/kg IMq12h
Clinical Hints	Hemangiomas papules and nodules of skin, spleen, liver (peliosis hepatis), bone or other tissues Virtually all cases occur in the setting of AIDS or other immune deficiency Rare instances are reported following tick bite in immune-competent individuals.
Synonyms	Bacillary peliosis, Peliosis hepatis. ICD9: 757.32,083.8 ICD10: K76.4,A44.0

Bacillus cereus food poisoning

Agent	BACTERIUM. <i>Bacillus cereus</i> (toxin). An aerobic gram-positive bacillus
Reservoir	Soil, Processed & dried foods
Vector	None
Vehicle	Food
Incubation Period	2h - 9h (range 1h - 24h)
Diagnostic Tests	No practical test available. Isolation of organism from suspect food.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Usually follows ingestion of rice or other vegetables Vomiting within 1 to 6 hours and/or diarrhea within 6 to 24 hours Fecal leukocytes are not seen
Synonyms	Bacillus cytotoxicus. ICD9: 005.89 ICD10: A05.4

Bacterial vaginosis

Agent	BACTERIUM. <i>Gardnerella vaginalis</i> (facultative gram-negative bacillus), <i>Mobiluncus curtisii</i> , <i>Mobiluncus mulieris</i> , <i>Prevotella</i> , et al
Reservoir	Human
Vector	None
Vehicle	Sexual contact, Normal flora in 14% (girls) to 70% (women)
Incubation Period	Unknown
Diagnostic Tests	Identification of "clue cells" or positive KOH test in vaginal discharge. Culture.
Typical Adult Therapy	Metronidazole 500 mg BID X 7d OR Tinidazole 2 g PO daily X 3d OR Clindamycin 300 mg BID X 7d + intravaginal Clindamycin or Metronidazole ? Also treat sexual partner
Typical Pediatric Therapy	Metronidazole 7.5 mg/kg BID X 7d
Clinical Hints	Thin vaginal discharge - "fishy" odor when mixed with KOH Mild to moderate pruritis Urethritis may be present in sexual partner.
Synonyms	Gardnerella, Gardnerella vaginalis, Mobiluncus. ICD9: 041.89,616,10,099.8 ICD10: N76.1

Bacterial vaginosis in Haiti

Prevalence surveys

Years	Region	Study Group	%	Notes
2012	Southwestern Region	women	19.8-41	19.8% to 41% of rural women attending clinics ¹
2013*		women	26.3	26.3% of microscopic examinations among adult female outpatients with gynecological symptoms ²

* indicates publication year (not necessarily year of survey)

References

1. Am J Trop Med Hyg 2014 Nov ;91(5):881-6.
2. Int J STD AIDS 2014 Aug ;25(9):669-75.

Balantidiasis

Agent	PARASITE - Protozoa. Ciliate (Ciliophora), Litostomatea: <i>Balantidium coli</i>
Reservoir	Pig, Non-human primate, Rodent
Vector	None
Vehicle	Water, Food
Incubation Period	1d - 7d (range 1d - 60d)
Diagnostic Tests	Microscopy of stool or colonic aspirates.
Typical Adult Therapy	Tetracycline 500 mg QID X 10d. OR Metronidazole 750 mg TID X 5d. OR Iodoquinol 650 mg TID X 20d
Typical Pediatric Therapy	Age >= 8 years: Tetracycline 10 mg/kg QID (max 2g/d) X 10d. Age <8 yrs, Metronidazole 15 mg/kg TID X 5d; or Iodoquinol 13 mg/kg TID X 20d
Clinical Hints	The disease is most common in pig-raising areas Dysentery, often with vomiting Mimics intestinal amebiasis Symptoms may persist for one to four weeks, and may recur.
Synonyms	Balantidiose, Balantidiosis, Balantidium coli, Balantidosis, Balindosis, Ciliary dysentery. ICD9: 007.0 ICD10: A07.0

Bartonellosis - cat borne

Agent	BACTERIUM. <i>Afipia felis</i> , <i>Bartonella henselae</i> , <i>Bartonella clarridgeiae</i> , <i>Bartonella grahamii</i> , et al. A facultative gram-negative coccobacillus
Reservoir	Cat, Possibly tick
Vector	Cat flea (<i>Ctenocephalides</i>)
Vehicle	Cat scratch, Plant matter (thorn, etc)
Incubation Period	3d - 14d
Diagnostic Tests	Visualization of organisms on Warthin Starry stain. Culture. Serology. Nucleic acid amplification.
Typical Adult Therapy	Aspiration of nodes as necessary. Azithromycin 500 mg day 1, then 250 daily X 4 days Alternatives: Clarithromycin , Ciprofloxacin , Sulfamethoxazole/trimethoprim
Typical Pediatric Therapy	Aspiration of nodes as necessary. Azithromycin 10 mg/kg day 1, then 5 mg/kg daily X 4 days
Clinical Hints	Tender suppurative regional adenopathy following a cat scratch (usually kitten) Fever present in 25% Systemic infection (liver, brain, endocardium, bone, etc) occasionally encountered Most cases resolve within 6 weeks.
Synonyms	<i>Afipia felis</i> , <i>Bartonella clarridgeiae</i> , <i>Bartonella grahamii</i> , <i>Bartonella henselae</i> , <i>Bartonella koehlerae</i> , Cat scratch disease, Debre's syndrome, Foshay-Mollaret cat-scratch fever, Katszenkratz-Krankheit, Petzetakis' syndrome, SENLAT. ICD9: 078.3 ICD10: A28.1

Bartonellosis - other systemic

Agent	BACTERIUM. <i>Bartonella quintana</i> , <i>B. koehlerae</i> , <i>B. elizabethae</i> , <i>B. tamiae</i> , <i>B. washoensis</i> , etc A fastidious gram-negative coccobacillus
Reservoir	Human, Louse, Rat Cat Dog Sheep
Vector	Louse (<i>Pediculus</i>) Flea (<i>Ctenocephalides</i> , <i>Pulex</i>), Mite (<i>Dermanyssus</i>)
Vehicle	Wound or eye contact with secretions/louse feces
Incubation Period	9d - 25d (range 4d - 35d)
Diagnostic Tests	Serology. Culture. Nucleic acid amplification.
Typical Adult Therapy	Doxycycline 100 mg PO BID X 3 to 5 days (if endocarditis, add Gentamicin 3 mg/kg daily X 28 days) Alternatives: Clarithromycin , Azithromycin , Gentamicin , Fluoroquinolone (Levofloxacin , Trovafoxacin , Pefloxacin , Sparfloxacin or Moxifloxacin)
Typical Pediatric Therapy	Erythromycin 10 mg/kg PO QID X 3 to 5 days. OR Gentamicin 2 mg/kg IM q12h. Alternatives: Clarithromycin , Azithromycin
Clinical Hints	Often associated with poor hygiene and crowding Headache, myalgias, shin pain, macular rash and splenomegaly Endocarditis and bacteremia in some cases Relapse is common
Synonyms	<i>Bartonella alsatica</i> , <i>Bartonella bovis</i> , <i>Bartonella capreoli</i> , <i>Bartonella doshiae</i> , <i>Bartonella elizabethae</i> , <i>Bartonella melophagi</i> , <i>Bartonella quintana</i> , <i>Bartonella rochalimae</i> , <i>Bartonella schoenbuchensis</i> , <i>Bartonella tamiae</i> , <i>Bartonella tribocorum</i> , <i>Bartonella vinsonii</i> , <i>Bartonella vinsonii berkhoffii</i> , <i>Bartonella volans</i> , <i>Bartonella washoensis</i> , Candidatus <i>Bartonella mayotimonensis</i> , Candidatus <i>Bartonella merieuxii</i> , Candidatus <i>Bartonella rochalimae</i> , Five day fever, His-Werner disease, Meuse fever, Quintan fever, Quintana fever, Shank fever, Shin fever, Shinbone fever, Trench fever, Volhynian fever. ICD9: 083.1 ICD10: A44.0,A44.8,A79.0

Blastocystis hominis infection

Agent	PARASITE - Protozoa. Chromista, Bigyra, Blastocystea: <i>Blastocystis hominis</i> . (taxonomic status remains uncertain)
Reservoir	Human
Vector	None
Vehicle	Fecal-oral, Water
Incubation Period	Unknown
Diagnostic Tests	Stool microscopy. Nucleic acid amplification.
Typical Adult Therapy	Nitazoxanide 500 mg BID X 3 d. OR Metronidazole 750 mg TID X 10d. OR Iodoquinol 650 mg TID X 20 d. OR Sulfamethoxazole / Trimethoprim
Typical Pediatric Therapy	Nitazoxanide - Age 1 to 3 years: 5 ml (100 mg) PO Q12h X 3 days - Age 4 to 11 years: 10 mg (200 mg) PO Q12h X 3 days; OR Metronidazole 15 mg/kg/d X 10d. Sulfamethoxazole / Trimethoprim
Clinical Hints	The precise role of this organism in disease is controversial Diarrhea and flatulence, usually without fever The illness is similar to giardiasis Increased risk among immune-suppressed patients;
Synonyms	Apoi, Blastocystiose, Blastocystis hominis, Zierdt-Garavelli disease. ICD9: 007.8 ICD10: A07.8

Blastocystis hominis infection in Haiti

Blastocystis hominis infection was first reported from Haiti in 2006, among HIV-infected persons. ¹

Prevalence surveys

Years	Study Group	%	Notes
2011	food handlers	9	9% of food handlers working with health-care personnel ²

References

1. [Med Trop \(Mars\) 2006 Oct ;66\(5\):461-4.](#)
2. [Pathog Glob Health 2016 Feb ;110\(1\):30-2.](#)

Borna virus encephalitis

Agent	VIRUS - RNA Mononegavirales Bornavirus
Reservoir	Squirrel, Horse, Sheep
Vector	None
Vehicle	Unknown
Incubation Period	Unknown
Diagnostic Tests	Metagenomic analysis of brain tissue and cerebrospinal fluid Culture on specialized cell lines Serology
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	May follow animal (horse, squirrel) contact Borna virus infection is generally subclinical Manifested in some cases by mood disorders or possibly schizophrenia Overt and fatal encephalitis has been reported, with fever, gait disturbance and ocular palsy
Synonyms	Borna disease, Heated head disease, Sad horse disease, Staggering disease of cats, Variegated squirrel 1 bornavirus, VSBV-1. ICD9: 323.9 ICD10: A83.9

Botulism

Agent	BACTERIUM. <i>Clostridium botulinum</i> . An anaerobic gram-positive bacillus
Reservoir	Soil, Animal, Fish
Vector	None
Vehicle	Food, Soil (contamination of wound or injected drug)
Incubation Period	1d - 2d
Diagnostic Tests	Electrophysiologic (EMG) pattern. Isolation of organism from food (occ. from infant stomach). Mouse toxin assay
Typical Adult Therapy	Heptavalent (types A-G) or trivalent (types A, B, E) antitoxin (following test dose) 10 ml in 100 ml saline over 30 min Additional 10 ml at 2 and 4 hours if necessary. Respiratory support
Typical Pediatric Therapy	As for adult
Vaccine	Botulism antitoxin
Clinical Hints	Clinical manifestations similar to those of atropine poisoning: dysarthria, diplopia, dilated pupils, dry mouth, constipation, flaccid paralysis, etc Onset approximately 36 hrs after ingestion of poorly-preserved food Botulism may follow contaminated injection (ie, illicit drug) or other wound Infant botulism associated with infant formula containing honey contaminated by bacterial spores
Synonyms	Botulisme, Botulismo, Botulismus, Kerner's disease. ICD9: 005.1 ICD10: A05.1

Brain abscess

Agent	BACTERIUM OR FUNGUS. Mixed oral anaerobes / streptococci, <i>Staphylococcus aureus</i> (from endocarditis), etc.
Reservoir	Human
Vector	None
Vehicle	None
Incubation Period	Variable
Diagnostic Tests	Imaging techniques (CT, scan, etc).
Typical Adult Therapy	Antibiotic(s) appropriate to likely pathogens + drainage Typical empiric therapy: Intravenous Ceftriaxone 2 gm + Metronidazole 15 mg/kg, Q12h
Typical Pediatric Therapy	Typical empiric therapy: Intravenous Ceftriaxone 50 mg/kg + Metronidazole 15 mg/kg IV, Q12h
Clinical Hints	Headache, vomiting and focal neurological signs Often associated with chronic sinusitis or otitis media, pleural or heart valve infection Patients are often afebrile.
Synonyms	Ascesso cerebrale, Cerebral abscess. ICD9: 324.0 ICD10: G06.0

Brucellosis

Agent	BACTERIUM. <i>Brucella abortus</i> , <i>Brucella melitensis</i> , <i>Brucella suis</i> , <i>Brucella canis</i> An aerobic gram-negative bacillus
Reservoir	Pig, Cattle, Sheep, Goat, Dog, Coyote, Caribou
Vector	None
Vehicle	Food, Air, Dairy products, Animal excretions, Breastfeeding
Incubation Period	10d - 14d (range 5d - 60d)
Diagnostic Tests	Culture of blood or bone marrow. Serology. Note: Alert laboratory to possibility of Brucella.
Typical Adult Therapy	Doxycycline 100 mg BID + Rifampin 600 mg BID X 6 weeks. Alternatives Tetracycline + Gentamicin
Typical Pediatric Therapy	Rifampin 20 mg/kg/day (maximum 600 mg) plus: >age 8 years: Doxycycline 2 mg/kg BID PO X 6w age < 8 years Sulfamethoxazole/trimethoprim 4/20 mg/kg BID X 4 to 6w Add Gentamicin if severe
Clinical Hints	Prolonged fever, hepatosplenomegaly, lymphadenopathy, arthritis, osteomyelitis or chronic multisystem infection Follows ingestion of unpasteurized dairy products, contact with farm animals or meat processing
Synonyms	Bang's disease, Bangsche Krankheit, Brucella, Brucellemia, Brucelliasis, Brucellose, Brucellosen, Brucellosi, Brucelose, Brucelosis, Cyprus fever, Febris melitensis, Febris sudoralis, Febris undulans, Fievre caprine, Gibraltar fever, Goat fever, Malta fever, Maltafieber, Melitococcosis, Neapolitan fever, Rock fever, Typhomalarial fever, Undulant fever. ICD9: 023 ICD10: A23

Brucellosis in Haiti

Human disease in this country is due to *Brucella abortus*.

No cases were reported in 1998.

Campylobacteriosis

Agent	BACTERIUM. <i>Campylobacter jejuni</i> subsp <i>jejuni</i> , et al A microaerophilic gram-negative bacillus
Reservoir	Human, Mammal, Bird
Vector	None
Vehicle	Water, Food
Incubation Period	2d - 4d (range 1d - 10d)
Diagnostic Tests	Stool (rarely blood, CSF) culture. Nucleic acid amplification. Alert laboratory when these organisms are suspected.
Typical Adult Therapy	Stool precautions. Azithromycin 500 mg QD X 3 days Alternatives Erythromycin , Fluoroquinolone (Ciprofloxacin , Levofloxacin , Trovafloxacin , Pefloxacin , Sparfloxacin or Moxifloxacin), Gentamicin
Typical Pediatric Therapy	Stool precautions. Azithromycin 10 mg/kg QD X 3 days Alternatives - Erythromycin , Gentamicin
Clinical Hints	Febrile diarrhea or dysentery Vomiting or bloody stool often noted Severe abdominal pain may mimic appendicitis Disease is most common among children and lasts for one-to-four days
Synonyms	Campylobacter. ICD9: 008.43 ICD10: A04.5

Candidiasis

Agent	FUNGUS - Yeast. Ascomycota, Hemiascomycetes, Saccharomycetales. <i>Candida albicans</i> , and other species.
Reservoir	Human
Vector	None
Vehicle	Contact, Catheter
Incubation Period	Variable
Diagnostic Tests	Culture. Serology and assays for cell-specific antigens are performed in some centers,
Typical Adult Therapy	Topical, oral, systemic antifungal agent depending on clinical presentation and species (in Drugs module, scroll through upper left box)
Typical Pediatric Therapy	As for adult
Clinical Hints	Dermal erythema with satellite pustules "Cheesy" mucosal discharge Candidemia in the setting of intravenous catheter or endocarditis Severe, widespread or intractable disease should suggest the possibility of underlying diabetes, AIDS or other form of immune suppression.
Synonyms	Candida, Candida-Mykosen, Candidiase, Candidiasi, Candidose, Monilia, Moniliasis, Salmonella, Thrush. ICD9: 112 ICD10: B37

Candidiasis in Haiti

Prevalence surveys

Years	Region	Study Group	%	Notes
2012	Southwestern Region	women	9	9% of rural women attending clinics (vaginitis) ¹
2013*		women	2.2	2.2% of microscopic examinations among adult female outpatients with gynecological symptoms ²

* indicates publication year (not necessarily year of survey)

References

1. Am J Trop Med Hyg 2014 Nov ;91(5):881-6.
2. Int J STD AIDS 2014 Aug ;25(9):669-75.

Chancroid

Agent	BACTERIUM. <i>Haemophilus ducreyi</i> . A facultative gram-negative bacillus
Reservoir	Human
Vector	None
Vehicle	Sexual contact
Incubation Period	3d - 10d (2d - 21d)
Diagnostic Tests	Culture (inform laboratory when this diagnosis is suspected). Fluorescent staining under development
Typical Adult Therapy	Azithromycin 1.0 g PO X 1 dose. OR Ceftriaxone 250 mg IM X 1 dose. OR Ciprofloxacin 500 mg PO BID X 3 days OR Erythromycin 500 mg PO TID X 7d.
Typical Pediatric Therapy	Azithromycin 12 mg/kg PO X 1 dose OR Erythromycin 10 mg/kg PO TID X 7d. OR Ceftriaxone 10 mg/kg IM X 1
Clinical Hints	Soft, painful and tender chancre on erythematous base Regional lymphadenopathy - generally unilateral and painful Onset three-to-ten days following sexual exposure
Synonyms	Blot sjanker, Chancre mou, Chancro blando, Haemophilus ducreyi, Nkumunye, Soft chancre, Ulcera mole, Ulcus molle, Weeke sjanker, Weicher Schanker. ICD9: 099.0 ICD10: A57

Chikungunya

Agent	VIRUS - RNA. Togaviridae, Alphavirus: Chikungunya virus. Related Semliki Forest and Me Tri viruses are found in Africa & Asia
Reservoir	Non-human primate
Vector	Mosquito (<i>Aedes</i> spp.; <i>Ae. fuscifer-taylori</i> group in Africa)
Vehicle	None
Incubation Period	2d - 12d
Diagnostic Tests	Viral culture (blood). Serology. Nucleic acid amplification. Biosafety level 3.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Abrupt onset of fever, leukopenia, myalgia and prominent bilateral joint pain A maculopapular rash appears on 2nd to 5th days in greater than 50% of cases Fever resolves within 7 days, but joint pain may persist for months
Synonyms	Buggy Creek, Getah, Kidenga pepo, Knuckle fever, Me Tri, Semliki Forest. ICD9: 062.8,066.3 ICD10: A92.1

Chikungunya in Haiti

2014 to 2015 - Two cases of imported (from Haiti and the Dominican Republic) Chikungunya were reported in Panama.

¹ Imported cases from Haiti were reported in Brazil, Canada, Italy, Spain and the United States. [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#)

Notable outbreaks

Years	Cases	Notes
2014 - 2015	64,695	64,695 cases during January to March 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Seroprevalence surveys

Years	Study Group	Notes
2011 - 2014	children	0% during 2011 to 2013; 75.6% in 2014 24

References

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3. J Travel Med 2014 Nov-Dec;21(6):418-20.
4. West J Emerg Med 2014 Nov ;15(7):841-4.
5. Epidemiol Infect 2016 Jul ;144(9):1912-6.
6. World J Emerg Med 2016 ;7(1):65-7.
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Chlamydia infections, misc.

Agent	BACTERIUM. Chlamydiaceae, <i>Chlamydiae</i> , <i>Chlamydia trachomatis</i> ; <i>Simkania negevensis</i> ; <i>Waddlia chondrophila</i>
Reservoir	Human
Vector	None
Vehicle	Sexual contact
Incubation Period	5d - 10d
Diagnostic Tests	Microscopy and immunomicroscopy of secretions. Serology. Tissue culture. Nucleic acid amplification.
Typical Adult Therapy	<i>Doxycycline</i> 100 mg BID X 7d. OR <i>Azithromycin</i> 1g as single dose OR <i>Levofloxacin</i> 500 mg daily X 7 days OR <i>Ofloxacin</i> 300 mg BID X 7 days
Typical Pediatric Therapy	Weight <45 kg: <i>Erythromycin</i> 12.5 mg/kg QID X 14d Weight >=45 kg, but age <8 years: <i>Azithromycin</i> 1 g as single dose Age >= 8 years: <i>Azithromycin</i> 1 g as single dose OR <i>Doxycycline</i> 100 mg BID X 7 d
Clinical Hints	Thin, scant penile discharge Cervicitis, with overt pelvic inflammatory disease in some cases Conjunctivitis or neonatal pneumonia Concurrent gonorrhea may be present.
Synonyms	Bedsonia, Chlamydia suis, Chlamydia trachomatis, Chlamydia-Urethritis, Chlamydia-Zervicitis, Chlamydia-philae, Inclusion blennorrhoea, Non-gonococcal urethritis, Nonspecific urethritis, Parachlamydia, Parachlamydia acanthamoebae, Prachlamydia, Protochlamydia, Protochlamydia naegleriophila, Rhabdochlamydia, Simkania negevensis, Waddlia chondrophila. ICD9: 099.41,099.5 ICD10: A56,A55

Chlamydia infections, misc. in Haiti

Prevalence surveys

Years	Region	Study Group	%	Notes
2014 - 2015	Port-Au-Prince	adolescents	6.25	6.25% of adolescents in Port-au-Prince (gonorrhea / <i>Chlamydia</i>) ¹
2014*		men	4.4	4.4% of rural men with urethritis ²
1995*		pregnant women	12	12% of pregnant women in Cite Soleil are infected with <i>Chlamydia</i> , <i>Neisseria gonorrhoeae</i> - or both ³
1996	Artibonite Valley	pregnant women	10.7	10.7% of pregnant women in the Artibonite Valley ⁴
2012	Southwestern Region	women	1.9-11.9	1.9% to 11.9% of rural women attending clinics ⁵
2013*		women	5.4	5.4% of adult female outpatients with gynecological symptoms ⁶

* indicates publication year (not necessarily year of survey)

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Chlamydophila pneumoniae infection

Agent	BACTERIUM. Chlamydiaceae, Chlamydiae , <i>Chlamydophila (Chlamydia) pneumoniae</i>
Reservoir	Human
Vector	None
Vehicle	Droplet, Respiratory or pharyngeal acquisition
Incubation Period	7d - 28d
Diagnostic Tests	Direct fluorescence of sputum. Serology and culture in specialized laboratories. Nucleic acid amplification.
Typical Adult Therapy	Respiratory isolation. Azithromycin 500 mg day 1, then 0.25 g daily X 4 days OR Levofloxacin 750 mg po BID X 7d. OR Alternatives: Doxycycline 100 mg BID X 7d. Erythromycin 500 mg QID X 10d. Clarithromycin 0.5 g BID X 7d
Typical Pediatric Therapy	Respiratory isolation Azithromycin 10 mg/kg PO day 1; 5 mg/kg PO days 2 to 5
Clinical Hints	Atypical pneumonia, often associated with pharyngitis and myalgia Consider this diagnosis when Mycoplasma, Legionella and influenza are discounted.
Synonyms	Chlamydia pneumoniae, Chlamydia TWAR, Chlamydophila pneumoniae, TWAR. ICD9: 078.88 ICD10: J16.0

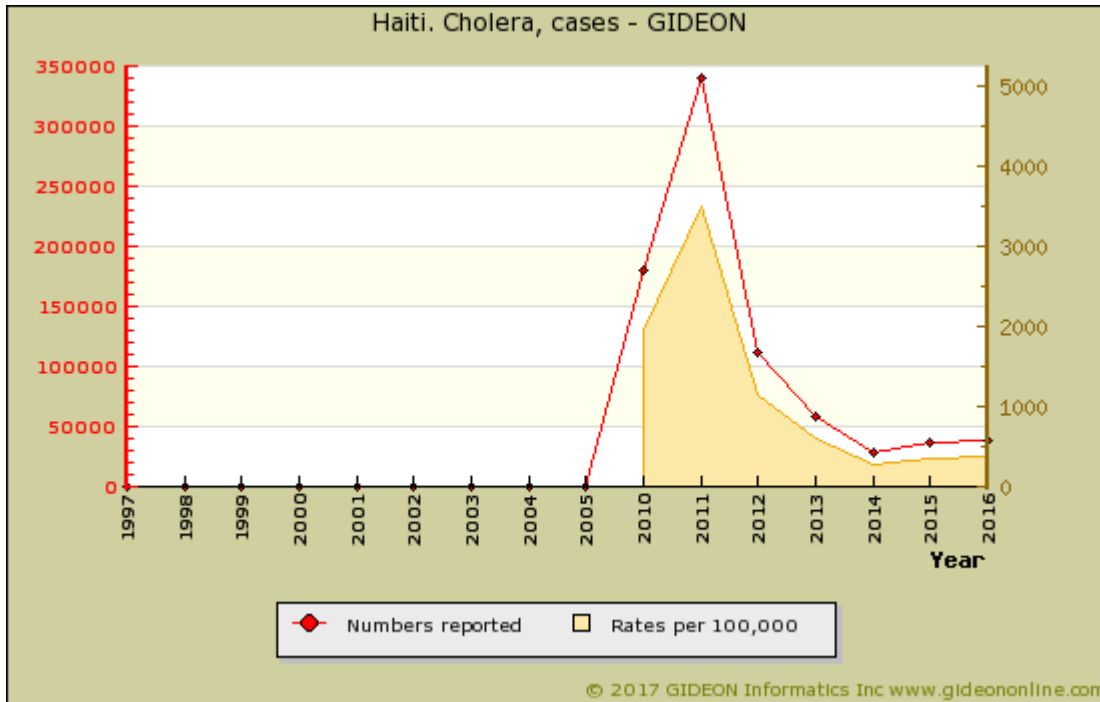
Cholecystitis and cholangitis

Agent	BACTERIUM. <i>Escherichia coli</i> , <i>Klebsiella pneumoniae</i> , enterococci, et al.
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Roentgenograms/imaging (cholecystogram, ultrasound, CT, etc).
Typical Adult Therapy	Antibiotics and surgical intervention as required
Typical Pediatric Therapy	As for adult
Clinical Hints	Fever, chills and right upper quadrant abdominal pain; Often "female, fat and forty" May be associated with gallstones or pancreatitis, or present as "fever of unknown origin"
Synonyms	Acute cholecystitis, Angiocholite, Ascending cholangitis, Cholangitis, Cholecystite, Cholecystitis, Cholezystitis, Colangite, Colangitis, Colecistite, Gall bladder. ICD9: 575.0,576.1 ICD10: K81,K83.0

Cholera

Agent	BACTERIUM. <i>Vibrio cholerae</i> A facultative gram-negative bacillus
Reservoir	Human
Vector	None
Vehicle	Water, Fecal-oral, Seafood (oyster, ceviche), Vegetables, Fly
Incubation Period	1d - 5d (range 9h - 6d)
Diagnostic Tests	Stool culture. Advise laboratory when this organism is suspected.
Typical Adult Therapy	Stool precautions. Doxycycline 100 mg BID X 5d, or Fluoroquinolone (Levofloxacin , Trovafloracin , Pefloxacin , Sparfloxacin or Moxifloxacin), or Azithromycin Fluids (g/l): NaCl 3.5, NaHCO3 2.5, KCl 1.5, glucose 20
Typical Pediatric Therapy	Stool precautions. Age >=8 years: Doxycycline 2 mg/kg BID X 5d. Age <8 years: Sulfamethoxazole / Trimethoprim Fluids (g/l): NaCl 3.5, NaHCO3 2.5, KCl 1.5, glucose 20
Vaccines	Cholera - injectable vaccine Cholera - oral vaccine
Clinical Hints	Massive, painless diarrhea and dehydration Occasionally vomiting Apathy or altered consciousness are common Rapid progression to acidosis, electrolyte imbalance and shock Fever is uncommon.
Synonyms	Colera, Kolera. ICD9: 001 ICD10: A00

Cholera in Haiti

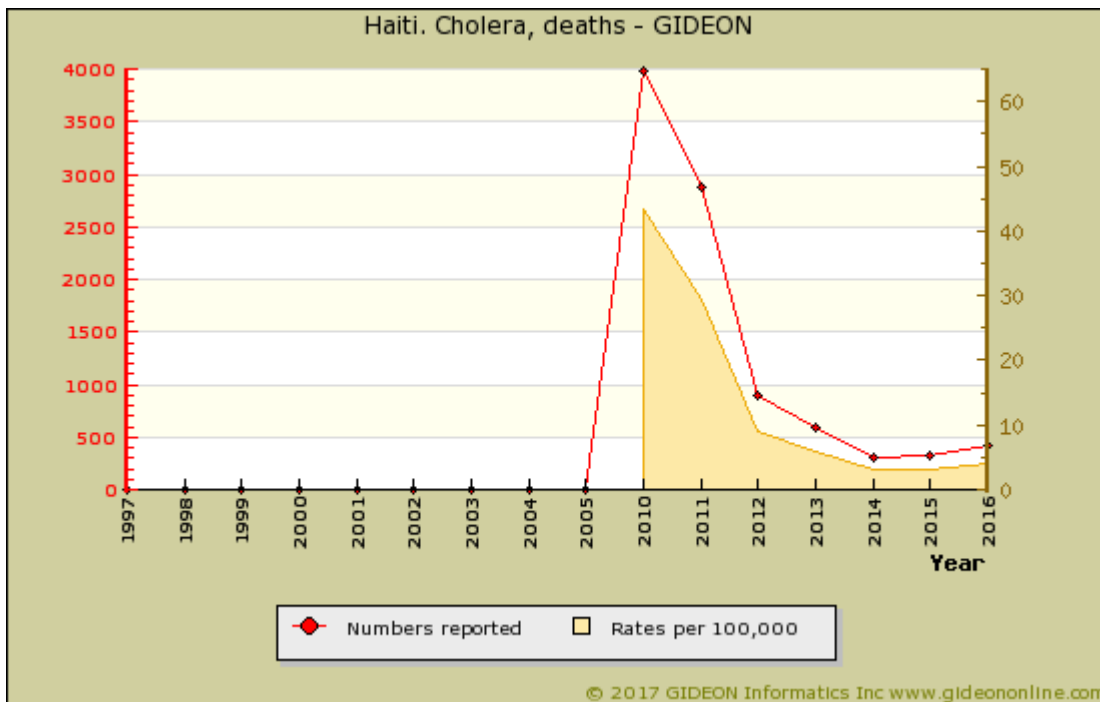


Graph: Haiti. Cholera, cases

Notes:

Individual years:

- 2010 - Haiti accounted for 56.5% of global cholera cases and 52.9% of cholera deaths. ¹
- 2011 - Haiti accounted for 57.7% of global cholera cases and 36.7% of cholera deaths. ²
- 2010 - Haiti accounted for 56.5% of global cholera cases and 52.9% of cholera deaths. ³
- 2011 - Haiti accounted for 57.7% of global cholera cases and 36.7% of cholera deaths. ⁴
- 2012 - Haiti accounted for 45.7% of global cholera cases and 29.5% of cholera deaths. ⁵
- 2013 - Haiti accounted for 45.6% of global cholera cases and 30.2% of cholera deaths. ⁶
- 2014 - Haiti accounted for 14.6% of global cholera cases and 13.3% of cholera deaths. ^{7 8}



Graph: Haiti. Cholera, deaths

The Cholera Epidemic of 2010 to 2016:

An outbreak (791,896 cases, 9,410 fatal - to September 2016) of cholera in Haiti followed a major earthquake. The outbreak strain appears to have been introduced by a Nepalese soldier serving with peace-keeping forces. During the course of the outbreak, 33,160 cases (490 fatal) of cholera were confirmed in the Dominican Republic (Dominican and Haitian nationals), 23 in the United States (13 from Haiti and 9 from the Dominican Republic) and one in Canada (imported from Haiti). These reports included an outbreak (8 cases) among Americans who had attended a banquet in the Dominican Republic. Suspected cholera was reported in a group of 21 French nationals working in Haiti during the outbreak. A separate outbreak (37 cases) was reported among Venezuelans returning from the Dominican Republic. One traveler from Puerto Rico, 1 from Germany and one from Britain were infected in the Dominican Republic. [9](#) [10](#) [11](#) [12](#) [13](#) [14](#) [15](#) [16](#) [17](#) [18](#) [19](#) [20](#) [21](#) [22](#) [23](#) [24](#) [25](#) [26](#) [27](#) [28](#) [29](#) [30](#) [31](#) [32](#) [33](#) [34](#) [35](#) [36](#) [37](#) [38](#) [39](#) [40](#) [41](#) [42](#) [43](#) [44](#) [45](#) [46](#) [47](#) [48](#) [49](#) [50](#) [51](#) [52](#) [53](#) [54](#) [55](#) [56](#) [57](#) [58](#) [59](#) [60](#) [61](#) [62](#) [63](#) [64](#) [65](#) [66](#) [67](#) [68](#) [69](#) [70](#) [71](#) [72](#) [73](#) [74](#) [75](#) [76](#) [77](#) [78](#) [79](#) [80](#) [81](#) [82](#) [83](#) [84](#) [85](#) [86](#) [87](#) [88](#) [89](#) [90](#) [91](#) [92](#) [93](#) [94](#) [95](#) [96](#) [97](#) [98](#) [99](#) [100](#) [101](#) [102](#) [103](#) [104](#) [105](#) [106](#) [107](#) [108](#) [109](#) [110](#) [111](#) [112](#) [113](#) [114](#) [115](#) [116](#) [117](#) [118](#) [119](#) [120](#) [121](#) [122](#) [123](#) [124](#) [125](#)

27,753 cases (296 fatal) were reported during 2014. [126](#) [127](#) [128](#) [129](#) [130](#)

36,644 cases (321 fatal) were reported during 2015. [131](#) [132](#) [133](#) [134](#) [135](#) [136](#) [137](#) [138](#) [139](#) [140](#) [141](#) [142](#) [143](#) [144](#) [145](#) [146](#) [147](#)

28,559 cases (267 fatal) were reported during January to September, 2016. [148](#) [149](#) [150](#) [151](#) [152](#) [153](#)

Prevalence surveys

Years	Study Group	%	Notes
2011	food handlers	4	4% of food handlers working with health-care personnel 154
2014*	health-care workers	0.23	0.23% of Cuban health-care workers returning from a cholera epidemic zone in Haiti (asymptomatic carriage) 155
2010 - 2013	patients	63.7	63.7% of patients hospitalized with watery diarrhea 156
2011 - 2012	patients	41.8	41.8% of post-earthquake diarrhea 157
2012 - 2013	water	1.7	1.7% of water sources for environmental reservoirs 158

* indicates publication year (not necessarily year of survey)

During a cholera epidemic, 7.9% of patients with cholera and 23% of those without cholera were found to be HIV-positive (2016 publication) [159](#)

Notable outbreaks

Years	Setting	Cases	Deaths	Notes
2010 - 2016	earthquake	791,896	9,410	Outbreak (791,896 cases, 9,410 fatal - to September 2016) followed a major earthquake. The outbreak strain appears to have been introduced by a Nepalese soldier serving with peace-keeping forces. During the course of the outbreak, 33,160 cases (490 fatal) of cholera were confirmed in the Dominican Republic (Dominican and Haitian nationals), 23 in the United States (13 from Haiti and 9 from the Dominican Republic) and one in Canada (imported from Haiti). These reports included an outbreak (8 cases) among Americans who had attended a banquet in the Dominican Republic. Suspected cholera was reported in a group of 21 French nationals working in Haiti during the outbreak. A separate outbreak (37 cases) was reported among Venezuelans returning from the Dominican Republic. One traveler from Puerto Rico, 1 from Germany and one from Britain were infected in the Dominican Republic. 27,753 cases (296 fatal) were reported during 2014; 36,644 cases (321 fatal) during 2015; 39,000 cases (420 fatal) during 2016. 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280
2012		3,593		Outbreak followed a hurricane. 281

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Chromomycosis

Agent	FUNGUS. Ascomycota, Euascomycetes, Chaetothyriales. Dematiaceous molds: <i>Phialophora</i> , <i>Cladophialophora</i> , <i>Fonsecaea</i> , <i>Rhinochadiella</i>
Reservoir	Wood, Soil, Vegetation
Vector	None
Vehicle	Minor trauma
Incubation Period	14d - 90d
Diagnostic Tests	Biopsy and fungal culture.
Typical Adult Therapy	Itraconazole 100 mg PO QID X (up to) 18 m. OR (for late disease) Flucytosine 25 mg/kg QID X 4m. OR Posaconazole 400 mg PO BID Terbinafine has been used in some cases. Local heat; excision as necessary
Typical Pediatric Therapy	Itraconazole 1 mg/kg PO BID X (up to) 18 m. OR Ketoconazole (if age >2) 5 mg/kg/d X 3 to 6m. Local heat; excision as necessary
Clinical Hints	Violaceous, verrucous, slowly-growing papule(s) or nodules Most commonly on lower extremities Usually follows direct contact with plant matter in tropical regions
Synonyms	Chromoblastomycosis, Chromomykose, Phoma insulana, Veronaea, Verrucous dermatitis. ICD9: 117.2 ICD10: B43.0

Chromomycosis in Haiti

2015 (publication year) - Chromoblastomycosis was diagnosed in a Haitian immigrant in the United States. ¹

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Chronic meningococemia

Agent	BACTERIUM. <i>Neisseria meningitidis</i> An aerobic gram-negative coccus
Reservoir	Human
Vector	None
Vehicle	Air, Infected secretions
Incubation Period	Unknown
Diagnostic Tests	Blood culture. Test patient for complement component deficiency.
Typical Adult Therapy	Intravenous Penicillin G 20 million units daily X 7 days
Typical Pediatric Therapy	Intravenous Penicillin G 200,000 units daily X 7 days
Clinical Hints	Recurrent episodes of low-grade fever, rash, arthralgia and arthritis May persist for months Rash is distal and prominent near joints and may be maculopapular, petechial or pustular In some cases, associated with complement component-deficiency
Synonyms	Meningococemia, chronic. ICD9: 036.2 ICD10: A39.3

Clostridial food poisoning

Agent	BACTERIUM. <i>Clostridium perfringens</i> An anaerobic gram-positive bacillus
Reservoir	Soil, Human, Pig, Cattle, Fish, Poultry
Vector	None
Vehicle	Food
Incubation Period	8h - 14h (range 5h - 24h)
Diagnostic Tests	Laboratory diagnosis is usually not practical. Attempt culture of food for <i>C. perfringens</i> .
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Abdominal pain and watery diarrhea Usually no fever or vomiting Onset 8 to 14 hours after ingestion of meat, fish or gravy Fecal leukocytes not seen Most cases resolve within 24 hours.
Synonyms	

Clostridial myonecrosis

Agent	BACTERIUM. <i>Clostridium perfringens</i> An anaerobic gram-positive bacillus
Reservoir	Soil, Human
Vector	None
Vehicle	Soil, Trauma
Incubation Period	6h - 3d
Diagnostic Tests	Gram stain of exudate. Wound and blood cultures. Presence of gas in tissue (not specific).
Typical Adult Therapy	Prompt, aggressive debridement. Penicillin G 3 million units IV Q3h + Clindamycin 900 mg IV Q8h. Hyperbaric oxygen
Typical Pediatric Therapy	Prompt, aggressive debridement. Penicillin G 50,000 units/kg IV Q3h + Clindamycin 10 mg/kg IV Q6h. Hyperbaric oxygen
Vaccine	Gas gangrene antitoxin
Clinical Hints	Rapidly progressive tender and foul-smelling infection of muscle Local gas present - crepitus or visible on X-ray Hypotension, intravascular hemolysis and obtundation
Synonyms	Anaerobic myonecrosis, Clostridial gangrene, Gas gangrene. ICD9: 040.0 ICD10: A48.0

Clostridium difficile colitis

Agent	BACTERIUM. <i>Clostridium difficile</i> An anaerobic gram-positive bacillus
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Assay of stool for C. difficile toxin.
Typical Adult Therapy	Metronidazole 500 mg PO TID X 10d. OR Vancomycin 125 mg (oral preparation) QID X 10d OR Fidaxomicin 200 mg PO BID X 10d Fecal transplantation (PO or by enema) has been effective in some cases.
Typical Pediatric Therapy	Vancomycin 2 mg/kg (oral preparation) QID X 10d
Clinical Hints	Fever, leukocytosis and abdominal pain Mucoïd or bloody diarrhea during or following antibiotic therapy Fecal leucocytes are seen Suspect this diagnosis even when mild diarrhea follows antibiotic intake
Synonyms	Klebsiella oxytoca colitis, Pseudomembranous colitis. ICD9: 008.45 ICD10: A04.7

Common cold

Agent	VIRUS - RNA. Picornaviridae. Rhinoviruses, Coronavirus, et al.
Reservoir	Human
Vector	None
Vehicle	Droplet, Contact, Respiratory or pharyngeal acquisition
Incubation Period	1d - 3d
Diagnostic Tests	Viral culture and serology are available, but not practical.
Typical Adult Therapy	Supportive; Pleconaril under investigation
Typical Pediatric Therapy	As for adult
Clinical Hints	Nasal obstruction or discharge, cough and sore throat are common Fever above 38 C is common in children, but unusual in adults Illness typically persists for one week, occasionally two
Synonyms	Acute coryza, Raffreddore. ICD9: 079,460 ICD10: J00

Conjunctivitis - inclusion

Agent	BACTERIUM. Chlamydiae , <i>Chlamydia trachomatis</i>
Reservoir	Human
Vector	None
Vehicle	Infected secretions, Sexual contact, Water (swimming pools)
Incubation Period	5d - 12d
Diagnostic Tests	Demonstration of chlamydiae on direct fluorescence or culture of exudate.
Typical Adult Therapy	Secretion precautions. Topical Erythromycin . Erythromycin 250 mg PO QID. X 14 days OR Doxycycline 100 mg PO BID X 14 days
Typical Pediatric Therapy	Secretion precautions. Topical Erythromycin . Azithromycin 1 g PO as single dose. Alternative If age >8 years, Doxycycline 100 mg PO BID X 7 days.
Clinical Hints	Ocular foreign body sensation, photophobia and discharge Illness can persist for months, to as long as 2 years;
Synonyms	Inclusion conjunctivitis, Paratrachoma. ICD9: 077.0 ICD10: P39.1,A74.0

Conjunctivitis - viral

Agent	VIRUS. Picornavirus, Adenovirus
Reservoir	Human
Vector	None
Vehicle	Contact
Incubation Period	1d - 3d
Diagnostic Tests	Viral isolation is available but rarely practical.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Watery discharge, generalized conjunctival injection and mild pruritus May be associated with an upper respiratory infection.
Synonyms	Apollo conjunctivitis, Apollo eye, Congiuntivite virale, Hemorrhagic conjunctivitis, Viral conjunctivitis. ICD9: 077.1,077.2,077.3,077.4,077.8,372.0 ICD10: B30,B30.3,H10

Cryptococcosis

Agent	FUNGUS - Yeast. Basidiomycota, Hymenomyces, Sporidiales: <i>Cryptococcus neoformans</i> and other species
Reservoir	Pigeon, Soil
Vector	None
Vehicle	Air, Respiratory or pharyngeal acquisition
Incubation Period	Variable
Diagnostic Tests	Fungal culture and stains. Latex test for fungal antigen in CSF and serum. Nucleic acid amplification.
Typical Adult Therapy	Amphotericin B 0.3 mg/kg/d X 6w (+/- Flucytosine); then 0.8 mg/kg qod X 8w. OR Fluconazole 200 mg/d
Typical Pediatric Therapy	Amphotericin B 0.3 mg/kg/d X 6w (+/- Flucytosine); then 0.8 mg/kg qod X 8w. OR Fluconazole 3 mg/kg/d
Clinical Hints	Chronic lymphocytic meningitis or pneumonia in an immune-suppressed patient Meningitis may be subclinical, or "wax and wane" Nuchal rigidity is absent or minimal; Bone, skin, adrenals, liver, prostate and other sites may be infected hematogenously
Synonyms	Busse-Buschke disease, Cryptococcus, European blastomycosis, Torulosis. ICD9: 117.5,321.0 ICD10: B45

Cryptosporidiosis

Agent	PARASITE - Protozoa. Apicomplexa, Eimeriida: <i>Cryptosporidium hominis</i> and <i>C. parvum</i> (rarely <i>C. muris</i> , <i>C. felis</i> , <i>C. meleagridis</i> , et al).
Reservoir	Mammal (over 150 species)
Vector	None
Vehicle	Water, Feces, Oysters, Fly
Incubation Period	5d - 10d (range 2d - 14d)
Diagnostic Tests	Stool/duodenal aspirate for acid-fast, direct fluorescence staining, or antigen assay. Nucleic acid amplification
Typical Adult Therapy	Stool precautions. Nitazoxanide 500 mg PO BID X 3 days
Typical Pediatric Therapy	Stool precautions. Nitazoxanide : 1 to 3 years: 100 mg PO BID X 3 days 4 to 11 years: 200 mg PO BID X 3 days >12 years: 500 mg PO BID X 3 days
Clinical Hints	Watery diarrhea, vomiting, abdominal pain Self-limited disease in healthy subjects Immunosuppressed (e.g., AIDS) patient experience a chronic and wasting illness, which may be associated with pulmonary disease
Synonyms	<i>Cryptosporidium</i> , <i>Cryptosporidium andersoni</i> , <i>Cryptosporidium chipmunk genotype</i> , <i>Cryptosporidium cunulicus</i> , <i>Cryptosporidium fayeri</i> , <i>Cryptosporidium felis</i> , <i>Cryptosporidium hedgehog genotype</i> , <i>Cryptosporidium hominis</i> , <i>Cryptosporidium meleagridis</i> , <i>Cryptosporidium parvum</i> , <i>Cryptosporidium pestis</i> , <i>Cryptosporidium suis</i> , <i>Cryptosporidium tyzzeri</i> , <i>Cryptosporidium ubiquitum</i> , <i>Cryptosporidium viatorum</i> , <i>Kryptosporidiose</i> . ICD9: 007.4 ICD10: A07.2

Cryptosporidiosis in Haiti

Human infection in Haiti is caused by *Cryptosporidium hominis*, *C. parvum*¹ and *C. felis*.²

Prevalence surveys

Years	Region	Study Group	%	Notes
1982 - 1984		children	16.3	16.3% of childhood diarrhea ³
1990 - 1993		patients - HIV/AIDS	30	30% of HIV-positive adults with diarrhea ⁴
2003 - 2004		patients - HIV/AIDS	16	16% of HIV-positive patients with chronic diarrhea ⁵
2008*		patients - HIV/AIDS	60	60% of HIV-positive patients with chronic diarrhea ⁶
2000 - 2007	Port-Au-Prince	water	65-92	65% of surface water samples in Port-au-Prince, and 91% of reservoirs in peripheral areas ⁷

* indicates publication year (not necessarily year of survey)

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Cutaneous larva migrans

Agent	PARASITE - Nematoda. Secernentea: <i>Ancylostoma braziliense</i> , <i>A. caninum</i> , <i>Bunostomum phlebotomum</i> , <i>Strongyloides myopotami</i>
Reservoir	Cat, Dog, Cattle
Vector	None
Vehicle	Soil, Contact
Incubation Period	2d - 3d (range 1d - 30d)
Diagnostic Tests	Biopsy is usually not helpful.
Typical Adult Therapy	Albendazole 200 mg BID X 3d OR Ivermectin 200 micrograms/kg as single dose. OR Thiabendazole topical, and oral 25 mg/kg BID X 5d (max 3g).
Typical Pediatric Therapy	Albendazole 2.5 mg/kg BID X 3d OR Ivermectin 200 micrograms/kg once OR Thiabendazole topical, and oral 25 mg/kg BID X 5d (max 3g).
Clinical Hints	Erythematous, serpiginous, intensely pruritic and advancing lesion(s) or bullae Usually involves the feet Follows contact with moist sand or beach May recur or persist for months.
Synonyms	Creeping eruption, Pelodera, Plumber's itch. ICD9: 126.2,126.8,126.9 ICD10: B76.9

Cyclosporiasis

Agent	PARASITE - Protozoa. Apicomplexa, Eimeriida: <i>Cyclospora cayetanensis</i>
Reservoir	Human, Non-human primate
Vector	None
Vehicle	Water, Vegetables
Incubation Period	1d - 11d
Diagnostic Tests	Identification of organism in stool smear. Cold acid fast stains and ultraviolet microscopy may be helpful.
Typical Adult Therapy	Sulfamethoxazole / Trimethoprim 800/160 mg BID X 7d Ciprofloxacin 500 mg PO BID X 7 d (followed by 200 mg TIW X 2 w) has been used in sulfa-allergic patients
Typical Pediatric Therapy	Sulfamethoxazole / Trimethoprim 10/2 mg/kg BID X 7d
Clinical Hints	Watery diarrhea (average 6 stools daily) Abdominal pain, nausea, anorexia and fatigue May persist for up to 6 weeks (longer in AIDS patients) Most cases follow ingestion of contaminated water in underdeveloped countries Large outbreaks have been associated with ingestion of contaminated fruit
Synonyms	Cryptosporidium muris, Cyanobacterium-like agent, Cyclospora. ICD9: 007.5 ICD10: A07.8

Cyclosporiasis in Haiti

Cyclospora infection was first reported in Haiti in 1983.

Prevalence surveys

Years	Region	Study Group	%	Notes
1997 - 1998	Leogane	children	15-20	15% to 20% of mothers and children in Leogane ¹
2001	Leogane	general population	12	12% of healthy individuals in Leogane (85% of these asymptomatic) ²
1990 - 1993		patients - HIV/AIDS	11	11% of HIV-positive adults ³
2003 - 2004		patients - HIV/AIDS	3	3% of HIV-positive patients with chronic diarrhea ⁴
2008*		patients - HIV/AIDS	34	34% of HIV-positive patients with chronic diarrhea ⁵

* indicates publication year (not necessarily year of survey)

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Cysticercosis

Agent	PARASITE - Platyhelminthes, Cestoda. Cyclophyllidea, Taeniidae: <i>Taenia solium</i>
Reservoir	Pig, Human
Vector	None
Vehicle	Soil (contaminated by pigs), Fecal-oral, Fly
Incubation Period	3m - 3y
Diagnostic Tests	Serology (blood or CSF) and identification of parasite in biopsy material.
Typical Adult Therapy	Albendazole 400 mg PO BID X 30d. OR Praziquantel 30 mg/kg TID X 14d (15 to 30d for neurocysticercosis). Combination of Albendazole + Praziquantel may be superior for neurocysticercosis. Surgery as indicated Add corticosteroids if brain involved.
Typical Pediatric Therapy	Albendazole 15 mg/kg PO BID X 30d. OR Praziquantel 30 mg/kg TID X 14d (15 to 30d for neurocysticercosis). Combination of Albendazole + Praziquantel may be superior for neurocysticercosis. Surgery as indicated Add corticosteroids if brain involved.
Clinical Hints	Cerebral, ocular or subcutaneous mass Usually no eosinophilia Calcifications noted on X-ray examination Associated with regions where pork is eaten 25% to 50% of patients have concurrent tapeworm infestation
Synonyms	<i>Taenia crassiceps</i> , <i>Taenia martis</i> . ICD9: 123.1 ICD10: B69

Cysticercosis in Haiti

Seroprevalence surveys

Years	Region	Study Group	%	Notes
2007	Port au Prince	general population	2.8	2.8% in Port au Prince ¹

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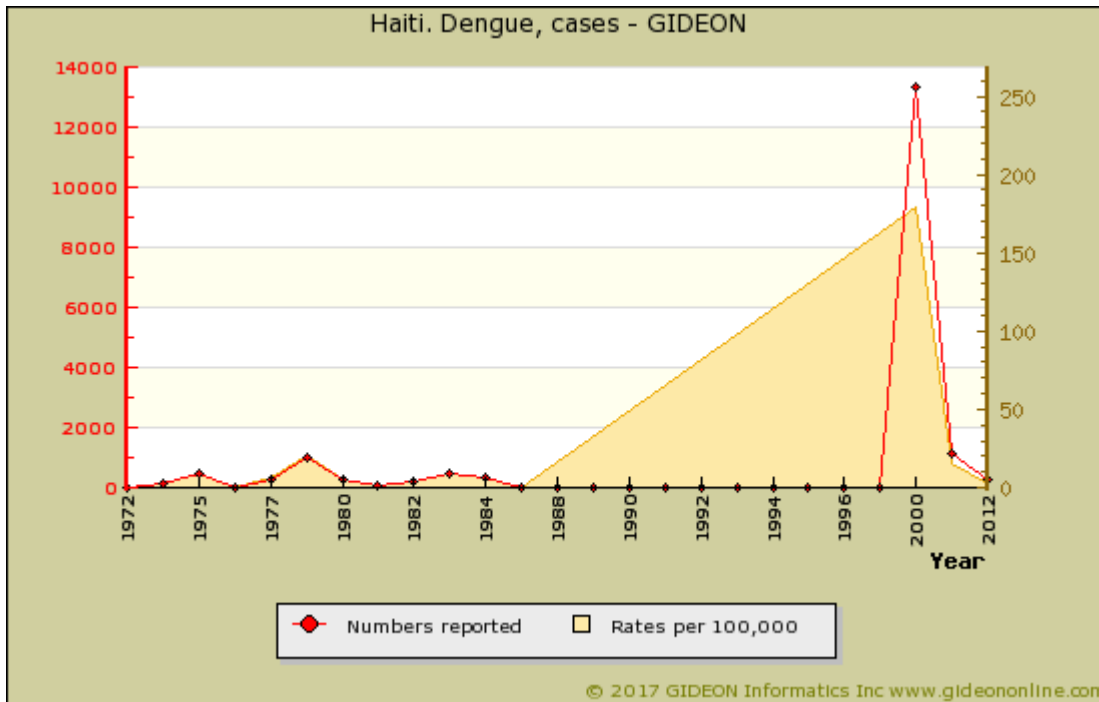
Cytomegalovirus infection

Agent	VIRUS - DNA. Herpesviridae, Betaherpesvirinae: Human herpesvirus 5 (Cytomegalovirus)
Reservoir	Human
Vector	None
Vehicle	Droplet (respiratory), Urine, Dairy products, Tears, Stool, Sexual, contact (rare), Transplacental, Breastfeeding
Incubation Period	3w - 5w (range 2w - 12w)
Diagnostic Tests	Viral culture (blood, CSF, urine, tissue). Serology. Direct viral microscopy. Nucleic acid amplification
Typical Adult Therapy	(Most cases self-limited). Ganciclovir 5 mg/kg q12h IV X 2 to 3w. OR Foscarnet 90 mg/kg Q12h IV OR Cidofovir 5 mg/kg IV weekly
Typical Pediatric Therapy	(Most cases self-limited) Ganciclovir 5 mg/kg q12h IV X 2 to 3w
Vaccine	Cytomegalovirus immunoglobulin
Clinical Hints	Heterophile-negative "mononucleosis" Mild pharyngitis, without exudate Variable degree of lymphadenopathy and splenomegaly Retinitis in AIDS patients Pneumonia in setting of immune suppression Congenital infection characterized by multisystem disease in newborns
Synonyms	Cytomegalovirus, Zytomegalie. ICD9: 078.5 ICD10: B25

Dengue

Agent	VIRUS - RNA. Flaviviridae, Flavivirus: Dengue virus
Reservoir	Human, Mosquito, Monkey (in Malaysia and Africa)
Vector	Mosquito - <i>Stegomyia (Aedes) aegypti</i> , <i>S. albopictus</i> , <i>S. polynesiensis</i> , <i>S. scutellaris</i>
Vehicle	Blood, Breastfeeding
Incubation Period	5d - 8d (range 2d - 15d)
Diagnostic Tests	Viral isolation (blood). Serology. Nucleic acid amplification. Biosafety level 2.
Typical Adult Therapy	Supportive; IV fluids to maintain blood pressure and reverse hemoconcentration
Typical Pediatric Therapy	As for adult
Vaccine	Dengue vaccine
Clinical Hints	Headache, myalgia, arthralgia Relative bradycardia, leukopenia and macular rash Severe dengue (DHF or dengue-shock syndrome) defined as dengue with thrombocytopenia, hemoconcentration and hypotension.
Synonyms	Bouquet fever, Break-bone fever, Dandy fever, Date fever, Dengue Fieber, Duengero, Giraffe fever, Petechial fever, Polka fever. ICD9: 061 ICD10: A90,A91

Dengue in Haiti



Graph: Haiti. Dengue, cases

Notes:

1. No cases were officially reported during 1994 to 1996; however 185 cases were documented among children at a UN mission during this period ^{1 2} ; and 30 cases were confirmed among U.S. military personnel serving in this area during 1994. ³

Individual years:

2015 - 56 cases were reported during January to May. ⁴

Seroprevalence surveys

Years	Region	Study Group	%	Notes
1969 - 1971		children	43	⁵
1994 - 1996	Port-Au-Prince	children	98	98% of children ages 6 to 13 years ⁶
2011 - 2014		children	60.6	⁷
1990 - 1999		general population	3	
2003 - 2004	Leogane	general population	33.7	33.7% of individuals in Leogane ⁸
2012		general population	15	15% of persons ages 24 to 61 years ⁹
2016*	multiple locations	general population	72.1	seroprevalence in Ouest and Sud-Est Departments ¹⁰
2007		infants	53-65	53% of infants below age 12 months, and 65% by age 36 months ¹¹

* indicates publication year (not necessarily year of survey)

Dengue hemorrhagic fever was first reported on Haiti in 2000 (314 cases, 10 fatal).

Notable outbreaks

Years	Cases	Population	Notes
2010	16	missionaries	Outbreak among American missionaries who had returned from Haiti ¹²

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Dermatophytosis

Agent	FUNGUS. Ascomycota, Euascomyces, Onygenales: <i>Epidermophyton</i> , <i>Microsporum</i> , <i>Trichophyton</i> , <i>Trichosporon</i> spp., <i>Arthroderma</i> , et al
Reservoir	Human, Dog, Cat, Rabbit, Marsupial, Other mammal
Vector	None
Vehicle	Contaminated soil/flooring, Animal Contact
Incubation Period	2w - 38w
Diagnostic Tests	Fungal culture and microscopy of skin, hair or nails. Nucleic acid amplification.
Typical Adult Therapy	Skin - topical Clotrimazole, Miconazole , etc. Hair/nails - Terbinafine , Griseofulvin , Itraconazole or Fluconazole PO
Typical Pediatric Therapy	As for adult
Clinical Hints	Erythematous, circinate, scaling or dyschromic lesions of skin, hair or nails Pruritus, secondary infection or regional lymphadenopathy may be present
Synonyms	Arthroderma, DermatOMICOSE, DermatomyCose, DermatomyCosis, DermatomyKose, DermatomyKosen, Emericella, Favus, Granuloma trichophyticum, Gruby's disease, Kodamaea, Leukonychia trichophytica, Microsporum, Natrassia, Onychocola, Onychomycosis, Pityriasis versicolor, Ringworm, Saint Aignan's disease, Scopulariopsis, Scytalidium, Tinea, Tinea barbae, Tinea capitis, Tinea corporis, Tinea cruris, Tinea favosa, Tinea imbricata, Tinea manum, Tinea pedis, Tinea unguinum, Tokelau ringworm, Triadelphia pulvinata, Trichomycosis, Trichophytosis, Trichophytosis gladiatorum. ICD9: 110,111 ICD10: B35,B36

Dermatophytosis in Haiti

Although *Trichophyton tonsurans* had not been reported in Haiti until 1988, this species accounted for 63.6% of tinea capitis cases in Port-au-Prince in 2006. ¹

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1. [Med Mycol 2009 Mar ;47\(2\):197-200.](#)

Dicrocoeliasis

Agent	PARASITE - Platyhelminthes, Trematoda. Plagiorchiida, Dicrocoeliidae: <i>Dicrocoelium dendriticum</i> and <i>D. hospes</i>
Reservoir	Sheep, Cattle, Pig, Goat, Snail, Ant
Vector	None
Vehicle	Ingested ant
Incubation Period	Unknown
Diagnostic Tests	Identification of ova in stool, bile or duodenal aspirate.
Typical Adult Therapy	Praziquantel 25 mg/kg PO TID X 1d (investigational)
Typical Pediatric Therapy	As for adult
Clinical Hints	Abdominal pain, often accompanied by eosinophilia Follows inadvertent ingestion of ants (with raw vegetables or fruit) in sheep-raising areas.
Synonyms	<i>Dicrocoelium dendriticum</i> , <i>Dicrocoelium hospes</i> , Halzoun, Lancet liver fluke. ICD9: 121.8 ICD10: B66.2

Although Dicrocoeliasis is not endemic to Haiti, imported, expatriate or other presentations of the disease have been associated with this country.

Dicrocoeliasis in Haiti

Prevalence surveys

Years	Study Group	%	Notes
2007*	sheep	1.1	1.1% of sheep ¹

* indicates publication year (not necessarily year of survey)

References

1. [Rev Sci Tech 2007 Dec ;26\(3\):741-6.](#)

Dientamoeba fragilis infection

Agent	PARASITE - Protozoa. Metamonada, Parabasala, Trichomonadea. Flagellate: <i>Dientamoeba fragilis</i>
Reservoir	Human, Gorilla, Pig
Vector	None
Vehicle	Fecal-oral (ingestion of pinworm ova)
Incubation Period	8d - 25d
Diagnostic Tests	Identification of trophozoites in stool. Nucleic acid amplification. Alert laboratory if this diagnosis is suspected.
Typical Adult Therapy	Stool precautions. Iodoquinol 650 mg PO TID X 20d. OR Tetracycline 500 mg QID X 10d. OR Paromomycin 10 mg/kg TID X 7d OR Metronidazole 750 mg PO TID X 10d
Typical Pediatric Therapy	Stool precautions. Iodoquinol 13 mg/kg PO TID X 20d. OR (age >8) Tetracycline 10 mg/kg QID X 10d OR Paromomycin 10 mg/kg TID X 7d OR Metronidazole 15 mg/kg PO TID X 10d
Clinical Hints	Abdominal pain with watery or mucous diarrhea Eosinophilia may be present Concurrent enterobiasis (pinworm) is common Infestation may persist for more than one year
Synonyms	

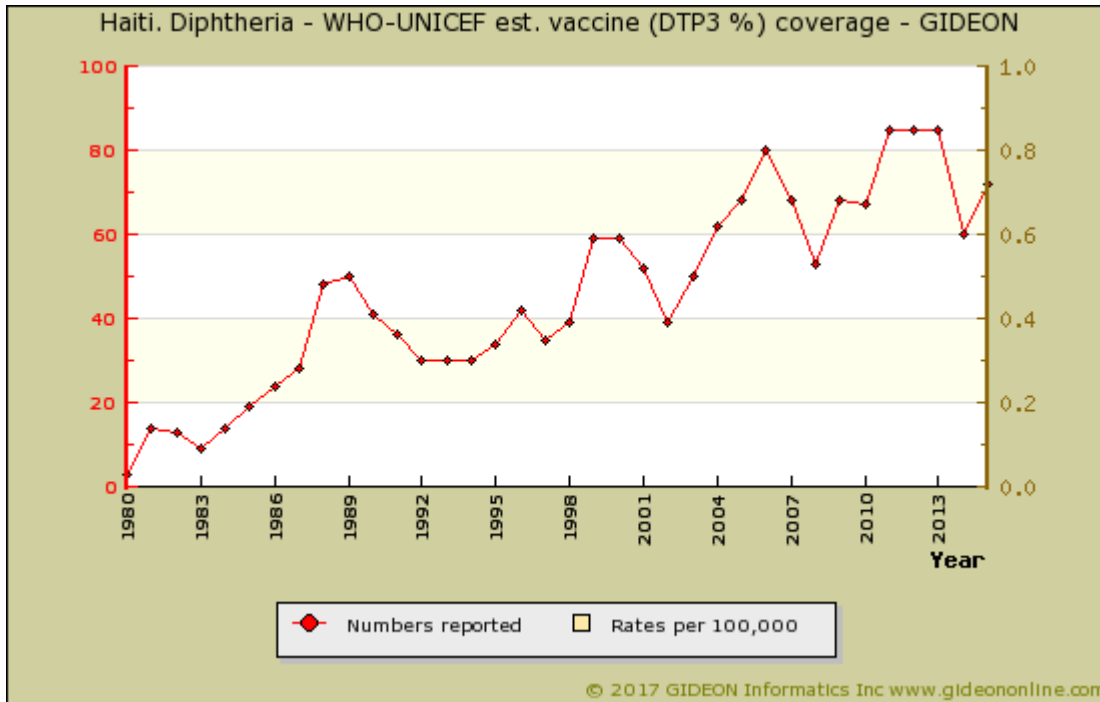
Diphtheria

Agent	BACTERIUM. <i>Corynebacterium diphtheriae</i> A facultative gram-positive bacillus
Reservoir	Human
Vector	None
Vehicle	Droplet, Contact, Dairy products, Clothing
Incubation Period	2d - 5d (range 1d - 10d)
Diagnostic Tests	Culture on special media. Advise laboratory when this diagnosis is suspected.
Typical Adult Therapy	Respiratory isolation. Equine antitoxin 20,000 to 80,000 units IM. (first perform scratch test) Erythromycin 500 mg QID (or Penicillin preparation) X 14d
Typical Pediatric Therapy	Respiratory isolation. Equine antitoxin 1,000 units/kg IM. (first perform scratch test) Erythromycin 10 mg/kg QID (or penicillin preparation) X 14d
Vaccines	Diphtheria antitoxin Diphtheria vaccine DTP vaccine DT vaccine DTaP vaccine Td vaccine
Clinical Hints	Pharyngeal membrane with cervical edema and lymphadenopathy "Punched out" skin ulcers with membrane Myocarditis or neuropathy (foot/wrist drop) may appear weeks following initial infection
Synonyms	<i>Corynebacterium diphtheriae</i> , Difteri, Difteria, Difterie, Difterite, Diphterie. ICD9: 032 ICD10: A36

Diphtheria in Haiti

Vaccine Schedule:

BCG - birth
DTwPHibHepB - 6,10,14 weeks
HepB - >= 12 years
IPV - 6 weeks
MMR - 12, 24 months
MR - 9 months
OPV - 6,10,14 weeks
Rotavirus - 6,10 weeks
Td - 1st contact; +4 weeks; +6 months; +1, +1 years pregnant women

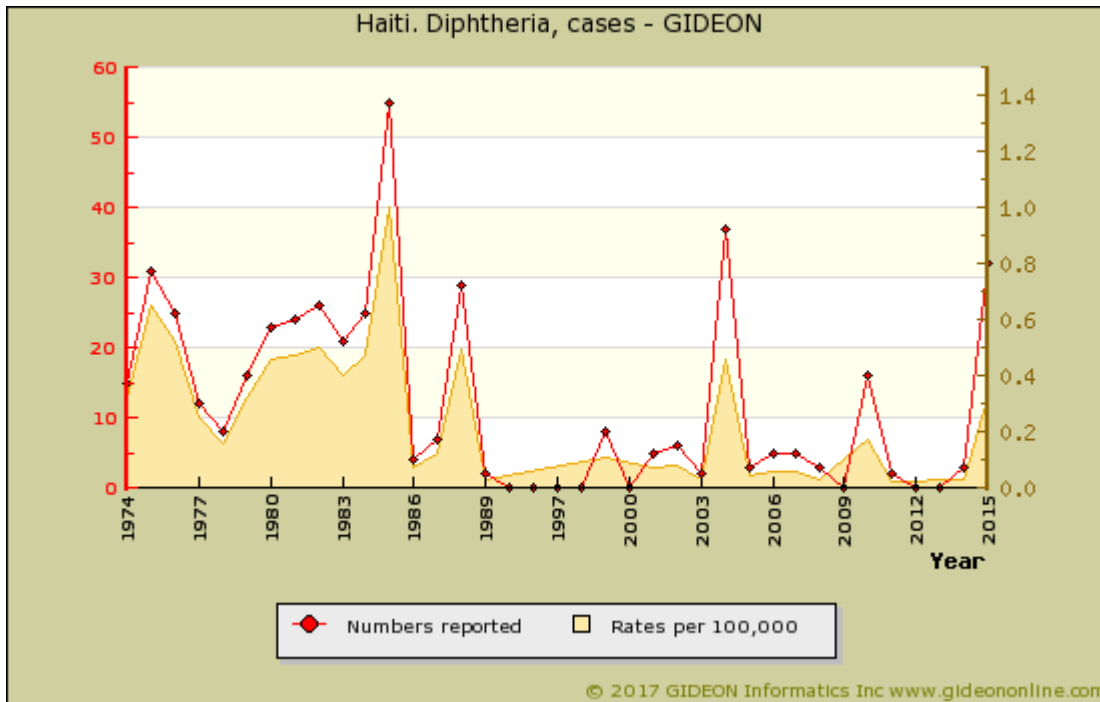


Graph: Haiti. Diphtheria - WHO-UNICEF est. vaccine (DTP3 %) coverage

Notes:

Individual years:

2009 - A survey found that 92.0% of children ages 12 to 23 months had been immunized (DPT-1). ¹



Graph: Haiti. Diphtheria, cases

Notes:

Individual years:

2007 - Included 14 fatal cases.

2015 - Included 8 fatal cases. ²

In 1990, a child in the United States died of diphtheria, following close contact with persons coming from Haiti. ³

- In 2003, a visitor from the United States died of diphtheria following a trip to Haiti. ^{4 5}

Notable outbreaks

Years	Cases	Deaths	Notes
2009 - 2010	33	15	^{6 7}

References

1. Vaccine 2012 Feb 21;30(9):1746-51.
2. ProMED <promedmail.org> archive: 20160401.4132685
3. Clin Infect Dis 1993 Jan ;16(1):59-68.
4. MMWR Morb Mortal Wkly Rep 2004 Jan 9;52(53):1285-6.
5. ProMED <promedmail.org> archive: 20091030.3755
6. ProMED <promedmail.org> archive: 20091030.3755
7. ProMED <promedmail.org> archive: 20100519.1644

Diphyllobothriasis

Agent	PARASITE - Platyhelminthes, Cestoda. Pseudophyllidea, Diphylobothriidae: <i>Diphyllobothrium latum</i> , et al
Reservoir	Human, Dog, Bear, Fish-eating mammal
Vector	None
Vehicle	Fresh-water fish - notably (for <i>D. latum</i>) perch, burbot and pike
Incubation Period	4w - 6w (range 2w - 2y)
Diagnostic Tests	Identification of ova or proglottids in feces.
Typical Adult Therapy	Praziquantel 10 mg/kg PO as single dose OR Niclosamide 2 g PO once
Typical Pediatric Therapy	Praziquantel 10 mg/kg PO as single dose OR Niclosamide 50 mg/kg PO once
Clinical Hints	Abdominal pain, diarrhea and flatulence Vitamin B12 deficiency is noted in 0.02% of patients Rare instances of intestinal obstruction have been described Worm may survive for decades in the human intestine
Synonyms	Adenocephalus pacificus, Bandwurm [Diphyllobothrium], Bothriocephalus acheilognathi, Bothriocephalus latus, Broad fish tapeworm, Diphyllobothrium cordatum, Diphyllobothrium dalliae, Diphyllobothrium dendriticum, Diphyllobothrium klebanovskii, Diphyllobothrium latum, Diphyllobothrium nihonkaiense, Diphyllobothrium stemmacephalum, Diphyllobothrium ursi, Diplogonoporiasis, Fish tapeworm. ICD9: 123.4 ICD10: B70.0

Dipylidiasis

Agent	PARASITE - Platyhelminthes, Cestoda. Cyclophyllidea, Dipylidiidae: <i>Dipylidium caninum</i>
Reservoir	Dog, Cat
Vector	None
Vehicle	Ingested flea (<i>Ctenocephalides</i> spp.)
Incubation Period	21d - 28d
Diagnostic Tests	Identification of proglottids in feces.
Typical Adult Therapy	Praziquantel 10 mg/kg PO as single dose OR Niclosamide 2 g PO once
Typical Pediatric Therapy	Praziquantel 10 mg/kg PO as single dose OR Niclosamide 50 mg/kg PO once
Clinical Hints	Diarrhea, abdominal distention and restlessness (in children) Eosinophilia present in some cases Proglottids may migrate out of the anus
Synonyms	Cucumber tapeworm, <i>Dipylidium caninum</i> , Dog tapeworm, Double-pored dog tapeworm. ICD9: 123.8 ICD10: B71.1

Dirofilariasis

Agent	PARASITE - Nematoda. Secernentea: <i>Dirofilaria (Nochtiella) immitis</i> (pulmonary); <i>D. tenuis</i> & <i>D. repens</i> (subcutaneous infection) & <i>D. ursi</i>
Reservoir	Mammal, Dog, Wild carnivore (<i>D. tenuis</i> in raccoons; <i>D. ursi</i> in bears)
Vector	Mosquito
Vehicle	None
Incubation Period	60d - 90d
Diagnostic Tests	Identification of parasite in tissue. Serology. Nucleic acid amplification.
Typical Adult Therapy	Not available; excision is often diagnostic and curative
Typical Pediatric Therapy	As for adult
Clinical Hints	Most patients are asymptomatic Cough and chest pain in some cases Solitary pulmonary coin lesion seen on imaging Multiple tender subcutaneous nodules may be present Eosinophilia is usually absent
Synonyms	Candidatus <i>Dirofilaria hongkongensis</i> , Dirofilariosis, Dirofiliaria, Dog heartworm, <i>Filaria conjunctivae</i> , Loaina. ICD9: 125.6 ICD10: B74.8

Dirofilariasis in Haiti

Prevalence surveys

Years	Study Group	%	Notes
2016*	dogs	22.2	22.2% of owned dogs ¹

* indicates publication year (not necessarily year of survey)

References

1. [Vet Parasitol 2016 Jul 15;224:7-12.](#)

Echinococcosis - unilocular

Agent	PARASITE - Platyhelminthes, Cestoda. Cyclophyllidea, Taeniidae: <i>Echinococcus granulosus</i> , <i>Echinococcus canadensis</i>
Reservoir	Dog, Wolf, Dingo, Sheep, Horse, Pig
Vector	None
Vehicle	Soil, Dog feces, Fly
Incubation Period	1y - 20y
Diagnostic Tests	Serology. Identification of parasite in surgical specimens.
Typical Adult Therapy	Albendazole 400 mg BID X 28d. Repeat X 3, with 2 week hiatus between cycles. Praziquantel has been used preoperatively to sterilize cyst. Follow by surgery as indicated. PAIR (puncture-aspiration-injection-reaspiration) is also used
Typical Pediatric Therapy	Albendazole 10 mg/kg/day X 28d. Repeat X 3, with 2 week hiatus between cycles. Praziquantel has been used preoperatively to sterilize cyst. Follow by surgery as indicated. PAIR (puncture-aspiration-injection-reaspiration) also used
Clinical Hints	Calcified hepatic cyst or mass lesions in lungs and other organs Brain and lung involvement are common in pediatric cases
Synonyms	<i>Echinococcus canadensis</i> , <i>Echinococcus granulosus</i> , <i>Echinococcus orteppi</i> , Hydatid cyst, Unilocular echinococcosis. ICD9: 122.0,122.1,122.2,122.3,122.4 ICD10: B67.0,B67.1,B67.2,B67.3,B67.4

Although Echinococcosis - unilocular is not endemic to Haiti, imported, expatriate or other presentations of the disease have been associated with this country.

Echinococcosis - unilocular in Haiti

Prevalence surveys

Years	Study Group	%	Notes
2007*	various	0.3-25	25% of dogs, 5.2% of pigs, 2.1% of sheep, 0.9% of goats and 0.3% of cattle ¹

* indicates publication year (not necessarily year of survey)

References

1. Rev Sci Tech 2007 Dec ;26(3):741-6.

Ehrlichiosis - human monocytic

Agent	BACTERIUM. Anaplasmataceae <i>Ehrlichia chaffeensis</i> <i>Ehrlichia canis</i> <i>Neoehrlichia mikurensis</i> , et al. Intracellular <i>Rickettsia</i> -like bacteria
Reservoir	Dog, Tick, Deer, Coyote
Vector	Tick (<i>Dermacentor variabilis</i> or <i>Amblyomma americanum</i>)
Vehicle	None
Incubation Period	7d - 21d
Diagnostic Tests	Intramonocytic inclusions seen in blood smear. Serology. Nucleic acid amplification. Cell culture (HL60 cells).
Typical Adult Therapy	Doxycycline 100 mg PO BID X 7 to 14 days OR Rifampin 600 mg daily
Typical Pediatric Therapy	Above age 8 years: Doxycycline 2 mg/kg PO BID X 7 to 14 days. OR Rifampin 10 mg/kg/day PO
Clinical Hints	Headache, myalgia and vomiting 1 to 2 weeks following tick bite Arthralgia or macular rash may be present; Leukopenia, thrombocytopenia or hepatic dysfunction are common Inclusions may be visible in monocytes
Synonyms	Candidatus <i>Neoehrlichia mikurensis</i> , <i>Cowdria ruminantium</i> , <i>Ehrlichia canis</i> , <i>Ehrlichia chaffeensis</i> , <i>Ehrlichia muris</i> , <i>Ehrlichia runinantium</i> , <i>Ehrlichia</i> sp. Panola Mountain, Human monocytic ehrlichiosis, <i>Neoehrlichia mikurensis</i> , Panola Mountain Ehrlichia. ICD9: 082.41 ICD10: B28.8

Although Ehrlichiosis - human monocytic is not endemic to Haiti, imported, expatriate or other presentations of the disease have been associated with this country.

Ehrlichiosis - human monocytic in Haiti

Prevalence surveys

Years	Study Group	Notes
2016*	dogs	0% of owned dogs ¹

* indicates publication year (not necessarily year of survey)

References

1. [Vet Parasitol 2016 Jul 15;224:7-12.](#)

Endocarditis - infectious

Agent	BACTERIUM OR FUNGUS. viridans streptococci, <i>Staphylococcus aureus</i> , enterococci, <i>Candida albicans</i> , et al.
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Blood culture, clinical findings, ultrasonography of heart valves.
Typical Adult Therapy	Bactericidal antibiotic appropriate to species
Typical Pediatric Therapy	As for adult
Clinical Hints	Consider in any patient with prolonged and unexplained fever, Multisystem disease and a preexisting cardiac valvular lesion may be present Manifestations include skin lesions, hematuria, neurological symptoms, single or multiple abscesses or bone, brain, lung (etc)
Synonyms	Bacterial endocarditis, Endocardite, Endocarditis, Endokarditis, Fungal endocarditis, Infectious endocarditis, S.B.E.. ICD9: 421 ICD10: I33

Entamoeba polecki infection

Agent	PARASITE - Protozoa. Sarcomastigota, Entamoebidea: <i>Entamoeba polecki</i>
Reservoir	Pig, Monkey
Vector	None
Vehicle	Contaminated food
Incubation Period	Unknown
Diagnostic Tests	Identification of cysts in stool.
Typical Adult Therapy	Metronidazole 750 mg PO TID X 10d (investigational)
Typical Pediatric Therapy	Metronidazole 15 mg/kg TID X 10d (investigational)
Clinical Hints	Mucoid diarrhea and abdominal pain Severe disease is unusual and should suggest another etiology
Synonyms	Entamoeba chattoni. ICD9: 007.8 ICD10: A07.8

Entamoeba polecki infection in Haiti

Entamoeba polecki infection was first reported from Haiti in 2006, among HIV-infected persons. ¹

References

1. [Med Trop \(Mars\) 2006 Oct ;66\(5\):461-4.](#)

Enterobiasis

Agent	PARASITE - Nematoda. Secernentea: <i>Enterobius vermicularis</i>
Reservoir	Human
Vector	None
Vehicle	Fecal-oral, Air, Clothing, Sexual contact
Incubation Period	14d - 42d
Diagnostic Tests	Apply scotch tape to anal verge in a.m. & paste onto glass slide for microscopy.
Typical Adult Therapy	Albendazole 400 mg PO as single dose - repeat in 2w. OR Mebendazole 100 mg PO as single dose - repeat in 2w. OR Pyrantel pamoate 11 mg/kg (max 1g) PO as single dose; or
Typical Pediatric Therapy	Mebendazole 100 mg PO as single dose (>age 2) - repeat in 2w. OR Pyrantel pamoate 11 mg/kg (max 1g) PO X 1
Clinical Hints	Nocturnal anal pruritus Occasionally presents with vaginitis or abdominal pain Eosinophilia is rarely, if ever, encountered
Synonyms	Enterobio, Enterobius vermicularis, Oxyuriasis, Oxyuris, Pinworm, Seatworm. ICD9: 127.4 ICD10: B80

Enterovirus infection

Agent	VIRUS - RNA. Picornaviridae: Coxsackievirus, ECHO virus, Enterovirus, Parechovirus
Reservoir	Human
Vector	None
Vehicle	Droplet, Fecal-oral, Breastfeeding, Respiratory or pharyngeal acquisition
Incubation Period	2d-7d
Diagnostic Tests	Viral culture (stool, pharynx, CSF). Serology. Nucleic acid amplification.
Typical Adult Therapy	Supportive. Pleconaril 200 to 400 mg PO TID X 7d has been used for severe infections
Typical Pediatric Therapy	Supportive. Pleconaril 5 mg/kg PO BID has been used for severe infections
Clinical Hints	Summer-to-autumn sore throat Specific forms present with conjunctivitis, chest pain, macular or vesicular rash, meningitis, myopericarditis, etc.
Synonyms	Boston exanthem [Coxsackie. A 16], Coxsackie, Coxsackievirus, ECHO, Echovirus, Enteroviruses, Hand, foot and mouth disease, Hand-foot-and-mouth disease, Herpangina [Coxsackievirus A], HEV 68, HPeVs, Human Enterovirus 68, Human Parechovirus, Ljungan virus, Myocarditis, enteroviral, Parechovirus, Pericarditis, enteroviral. ICD9: 049,079.2,008.67,074.0,074.8,074.3,070.4,078.89 ICD10: A88.0,A87.0,B08.4,B08.5,B08.8,B30.3,B34.1

Enterovirus infection in Haiti

2016 (publication year) - A case of Enterovirus D68 pneumonia was reported. The virus was identical to a strain circulating in New York at the time. ¹

References

1. [Pediatr Infect Dis J 2016 Jun 21;](#)

Epidural abscess

Agent	BACTERIUM. <i>Staphylococcus aureus</i> , facultative gram negative bacilli, etc
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Imaging (CT scan, MRI). Gram-stain and culture of blood or pus.
Typical Adult Therapy	Intravenous antibiotic(s) appropriate to identified or suspected pathogens. Drainage as indicated
Typical Pediatric Therapy	Intravenous antibiotic(s) appropriate to identified or suspected pathogen. Drainage as indicated
Clinical Hints	Frontal bone abscess; or spinal cord compression with signs of infection Often in setting of injecting drug abuse or preexisting staphylococcal infection
Synonyms	

Erysipelas or cellulitis

Agent	BACTERIUM. Erysipelas: <i>Streptococcus pyogenes</i> Cellulitis: <i>Staphylococcus aureus</i> , <i>Streptococcus pyogenes</i> , occasionally others
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	1d - 7d
Diagnostic Tests	Clinical diagnosis is usually sufficient. Aspiration of lesion for smear and culture may be helpful in some cases.
Typical Adult Therapy	Antibiotic directed at likely pathogens (Group A Streptococcus and Staphylococcus aureus)
Typical Pediatric Therapy	As for adult
Clinical Hints	Erysipelas is well-circumscribed, tender, edematous (peau d'orange), warm and painful Cellulitis is less painful, flat and without a distinct border
Synonyms	Cellulite, Cellulitis, Celulite, Celulitis, Erisipela, Erysipelas, St. Anthony's fire (erysipelas), St. Francis' fire (erysipelas), Zellulitis. ICD9: 035,681,682 ICD10: A46,L03

Erysipeloid

Agent	BACTERIUM. <i>Erysipelothrix rhusiopathiae</i> A facultative gram-positive bacillus
Reservoir	Mammal, Bird, Fish
Vector	None
Vehicle	Contact with meat (mammal, poultry or fish)
Incubation Period	1d - 4d
Diagnostic Tests	Culture.
Typical Adult Therapy	Oral therapy for 10 days: Penicillin V, Ampicillin, third-generation cephalosporin, Fluoroquinolone (Levofloxacin, Trovafloxacin, Pefloxacin, Sparfloxacin or Moxifloxacin), Erythromycin, Clindamycin or Tetracycline are generally adequate
Typical Pediatric Therapy	Oral therapy for 10 days: Penicillin V, Ampicillin, third-generation cephalosporin or Erythromycin, Clindamycin are generally adequate
Clinical Hints	Typically follows contact with raw animal or fish products Annular erythema or "target lesion" on hand Fever is present in only 10% of cases. Local pain and swelling, without discharge
Synonyms	Erysipelothrix rhusiopathiae, Rutlauf. ICD9: 027.1 ICD10: A26

Erythrasma

Agent	BACTERIUM. <i>Corynebacterium minutissimum</i> A facultative gram-positive bacillus
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Unknown
Diagnostic Tests	Coral fluorescence of skin lesion under Wood's lamp. Culture (alert lab regarding diagnosis).
Typical Adult Therapy	Erythromycin 250 mg PO QID X 14d. Topical Clindamycin 2% and topical Fusidic acid have also been used
Typical Pediatric Therapy	Erythromycin 10 mg/kg PO QID X 14d. Topical Clindamycin 2% and topical Fusidic acid have also been used
Clinical Hints	Pruritic, scaling, slowly-progressive red-brown patch Usually affects the groin - occasionally in toe webs Common in obese or diabetic males Coral fluorescence under Wood's light.
Synonyms	<i>Corynebacterium minutissimum</i> , Eritrasma. ICD9: 039.0 ICD10: L08.1

Escherichia coli diarrhea

Agent	BACTERIUM. <i>Escherichia coli</i> A facultative gram-negative bacillus
Reservoir	Human, Mammal
Vector	None
Vehicle	Food, Water, Fecal-oral
Incubation Period	1d - 3d (range 12h - 10d)
Diagnostic Tests	Stool culture. Request characterization of E. coli isolates.
Typical Adult Therapy	Supportive therapy. If EHEC, avoid anti-motility drugs and antimicrobial agents. Plasma exchange may be effective in HUS Note that antimicrobial agents may increase risk for hemolytic-uremic syndrome when used in cases of E. coli O157:H7 infection
Typical Pediatric Therapy	Supportive therapy. If EHEC, avoid anti-motility drugs and antimicrobial agents. Plasma exchange may be effective in HUS Note that antimicrobial agents may increase risk for hemolytic-uremic syndrome when used in cases of E. coli O157:H7 infection
Clinical Hints	Watery diarrhea or dysentery Common among travelers and infants Hemorrhagic colitis and hemolytic uremic syndrome are associated with type O157, and occasionally other strains
Synonyms	DAEC (Diffusely Adherent E. coli), E. coli diarrhea, EAEC (Enteroadherent E. coli), EAggEC (Enteroaggregative E. coli), EHEC (Enterohemorrhagic E. coli), EIEC (Enteroinvasive E. coli), EPEC (Enteropathogenic E. coli), Escherichia albertii, ETEC (Enterotoxigenic E. coli), Hemolytisch-uramisches Syndrom, Hemolytic Uremic Syndrome, HUS. ICD9: 008.0 ICD10: A04.0,A04.1,A04.2,A04.3,A04.4

Escherichia coli diarrhea in Haiti

Prevalence surveys

Years	Study Group	%	Notes
2012 - 2013	children	17	Enteroaggregative <i>Escherichia coli</i> was present in 17% of school children with outpatient diarrhea ¹

Notable outbreaks

Years	Region	Setting	Cases	Source	Pathogen	Notes
1976	Port au Prince	cruise ship	386	multiple sources	multiple pathogens	diarrhea. Outbreak associated with <i>Salmonella</i> , <i>Vibrio</i> , <i>Shigella</i> , ETEC and EIEC ²

References

1. Am J Trop Med Hyg 2015 Apr ;92(4):752-7.
2. Am J Public Health 1983 Jul ;73(7):770-2.

Fascioliasis

Agent	PARASITE - Platyhelminthes, Trematoda. Echinostomatida, Fasciolidae: <i>Fasciola hepatica</i> or <i>Fasciola gigantica</i>
Reservoir	Sheep, Cattle, Snail (<i>Lymnaea</i> , <i>Galba</i> , <i>Fossaria</i>)
Vector	None
Vehicle	Food, Aquatic plants, Watercress (<i>Nasturtium officinale</i>)
Incubation Period	2w - 3m
Diagnostic Tests	Identification of ova in stool or duodenal aspirates (adult parasite in tissue). Serology. PCR. CT scan.
Typical Adult Therapy	Triclabendazole 10 mg/kg PO X 2 doses. OR Bithionol 50 mg/kg every other day X 10 doses OR Nitazoxanide 500 mg PO BID X 7d
Typical Pediatric Therapy	Triclabendazole 10 mg/kg PO X 2 doses. OR Bithionol 50 mg/kg every other day X 10 doses OR Nitazoxanide : Age 1 to 3y 100 mg BID X 7 d Age 4 to 11y 200 mg BID X 7d
Clinical Hints	Fever, hepatomegaly, cholangitis, jaundice and eosinophilia Urticaria occasionally observed during the acute illness Parasite may survive more than 10 years in the biliary tract
Synonyms	Eurytrema, Fasciola gigantica, Fasciola hepatica, Hepatic distomiasis, Lederegelbefall, Sheep liver fluke. ICD9: 121.3 ICD10: B663.

Fascioliasis in Haiti

Prevalence surveys

Years	Study Group	%	Notes
2007*	ruminants	0.9-22.78	10.7% to 22.78% of livestock, 3.2% of sheep and 0.9% of goats ¹

* indicates publication year (not necessarily year of survey)

Seroprevalence surveys

Years	Region	Study Group	%	Notes
2011*	Port-Au-Prince	adults	6.5	6.5% of healthy adults in Port-au-Prince ²

* indicates publication year (not necessarily year of survey)

References

1. Rev Sci Tech 2007 Dec ;26(3):741-6.
2. J Parasitol Res 2012 ;2012:751951.

Filariasis - Bancroftian

Agent	PARASITE - Nematoda. Secernentea: <i>Wuchereria bancrofti</i>
Reservoir	Human
Vector	Mosquito (<i>Anopheles, Aedes, Culex</i>)
Vehicle	None
Incubation Period	5m - 18m (range 1m - 2y)
Diagnostic Tests	Identification of microfilariae in nocturnal blood specimen. Nucleic acid amplification. Serology may be helpful.
Typical Adult Therapy	Diethylcarbamazine : 50 mg day 1 50 mg TID day 2 100 mg TID day 3 Then 2 mg/kg TID X 18 days. OR Ivermectin 200ug/kg PO as single dose. Doxycycline 200 mg daily X 8 w is also effective.
Typical Pediatric Therapy	As for adult
Clinical Hints	Lymphangitis, lymphadenitis and eosinophilia Epididymitis, orchitis, hydrocoele or progressive edema are common Chyluria occasionally encountered Episodes of fever and lymphangitis may recur over several years
Synonyms	Bancroftian filariasis, Rosetta leg, <i>Wuchereria bancrofti</i> . ICD9: 125.0 ICD10: B74.0

Filariasis - Bancroftian in Haiti

Time and Place:

An estimated 6 million persons (73 communes) are considered at risk as of 2002.

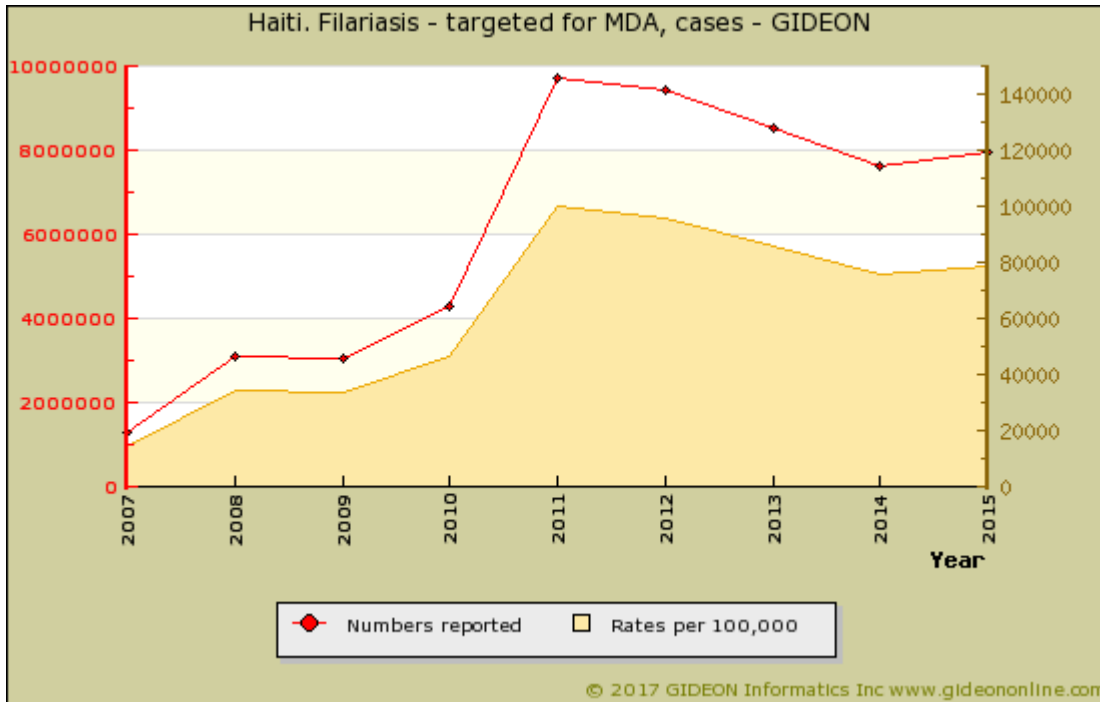
- The nationwide disease prevalence is estimated at 2.85%.
- The disease is found in scattered urban foci, mainly in the north and Gulf of La Gonave.
- Infection is found in 117 of the country's 133 communes, with highest rates in the north (2001). ¹
- Filariasis has been identified among Haitian refugees in Florida. ²

Prevalence surveys

Years	Region	Study Group	%	Notes
1999*		children	13.3	13.3% of school children ³
2001		children	7.3	7.3% of school children nationwide ⁴
1995 - 1998	multiple locations	general population	20	Carriage rates of 20% have been documented in coastal cities, including Leogane, Petit-Goave, Arachaie and Limbe. ⁵
1999	Leogane	general population	16.1	16.1% of school children in Leogane Commune
2010*	multiple locations	general population	2.9-38.2	2.9% in Corail Lemaire and 38.2% in Dampus ⁶
1981 - 1982	foreign country	immigrants	6.7	6.7% of Haitian immigrants in the United States ⁷

* indicates publication year (not necessarily year of survey)

21% of disease-free children in an endemic area developed microfilaremia during a ten-year period (1990 to 1999) ⁸



Graph: Haiti. Filariasis - targeted for MDA, cases

Notes:

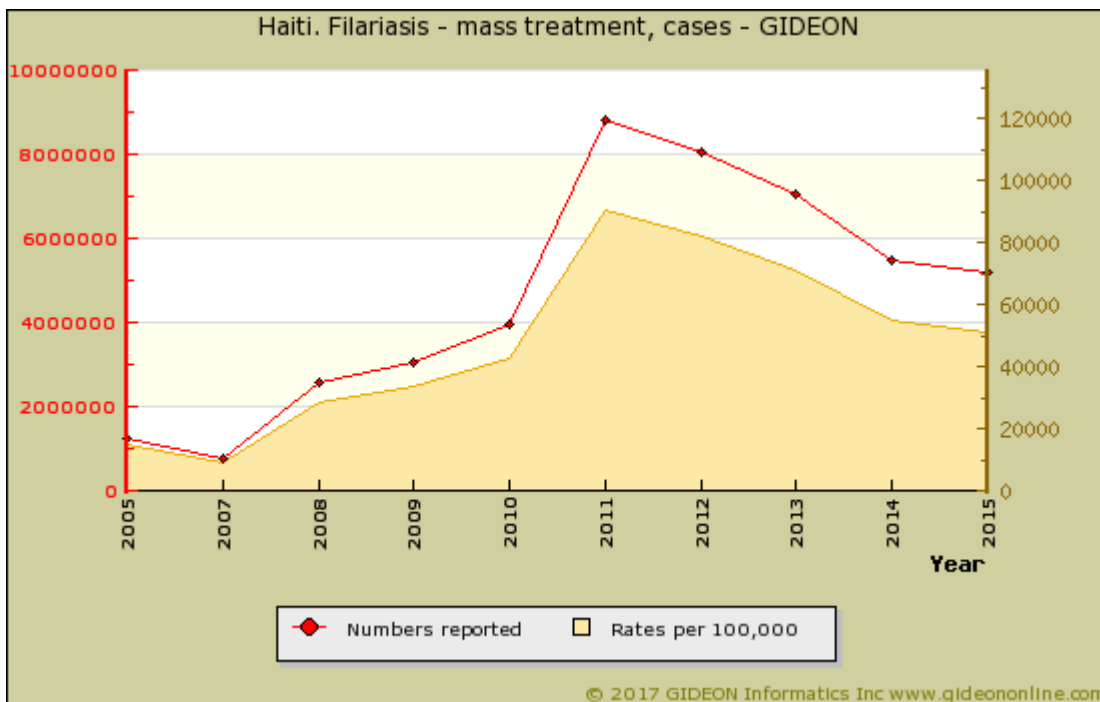
- 1. Number of persons targeted for mass treatment.

Seroprevalence surveys

14.3% to 19.7% of children ages 2 to 4 years (2010 publication) ⁹

Years	Study Group	%	Notes
2010*	children	14.3-19.7	14.3% to 19.7% of children ages 2 to 4 years ¹⁰

* indicates publication year (not necessarily year of survey)



Graph: Haiti. Filariasis - mass treatment, cases

Notes:

1. Mass treatment was administered to 105,750 individuals in 4 communes in Leogane during 2001.
2. After 5 years of annual mass administration of diethylcarbamazine and albendazole in Leogane Commune (commenced in 2000), microfilaremia, antigenemia, and mosquito infection rates were significantly reduced, but transmission was not interrupted. ¹¹
3. MDA was administered in Port-au-Prince for the first time during 2011 to 2012, resulting in 71% coverage. ¹²
3. Additional references: 2005 ¹³ 2007 ¹⁴

The local vector is *Culex quinquefasciatus*. ¹⁵

References

1. Wkly Epidemiol Rec 2007 Jan 26;82(4):25-30.
2. Am J Trop Med Hyg 1984 Mar ;33(2):246-51.
3. Am J Trop Med Hyg 1999 Mar ;60(3):479-86.
4. Am J Trop Med Hyg 2004 Oct ;71(4):466-70.
5. PLoS Negl Trop Dis 2010 ;4(4):e668.
6. PLoS Negl Trop Dis 2010 ;4(3):e640.
7. Am J Trop Med Hyg 1984 Mar ;33(2):246-51.
8. PLoS Negl Trop Dis 2012 ;6(12):e1941.
9. PLoS Negl Trop Dis 2010 ;4(3):e640.
10. Emerg Infect Dis 2007 Apr ;13(4):608-10.
11. MMWR Morb Mortal Wkly Rep 2013 Jun 14;62(23):466-8.
12. Wkly Epidemiol Rec 2006 Jun 2;81(22):221-32.
13. Wkly Epidemiol Rec 2008 Sep 12;83(37):333-41.
14. Filaria J 2003 Jul 7;2(1):11.

Fungal infection - invasive

Agent	FUNGUS. Various (major syndromes such as Candidiasis, Blastomycosis, etc are discussed separately in this module)
Reservoir	Human
Vector	None
Vehicle	Endogenous, Respiratory or pharyngeal acquisition
Incubation Period	Variable
Diagnostic Tests	Culture of blood, urine, biopsy material. Serum antigen or antibody assay in some cases.
Typical Adult Therapy	Antifungal agent(s) directed at known or likely pathogen
Typical Pediatric Therapy	As for adult
Clinical Hints	A fungal etiology should be suspected in any patient with evidence of severe local or multisystem infection, particularly in the setting of immune suppression.
Synonyms	Acremonium, Acrophialophora, Adiaspiromycosis, Allescheriasis, Alternaria, Arthrographis kalrae, Athopsis, Aureobasidium, Bipolaris, Blastobotrys proliferans, Chaetomium, Chrysosporium, Cladophialophora, Cladosporium, Curvularia, Cyphellophora, Dactylaria, Debaryomyces, Dreschslera, Emmonsia, Exophiala, Exserohilum, Fonsecaea, Fungal meningitis, Fungal sepsis, Fusarium, Geosmithia, Geosmithia argillacea, Geotrichosis, Graphium, Hansenula, Haplomycosis, Hendersonula, Humicola, Hyalophycomycosis, Kluyveromyces, Lasiodiplodia, Lasiodiplodia, Lecythophora, Magnusiomyces, Malassezia furfur, Monascus, Monosporiosis, Mycoentrospora, Neocosmospora vasinfecta, Neosartorya hiratsukae, Neosartorya udagawae, Ochroconis, Oidiodendron, Paecilomyces, Paraconiothyrium, Pestalotiopsis, Phaeoacremonium, Phaeohyphomycosis, Phialemoniopsis, Phialophora, Phoma, Pichia, Pseudallescheria, Pseudallescheriasis, Pseudochaetosphaeronema martinelli, Purpureocillium, Pyrenochaeta, Ramichloridium, Rhinocladiella, Rhytidhysterium, Saccharomyces, Saprochaete, Sarcopodium, Sarocladium, Scedosporium, Septicemia - fungal, Taeniolella, Thielavia, Trichoderma, Truncatella, Ulocladium, Veronacea, Verruconis, Wallema. ICD9: 117.6,117.8,117.9,118 ICD10: B43.1,B43.2,B43.8,B48.2,B48.3,B48.7,B48.8

Gastroenteritis - viral

Agent	VIRUS - RNA Calicivirus (Norwalk, Hawaii, Sapporo, Snow Mountain, Norovirus); Torovirus; or Astrovirus
Reservoir	Human
Vector	None
Vehicle	Food, Water, Shellfish, Vegetables
Incubation Period	Norwalk 1d - 2d; Astrovirus 3d - 4d
Diagnostic Tests	Demonstration of virus (electron microscopy or stool antigen analysis). Serology. Nucleic acid amplification.
Typical Adult Therapy	Stool precautions; supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Vomiting (less common with Astrovirus) and abdominal pain Loose, watery diarrhea lasting 1 to 3 days Fecal leucocytes not present Fever in 50%; and headache or myalgia in some cases.
Synonyms	Aichi, Astroviridae, Astrovirus, Bufavirus, Calicivirus gastroenteritis, Chiba, Cosavirus, Cyclovirus, Diarrhea, Gastroenterite virale, Hawaii agent gastroenteritis, Klassevirus, Mexico virus, Mini-reovirus, Minireovirus, Norovirus gastroenteritis, Norwalk agent gastroenteritis, Norwalk-like, Parkville virus gastroenteritis, Picobirnavirus, Recovirus, Roskilde disease, Saffold Cardiovirus, Salivirus, Salivirus, Sapovirus, Sapporo, Sapporo-like, Snow Mountain, SRSV gastroenteritis, STL polyomavirus, STLPyV, Toronto virus, Torovirus, Tusavirus, Vinterkraksjuka, Viral gastroenteritis, Winter vomiting disease. ICD9: 008.8,008.69,008.62,008.63,008.64,008.65,008.66,008.67 ICD10: A08.1,A08.2,A08.3,A08.4

GB virus C infection

Agent	VIRUS - RNA. Flaviviridae, Pegivirus GB virus C (Hepatitis G virus)
Reservoir	Human
Vector	None
Vehicle	Blood, Vertical transmission, Sexual contact suspected
Incubation Period	Unknown
Diagnostic Tests	Serology. Nucleic acid amplification.
Typical Adult Therapy	Supportive. Alpha interferon has been shown to ? transiently eliminate the carrier state
Typical Pediatric Therapy	As for adult
Clinical Hints	Acute or chronic hepatitis acquired from blood (needles, etc) Clinically milder than hepatitis C Most cases limited elevation of hepatic enzyme levels, without jaundice Viremia has been documented for as long as 10 years
Synonyms	Epatite G, GBV-C, Hepatitis G, Hepatitis GB, HPgV, HPgV-2, Human Pegivirus. ICD9: 070,59 ICD10: B17.8

Gianotti-Crosti syndrome

Agent	UNKNOWN
Reservoir	Unknown
Vector	None
Vehicle	Unknown
Incubation Period	Unknown
Diagnostic Tests	Clinical features and skin biopsy findings.
Typical Adult Therapy	None
Typical Pediatric Therapy	None
Clinical Hints	<p>History of recent viral illness or vaccination</p> <p>Generalized skin eruption involving the extremities, face and buttocks</p> <p>Lymphadenopathy of the axillae and inguinal region</p> <p>Anicteric hepatitis may occur</p> <p>Illness resolves in 15 to 42 days</p> <p>Rare outbreaks have been reported</p>
Synonyms	<p>Acrodermatitis papulosa infantilis, Papular acrodermatitis of childhood, Papulovesicular acrolocated syndrome.</p> <p>ICD9: 693.0</p> <p>ICD10: L27.8</p>

Giardiasis

Agent	PARASITE - Protozoa. Sarcocystidophora, Metamonada, Treponemata. Flagellate: <i>Giardia lamblia</i> (<i>G. intestinalis</i> , <i>G. duodenalis</i>)
Reservoir	Human, Beaver, Muskrat, Dog, Cat, Carnivores, Sheep, Goat, Horse, Cattle
Vector	None
Vehicle	Food, Water, Fecal-oral, Fly
Incubation Period	1w - 3w (range 3d - 6w)
Diagnostic Tests	String test (gelatin capsule containing string). Stool microscopy or antigen assay. Nucleic acid amplification.
Typical Adult Therapy	Tinidazole 2 g PO X1. OR Nitazoxanide 500 mg PO BID X 3d Alternatives: Metronidazole 250 mg PO TID X 5d. OR Furazolidone 100 mg PO QID X 7d. OR Paromomycin 10 mg/kg PO TID X 7d OR Quinacrine 100 mg PO TID X 5d
Typical Pediatric Therapy	Tinidazole 50 mg PO X 1 (maximum 2g). OR Nitazoxanide : Age 1 to 3y 100 mg BID X 7 d Age 4 to 11y 200 mg BID X 7d Alternatives: Metronidazole 5 mg/kg PO TID X 5d. OR Furazolidone 1.5 mg/kg QID X 7d
Clinical Hints	Foul smelling, bulky diarrhea, nausea and flatulence Upper abdominal pain is common Illness may "wax and wane" Weight loss and low-grade fever are common Severe or intractable infection may suggest underlying IgA deficiency
Synonyms	Beaver fever, <i>Giardia duodenalis</i> , <i>Giardia intestinalis</i> , <i>Giardia lamblia</i> , Lambliasis. ICD9: 007.1 ICD10: A07.1

Giardiasis in Haiti

Prevalence surveys

Years	Study Group	%	Notes
2011	food handlers	4	4% of food handlers working with health-care personnel ¹
1990 - 1993	patients - HIV/AIDS	3	3% of HIV-positive adults with diarrhea ²
2003 - 2004	patients - HIV/AIDS	6	6% of HIV-positive patients with chronic diarrhea ³

References

1. *Pathog Glob Health* 2016 Feb ;110(1):30-2.
2. *Ann Intern Med* 1994 Nov 01;121(9):654-7.
3. *Am J Trop Med Hyg* 2009 Jun ;80(6):1060-4.

Gonococcal infection

Agent	BACTERIUM. <i>Neisseria gonorrhoeae</i> An aerobic gram-negative coccus
Reservoir	Human
Vector	None
Vehicle	Sexual, contact, Childbirth, Exudates, Respiratory or pharyngeal acquisition
Incubation Period	2d - 7d
Diagnostic Tests	Smear (male), culture. Consult laboratory for proper acquisition & transport. Nucleic acid amplification.
Typical Adult Therapy	Ceftriaxone 250 mg IM X 1. PLUS Azithromycin 1 g PO as single dose.
Typical Pediatric Therapy	Weight <=45 kg: Ceftriaxone 25 - 50 mg/kg IM or IV X 1 (max. 125 mg IM) Weight >45 kg: as for adult. PLUS Azithromycin
Clinical Hints	Copious urethral discharge (male) or cervicitis beginning 2 to 7 days after sexual exposure Pelvic inflammatory disease Systemic disease associated with fever, painful pustules and suppurative arthritis (primarily encountered in postmenstrual females)
Synonyms	Blennorrhagie, Blenorrhagia, Gonococemia, Gonore, Gonorre, Gonorrea, Gonorrhoea, Gonorrhee, Gonorrhoe, Gonorrhoe, Infeccion gonococica, Infeccoes gonococicas, Neisseria gonorrhoeae. ICD9: 098 ICD10: A54

Gonococcal infection in Haiti

Prevalence surveys

Years	Region	Study Group	%	Notes
2014 - 2015	Port-Au-Prince	adolescents	6.25	6.25% of adolescents in Port-au-Prince (gonorrhea / <i>Chlamydia</i>) ¹
2014*		men	0	0% of rural men with urethritis ²
1996	Artibonite Valley	pregnant women	2.3	2.3% of pregnant women in the Artibonite Valley ³
2012	Southwestern Region	women	1-4.1	1% to 4.1% of rural women attending clinics ⁴
2013*		women	1	1% of adult female outpatients with gynecological symptoms ⁵

* indicates publication year (not necessarily year of survey)

12% of pregnant women in Cite Soleil are infected with *Chlamydia*, Gonorrhoea - or both (1995 publication) ⁶

References

1. [AIDS Patient Care STDS 2016 Aug ;30\(8\):371-8.](#)
2. [Int J STD AIDS 2015 Sep ;26\(10\):710-5.](#)
3. [Am J Trop Med Hyg 2000 Apr ;62\(4\):496-501.](#)
4. [Am J Trop Med Hyg 2014 Nov ;91\(5\):881-6.](#)
5. [Int J STD AIDS 2014 Aug ;25\(9\):669-75.](#)
6. [J Infect Dis 1995 Sep ;172\(3\):764-71.](#)

Granuloma inguinale

Agent	BACTERIUM. <i>Klebsiella granulomatis</i> (formerly <i>Calymmatobacterium granulomatis</i>) A gram-negative bacillus
Reservoir	Human
Vector	None
Vehicle	Sexual, contact, Direct contact
Incubation Period	7d - 30d (range 3d - 1 year)
Diagnostic Tests	Identification of organism in stained smears. Culture in specialized laboratories (HEp-2 cells).
Typical Adult Therapy	Azithromycin 1 g weekly X 3 w. Alternatives: Doxycycline 100 mg BID PO X 3w. Sulfamethoxazole / Trimethoprim 800/160 mg BID X 3w Erythromycin 500 mg QID X 3w.
Typical Pediatric Therapy	Azithromycin 10 mg / kg po day 1; then 250 mg / kg daily days 2 to 5 Alternatives: Sulfamethoxazole / Trimethoprim , Erythromycin or Doxycycline
Clinical Hints	Slowly expanding, ulcerating skin nodule with friable base Usually painless May be complicated by edema or secondary infection Rarely spreads to bone or joints
Synonyms	Calymmatobacterium granulomatis, Donovanosis, Granuloma genitoinguinale, Granuloma inguinale tropicum, Granuloma venereum, Sixth venereal disease. ICD9: 099.2 ICD10: A58

Hepatitis A

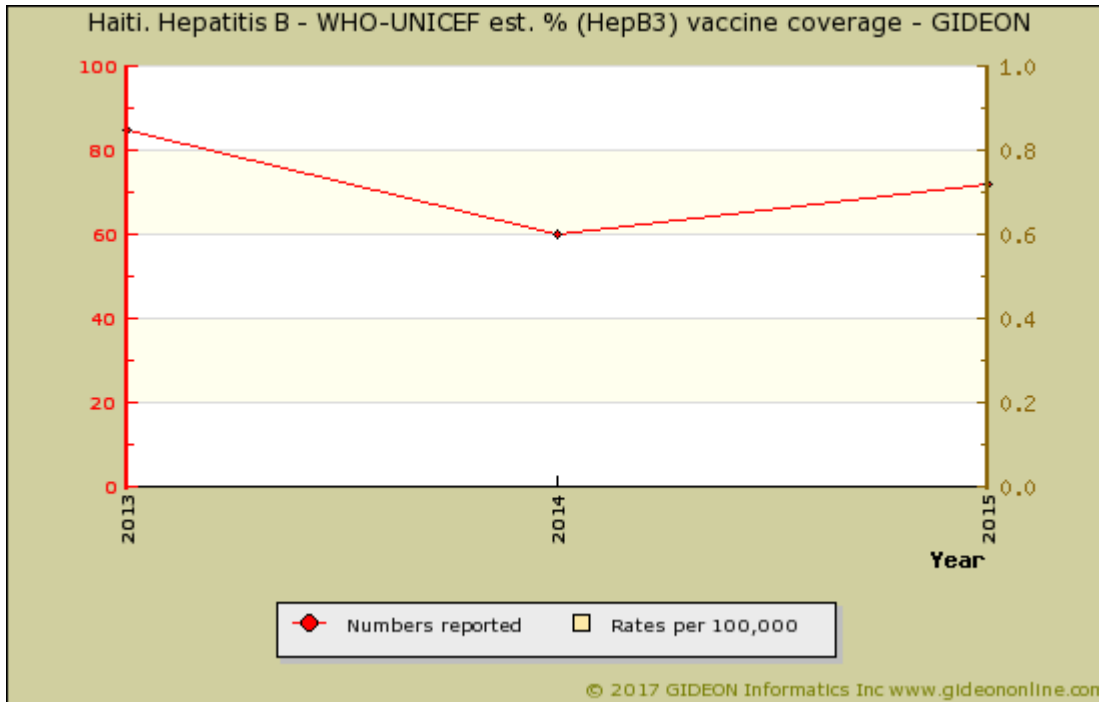
Agent	VIRUS - RNA. Picornaviridae, Hepatovirus: Hepatitis A virus
Reservoir	Human, Non-human primate
Vector	None
Vehicle	Fecal-oral, Food, Water, Milk, Fly, Breastfeeding
Incubation Period	21d - 30d (range 14d - 60d)
Diagnostic Tests	Serology. Nucleic acid amplification.
Typical Adult Therapy	Stool precautions; supportive
Typical Pediatric Therapy	As for adult
Vaccines	Hepatitis A vaccine Hepatitis A + Hepatitis B vaccine Immune globulin
Clinical Hints	Vomiting, anorexia, dark urine, light stools and jaundice Rash and arthritis occasionally encountered Fulminant disease, encephalopathy and fatal infections are rare Case-fatality rate 0.15% to 2.7%, depending on age
Synonyms	Botkin's disease, Epatite A, HAV, Hepatite per virus A, Infectious hepatitis, Sosuga. ICD9: 070.0 ICD10: B15.0, B15.9

Hepatitis B	
Agent	VIRUS - DNA. Hepadnaviridae, Orthohepadnavirus: Hepatitis B virus
Reservoir	Human Non-human primate
Vector	None
Vehicle	Blood, Infected secretions, Sexual contact, Transplacental
Incubation Period	2m - 3m (range 1m - 13m)
Diagnostic Tests	Serology. Nucleic acid amplification.
Typical Adult Therapy	Needle precautions. For chronic infection: Peginterferon alfa-2a or Peginterferon alfa-2b OR Entecavir OR Tenofovir
Typical Pediatric Therapy	As for adult
Vaccines	Hepatitis A + Hepatitis B vaccine Hepatitis B + Haemoph. influenzae vaccine Hepatitis B immune globulin Hepatitis B vaccine
Clinical Hints	Vomiting and jaundice Rash or arthritis occasionally noted Fulminant and fatal infections are encountered Risk group (drug abuse, blood products, sexual transmission) Hepatic cirrhosis or hepatoma may follow years after acute illness
Synonyms	Epatite B, HBV, Hepatite per virus B, Serum hepatitis. ICD9: 070.1 ICD10: B16.2,B16.9, B16.1

Hepatitis B in Haiti

Vaccine Schedule:

- BCG - birth
- DTwPHibHepB - 6,10,14 weeks
- HepB - >= 12 years
- IPV - 6 weeks
- MMR - 12, 24 months
- MR - 9 months
- OPV - 6,10,14 weeks
- Rotavirus - 6,10 weeks
- Td - 1st contact; +4 weeks; +6 months; +1, +1 years pregnant women



Graph: Haiti. Hepatitis B - WHO-UNICEF est. % (HepB3) vaccine coverage5 in 2013.

HBsAg-positivity surveys

Years	Study Group	%	Notes
1990	blood donors	5.5	5.5% of blood donors in 1990
2001	blood donors	5.56	
1988	general population	13	13% of rural Haitians (1988) ¹
1996	pregnant women	2-7	2% to 7% of pregnant women in 1996
2000	pregnant women	3.8	
2012	pregnant women	2.5	2.5% of pregnant women (2012) ²

References

1. Bull Soc Pathol Exot Filiales 1989 ;82(3):308-15.
2. J Clin Virol 2016 Mar ;76:66-71.

Hepatitis C

Agent	VIRUS - RNA. Flaviviridae, Hepacivirus: Hepatitis C virus
Reservoir	Human
Vector	None
Vehicle	Blood, Sexual contact, Transplacental
Incubation Period	5w - 10w (range 3w - 16w)
Diagnostic Tests	Serology. Nucleic acid amplification.
Typical Adult Therapy	Needle precautions. For chronic infection: Ledipasvir / Sofusbuvir OR Ombitasvir-Paritaprevir-Ritonavir + Dasabuvir + Ribavirin OR Sofusbuvir + Simeprevir + Ribavirin (Regimen / Duration dependent on viral genotype)
Typical Pediatric Therapy	Agents recommended for adult disease are not currently licensed for use in children Peginterferon alfa-2b 3 MU/m2 SC x1 weekly AND Ribavirin 15mg/kg
Clinical Hints	Vomiting and jaundice May be history of transfusion or injection within preceding 1 to 4 months Chronic hepatitis and fulminant infections are encountered Hepatic cirrhosis or hepatoma may follow years after acute illness
Synonyms	Epatite C, HCV, Hepatite per virus C, Non-A, non-B parenteral hepatitis. ICD9: 070.2,070.3,070.44,070.51,070.54,070.7 ICD10: B17.1

Hepatitis C in Haiti

The nationwide carriage rate in 1997 was estimated at 2.00%.

Seroprevalence surveys

Years	Region	Study Group	%	Notes
2000 - 2001	Bjrand	blood donors	1.2	1.20% of blood donors (2000 to 2001)
2004*	Cap-Haitien	patients	4.4	4.4% of outpatients in Cap-Haitien (2004 publication) ¹

* indicates publication year (not necessarily year of survey)

References

1. BMC Gastroenterol 2004 Dec 14;4:31.

Hepatitis D

Agent	VIRUS - RNA. Deltavirus: Hepatitis D virus - a 'satellite' virus which is encountered as infection with a co-virus (Hepatitis B)
Reservoir	Human
Vector	None
Vehicle	Infected secretions, Blood, Sexual contact
Incubation Period	4w - 8w (range 2w - 20w)
Diagnostic Tests	Serology. Nucleic acid amplification.
Typical Adult Therapy	Needle precautions; supportive Interferon alfa 2-a has been used.
Typical Pediatric Therapy	As for adult
Clinical Hints	Vomiting and jaundice Biphasic course often noted Occurs as a coinfection or superinfection of hepatitis B May be chronic or fulminant (prognosis of combined hepatitis B and delta is worse than reported for hepatitis B alone).
Synonyms	Epatite D, Hepatitis delta. ICD9: 070.41,070.52 ICD10: B17.0

Hepatitis E

Agent	VIRUS - RNA. Caliciviridae: Hepatitis E virus
Reservoir	Human, Rodent, Pig
Vector	None
Vehicle	Fecal-oral, Water, Shellfish, Blood, Meat
Incubation Period	30d - 40d (range 10d - 70d)
Diagnostic Tests	Identification of virus by immune electron microscopy (stool). Serology. Nucleic acid amplification.
Typical Adult Therapy	Stool precautions; supportive Ribavirin has been used successfully in high-risk patients.
Typical Pediatric Therapy	As for adult
Vaccine	Hepatitis E vaccine
Clinical Hints	Clinically similar to hepatitis A Chronic residua are rare Severe or fatal if acquired during pregnancy (10% to 24% case-fatality rate).
Synonyms	Epatite E, Non-A, non-B enteric hepatitis. ICD9: 070.43,070.53 ICD10: B17.2

Hepatitis E in Haiti

Notable outbreaks

Years	Cases	Population	Notes
1995	4	military personnel	Outbreak among Bangladeshi United Nations peacekeepers in Haiti. 3% of United Nations peacekeepers in this country are seropositive. 1 2

References

1. Am J Trop Med Hyg 1997 Oct ;57(4):449-54.
2. Am J Trop Med Hyg 1998 Jun ;58(6):731-6.

Herpes B infection

Agent	VIRUS - DNA. Herpesviridae, Alphaherpesviridae, Simplexvirus: Cercopithecine herpesvirus 1 (Herpes B virus)
Reservoir	Monkey (<i>Macaca species</i> and <i>Cynomolgus</i>)
Vector	None
Vehicle	Contact or bite, Respiratory or pharyngeal acquisition
Incubation Period	10d - 20d (range 2d - 60d)
Diagnostic Tests	Viral culture (skin exudates). Nucleic acid amplification. Biosafety level 4.
Typical Adult Therapy	Therapy: Acyclovir 12 mg/kg IV q8h. OR Ganciclovir 5 mg/kg IV q12h. Follow with prolonged Acyclovir 800 mg PO 5X daily. Postexposure prophylaxis: Valacyclovir 1g PO q8h X 14 days. OR Acyclovir 800 mg PO X 5 X 14 days
Typical Pediatric Therapy	Acyclovir or Ganciclovir as for adult.
Clinical Hints	Skin vesicles, lymphadenopathy, myalgia, singultus, major neurological signs Usually onset within one month of contact with monkey Case-fatality rates exceed 80% Permanent neurological residua are common
Synonyms	Cercopithecine herpesvirus 1, Herpes B, Herpesvirus simiae, Macacine herpesvirus 1. ICD9: 078.89 ICD10: B00.4

Herpes simplex encephalitis

Agent	VIRUS - DNA. Herpesviridae, Alphaherpesvirinae, Simplexvirus: Human herpesvirus (usually type I)
Reservoir	Human
Vector	None
Vehicle	Infected secretions, Sexual contact
Incubation Period	Unknown
Diagnostic Tests	Viral culture CSF usually negative. CT brain. Compare CSF/blood antibody levels. Nucleic acid amplification.
Typical Adult Therapy	Acyclovir 10 mg/kg IV Q8h
Typical Pediatric Therapy	Acyclovir 10 mg/kg IV Q8h
Clinical Hints	Rapidly-progressive severe encephalitis Exanthem not evident in most cases Often unilateral, with temporal and parietal lobe predominance Permanent residua and high case-fatality rate in untreated cases
Synonyms	

Herpes simplex infection

Agent	VIRUS - DNA. Herpesviridae, Alphaherpesvirinae, Simplexvirus: Human herpesvirus I and II
Reservoir	Human
Vector	None
Vehicle	Infected secretions, Sexual contact, Breastfeeding, Respiratory or pharyngeal acquisition
Incubation Period	1d - 14d
Diagnostic Tests	Viral culture or microscopy of lesions. Serology. Nucleic acid amplification.
Typical Adult Therapy	Famciclovir 250 mg PO TID X 7d. OR Valacyclovir 1 g PO BID X 7d OR Acyclovir 400 mg PO X 3 per day X 7d Dosage and duration may vary for first vs. recurrent vs. suppressive regimens.
Typical Pediatric Therapy	Acyclovir 10 mg/kg PO QID X 7 d
Clinical Hints	Recurring localized crops of painful vesicles on a red base Regional adenopathy often present May follow a prodrome of neuropathy or hyperesthesia
Synonyms	Herpes gladiatorum, Herpes rugbiorum, Herpes simplex, Scrum pox. ICD9: 054.0,054.1,054.2,054.4,054.5,054.6,054.7,054.8,054.9 ICD10: A60,B00

Herpes simplex infection in Haiti

Seroprevalence surveys

Years	Region	Study Group	%	Notes
2008*	multiple locations	sex workers	22	22% of clients of CSW in Gonaives and St. Marc (HSV-2, 2008 publication) ¹
1992*		women	54-88	88% of HIV-positive women and 54% of HIV-negative women (HSV-2, 1992 publication) ²

* indicates publication year (not necessarily year of survey)

References

1. Sex Transm Dis 2008 Oct ;35(10):849-55.
2. J Infect Dis 1992 Aug ;166(2):418-20.

Herpes zoster

Agent	VIRUS - DNA. Herpesviridae, Alphaherpesvirinae: Varicella-zoster virus
Reservoir	Human
Vector	None
Vehicle	Air, Direct contact
Incubation Period	Unknown
Diagnostic Tests	Viral culture (vesicles). Serology. Nucleic acid amplification.
Typical Adult Therapy	Acyclovir 800 mg PO X 5 daily X 7 to 10d. OR Famciclovir 500 PO TID. OR Valacyclovir 1 g PO TID
Typical Pediatric Therapy	Acyclovir 20 mg/kg PO QID X 7 to 10d
Vaccine	Herpes zoster vaccine
Clinical Hints	Patients usually above age 50 Unilateral dermatomal pain, tenderness and paresthesia Rash appears after 3 to 5 days - macular, erythematous lesions which evolve into vesicles Trunk and chest wall most commonly involved, but other areas possible Recurrence is common
Synonyms	Fuocodi Saint'Antonio, Shingles, Zona, Zoster. ICD9: 053 ICD10: B02

Histoplasmosis

Agent	FUNGUS. Ascomycota, Euascomycetes, Onygenales: <i>Histoplasma capsulatum</i> var. <i>capsulatum</i> A dimorphic fungus
Reservoir	Soil, Caves, Chicken roosts, Bat
Vector	None
Vehicle	Air, Respiratory or pharyngeal acquisition
Incubation Period	10d - 14d (range 5d - 25d)
Diagnostic Tests	Fungal culture. Serologic tests less helpful. Antigen tests currently under study. Nucleic acid amplification.
Typical Adult Therapy	Itraconazole 200 mg daily X 9m For severe or immunocompromised patients: Liposomal Amphotericin B 3 to 5 mg/kg/d X 2w, followed by Itraconazole as above
Typical Pediatric Therapy	Itraconazole 2 mg/kg daily X 9 m. For severe or immunocompromised patients: Liposomal Amphotericin B 3 to 5 mg/kg/d X 2w, followed by Itraconazole as above
Clinical Hints	Fever, cough, myalgia, pulmonary infiltrates and calcifying hilar lymphadenopathy Chronic multisystem infection is often encountered.
Synonyms	Darling's disease, <i>Histoplasma capsulatum</i> , Histoplasmosis, Ohio River Valley Fever, Ohio Valley disease, Reticuloendothelial cytomycosis. ICD9: 115.0 ICD10: B39.0,B39.1,B39.2,B39.3,B39.4

Although Histoplasmosis is not endemic to Haiti, imported, expatriate or other presentations of the disease have been associated with this country.

Histoplasmosis in Haiti

Sporadic case reports of histoplasmosis are encountered. ¹

References

1. Poumon Coeur 1979 ;35(3):151-61.

HIV infection - initial illness

Agent	VIRUS - RNA. Retroviridae, Lentivirinae: Human Immunodeficiency Virus
Reservoir	Human
Vector	None
Vehicle	Blood, Semen, Sexual contact, Transplacental, Breastfeeding
Incubation Period	1w - 6w
Diagnostic Tests	HIV antibody (ELISA, Western blot). HIV or HIV antigen assays. Nucleic acid amplification.
Typical Adult Therapy	Antiretroviral therapy - most experts will initiate treatment even if no symptoms + normal CD4 count.
Typical Pediatric Therapy	Antiretroviral therapy - most experts will initiate treatment even if no symptoms + normal CD4 count.
Clinical Hints	Fever, diarrhea, sore throat and a mononucleosis-like illness Most common among "high risk" patients (illicit drug use, commercial sex work, men who have sex with men, etc).
Synonyms	HIV, HIV infection, HTLV-III infection. ICD9: 042 ICD10: B20,B21,B22,B23,B24

HIV infection - initial illness in Haiti

Data and background information regarding HIV infection are included in the note for **HIV/AIDS**

References

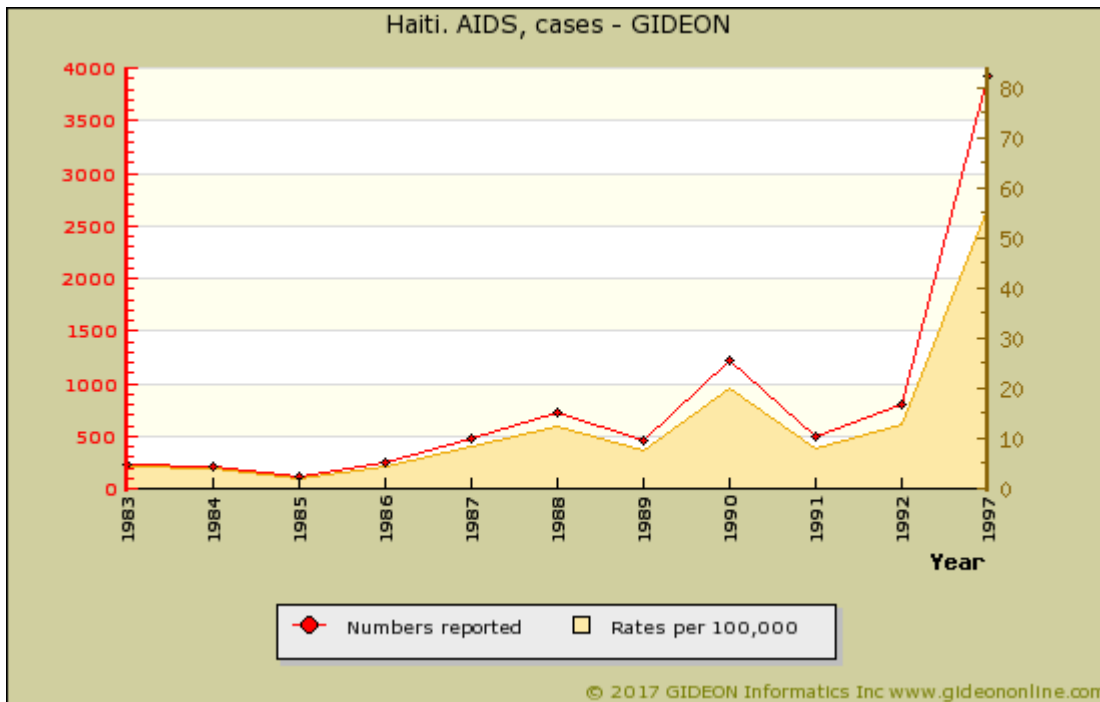
1. [AIDS Action 1990 Apr ;\(10\):7.](#)
2. [J Natl Med Assoc 1999 Mar ;91\(3\):165-70.](#)
3. [Am J Trop Med Hyg 2000 Apr ;62\(4\):496-501.](#)
4. [Sex Transm Dis 2008 Oct ;35\(10\):849-55.](#)
5. [Lancet 1993 Jul 31;342\(8866\):268-72.](#)
6. [J Infect Dis 1992 Aug ;166\(2\):418-20.](#)
7. [Ann Intern Med 1994 Nov 01;121\(9\):654-7.](#)
8. [Am J Trop Med Hyg 2008 Oct ;79\(4\):579-80.](#)
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10. [J Infect Dis 1992 Aug ;166\(2\):418-20.](#)

HIV/AIDS

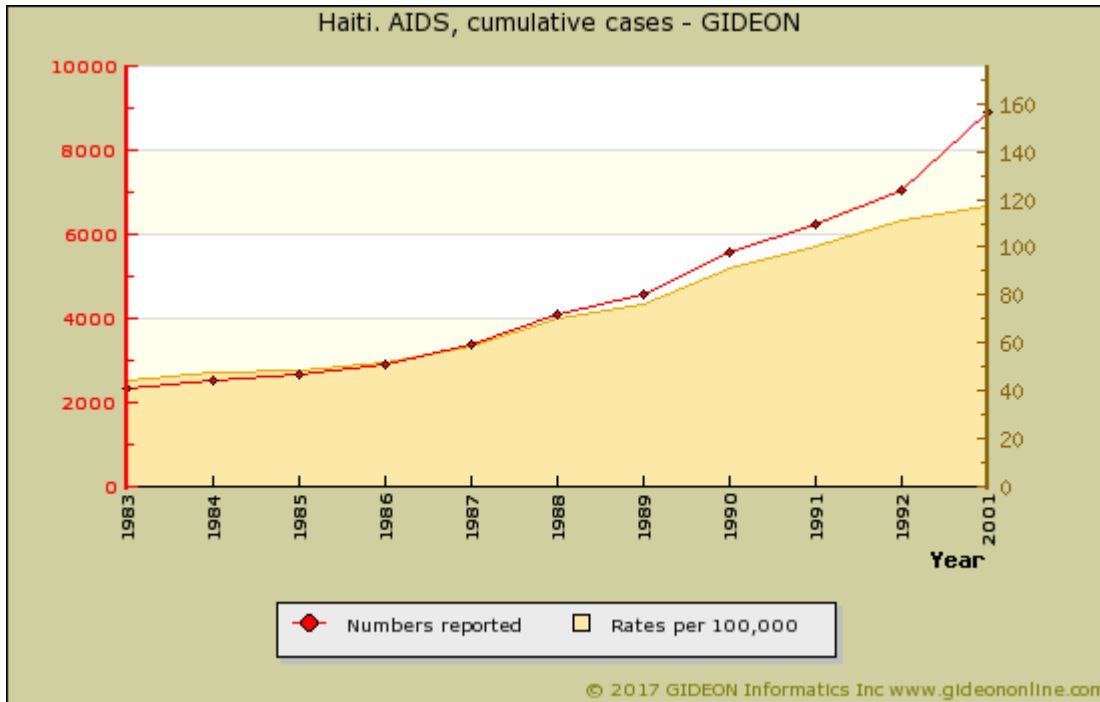
Agent	VIRUS - RNA. Retroviridae, Lentivirinae: Human Immunodeficiency Virus, HIV
Reservoir	Human
Vector	None
Vehicle	Blood, Semen, Sexual, Transplacental, Breastfeeding
Incubation Period	2m - 10y (50% within 10y)
Diagnostic Tests	HIV antibody (ELISA, Western blot). Nucleic acid amplification. Tests for HIV antigen & viral load as indicated.
Typical Adult Therapy	Nucleoside/-nucleotide reverse transcriptase inhibitor + A Non-nucleoside reverse transcriptase inhibitor OR a Protease Inhibitor OR a Strand-transfer integrase inhibitor
Typical Pediatric Therapy	Regimens vary - in general: 2 Non-nucleoside reverse transcriptase inhibitors + Ritonavir / Lopinavir OR Nevirapine OR Atazanavir
Clinical Hints	Most often associated with drug abuse, blood products, men who have sex with men, hemophilia Severe and multiple episodes of infection (herpes simplex, moniliasis, candidiasis, etc) Chronic cough, diarrhea, weight loss, lymphadenopathy, retinitis, encephalitis or Kaposi's sarcoma
Synonyms	AIDS, ARC, Gay cancer, GRID, HIV-1, HIV-2, HIV-AIDS, SIDA, Slim disease. ICD9: 042 ICD10: B20,B21,B22,B23,B24

HIV/AIDS in Haiti

The first patient with AIDS reported in the Caribbean was thought to have been diagnosed in Haiti in 1979. ^{1 2}



Graph: Haiti. AIDS, cases



Graph: Haiti. AIDS, cumulative cases

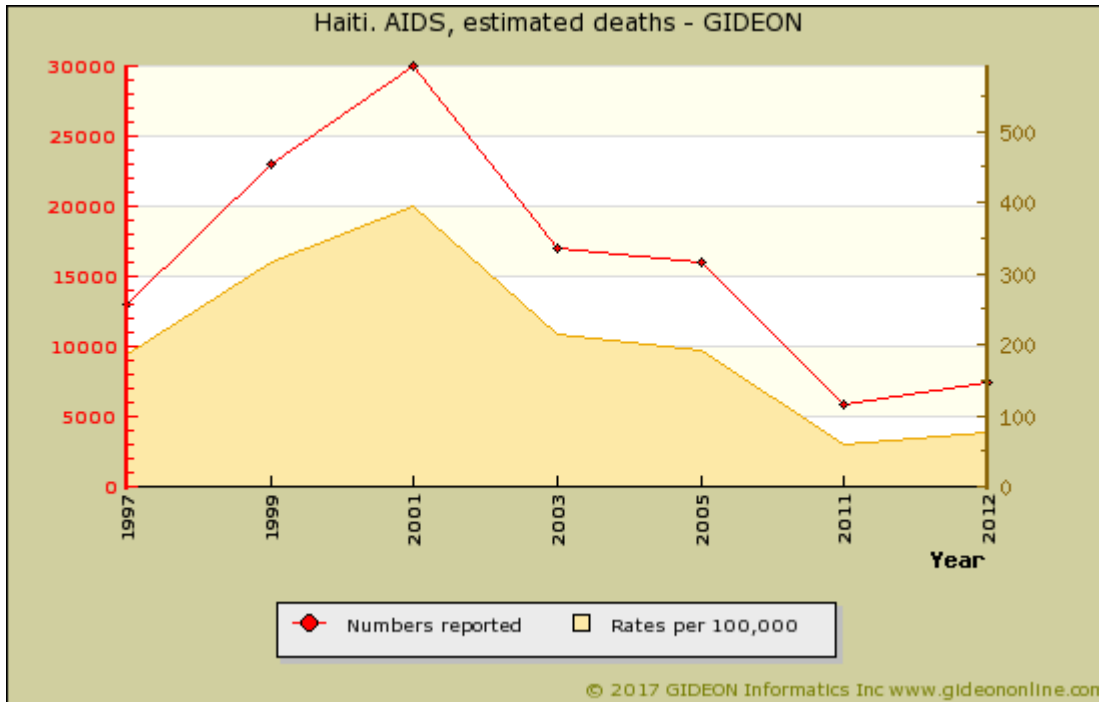
Notes:

1. The true number of AIDS cases to December 1997 is estimated at 91,000 with 85,000 AIDS deaths.

AIDS is the leading cause of death among sexually-active adults, and 60% of urban hospital beds are occupied by HIV-positive patients.

As of 1997: 54% of AIDS patients were males; 40% men who have sex with men and 52.9% unclassified.

In 2007, Haitian-born immigrants constituted 1.2% of AIDS cases in the United States, but only 0.18% of the population. ³



Graph: Haiti. AIDS, estimated deaths

Notes:

1. 74,000 AIDS orphans were estimated to December 1999; 200,000 in 2001.

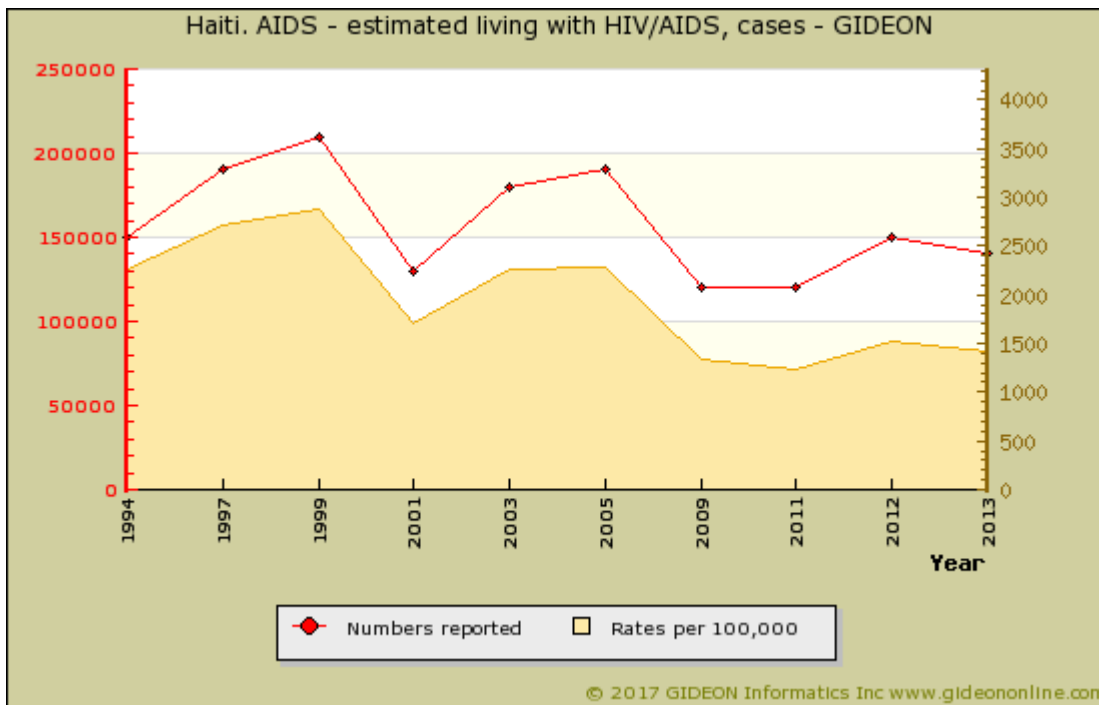
36% of seropositives in 1984 were bisexual males.

Seroprevalence surveys

Years	Region	Study Group	%	Notes
2014 - 2015	Port-Au-Prince	adolescents	2.65	⁴
2000 - 2001		blood donors	2.6	
1988		general population	5.2	rural population ⁵
1993		general population	5-10	5% of the rural population and 10% of urban dwellers ⁶
2003		general population	4.5	
2005 - 2006	Port au Prince	general population	5.5-6.3	⁷
2006		general population	2.2	
1992*		patients	6.1	6.1% of surgical patients ⁸
2013*		patients	1	1% of adult female outpatients with gynecological symptoms ⁹
2016*		patients	7.9	7.9% of patients with cholera and 23% of those without cholera ¹⁰
1992		patients - STD	19.2	19.2% of urban male STD patients
1992*		pregnant women	4	rural pregnant women ¹¹
1993	Prince	pregnant women	8.4-10	8.4% in 1993; 10% in 1996
1996	Artibonite Valley	pregnant women	4.3	¹²
1996		pregnant women	4.8	rural pregnant women
2003		pregnant women	2.8	rural pregnant women
2006 - 2007		pregnant women	4.4	
2012	Southwestern Region	pregnant women	0	rural pregnant women ¹³
1989	Port au Prince	sex workers	42	
2009		sex workers	5.3	

Years	Region	Study Group	%	Notes
2008*	multiple locations	sex workers - client	7.2	7.2% of clients of CSW in Gonaives and St. Marc ¹⁴

* indicates publication year (not necessarily year of survey)



Graph: Haiti. AIDS - estimated living with HIV/AIDS, cases

Notes:

- Figure for 1997 represented 5.17% of all adults; 6.1% in 2001; 5.6% in 2003; 3.8% in 2005

The male/female ratio for seropositives decreased from 3.1/1 in 1985, to 2.3/1 in 1987, 1.6/1 in 1990 and 1.3/1 in 1992.

- As of 2004, an estimated 5,000 infected children are born each year.

Associated infections:

- The incidence of tuberculosis among persons living with HIV is 7.5% per year (1986 to 1989). ¹⁵
50% of tuberculosis patients have AIDS (1991).
- 21% of HIV-positive women are seropositive for syphilis. ¹⁶
- Cryptosporidium* was found in 30% of HIV-positive patients with diarrhea, *Isospora belli* 12%, *Cyclospora* species 11%, *Giardia lamblia* 3% and *Entamoeba histolytica* 1% (1990 to 1993). ¹⁷
Cryptosporidium was found in 60% of HIV-positive patients with diarrhea, *Isospora belli* 15%, *Cyclospora* 34%, *Enterocytozoon bieneusi* 6.9% (2008 publication). ¹⁸
Cryptosporidium was found in 16% of HIV-positive patients with chronic diarrhea, *Giardia* 6%, *Isospora belli* 5%, *Cyclospora* 3%, *Entamoeba histolytica* 0.4% (2003 to 2004). ¹⁹
Isospora belli was found in 15% of AIDS patients, and is responsible for 11% of AIDS-associated diarrhea.
- 88% of HIV-positive women and 54% of HIV-negative women are infected by HSV-2. ²⁰

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Hookworm

Agent	PARASITE - Nematoda. Secernentea: <i>Necator americanus</i> , <i>Ancylostoma duodenale</i> , <i>A. ceylanicum</i> (in Kolkata and the Philippines)
Reservoir	Human, Non-human primates
Vector	None
Vehicle	Soil, Contact
Incubation Period	7d - 2y
Diagnostic Tests	Examination of stool for ova.
Typical Adult Therapy	Albendazole 400 mg X 1 dose. OR Mebendazole 100 mg BID X 3d. OR Pyrantel pamoate 11 mg/kg (max 3g) X 3d
Typical Pediatric Therapy	Albendazole 200 mg PO single dose OR Mebendazole 100 mg BID X 3 d (> age 2).
Clinical Hints	Pruritic papules, usually on feet Later cough and wheezing Abdominal pain and progressive iron-deficiency anemia Eosinophilia is common Dyspnea and peripheral edema in heavy infections
Synonyms	Anchilostoma, Ancylostoma ceylanicum, Ancylostoma duodenale, Ancylostomiasis, Anquilostomiasis, Cyclodontostomum, Eosinophilis enteritis, Hakenwurmer-Befall, Miner's anemia, Necator americanus, Necator gorillae, Necatoriasis, Uncinariasis. ICD9: 126.0,126.1 ICD10: B76.0,B76.1,B76.8

Hookworm in Haiti

Prevalence surveys

Years	Study Group	%	Notes
1999*	children	6.9	6.9% of school children (1999 publication) ¹
2002	children	3.8	3.8% of school children (2002) ²

* indicates publication year (not necessarily year of survey)

References

1. Am J Trop Med Hyg 1999 Mar ;60(3):479-86.
2. Bull Soc Pathol Exot 2005 Jun ;98(2):127-32.

HTLV Infections

Agent	VIRUS - RNA Retroviridae. Deltaretrovirus Human T-lymphotrophic virus I to IV (disease limited to I and II)
Reservoir	Human Non-human primate
Vector	None
Vehicle	Blood, Needles, Semen, Sexualcontact, Transplacental, Breastfeeding, Meat (bush-meat)
Incubation Period	Variable
Diagnostic Tests	Serology Nucleic acid amplification
Typical Adult Therapy	Specific therapy not available. Advanced symptomatic disease has been treated with combinations of Zidovudine and Interferon, Cyclosporine, or anti-neoplastic agents
Typical Pediatric Therapy	As of adult
Clinical Hints	Overt disease is evident in only 1% to 5% of infections Increased susceptibility to pyodermas, sepsis, bronchiectasis Keratoconjunctivitis sicca or uveitis Late development of tropical spastic paraparesis or T-cell leukemia/lymphoma
Synonyms	Adult T-cell leukemia / lymphoma, HTLV-1, HTLV-1/2, HTLV-2, HTLV-4, HTLV-I, HTLV-I/II, HTLV-II, HTLV-IV, Human T-cell lymphotropic virus, Human T-lymphotropic virus, Primate T-lymphotropic virus, PTLV-1, Tropical spastic paraparesis. ICD9: 204.0,208.9 ICD10: C83,C88,G04.1

HTLV Infections in Haiti

Seroprevalence surveys

Years	Study Group	%	Notes
1988	general population	4.3	4.3% of a rural population (1988) ¹
1992*	general population	3.8	3.8% of healthy individuals (1992 publication) ²
1992*	women	2.2-5.3	2.2% to 5.3% of surgical patients, pregnant women and HIV-negative symptomatic patients (1992 publication) ³

* indicates publication year (not necessarily year of survey)

References

1. Bull Soc Pathol Exot Filiales 1989 ;82(3):308-15.
2. Diagn Microbiol Infect Dis 1992 Feb ;15(2):121-4.
3. J Acquir Immune Defic Syndr 1992 Dec ;5(12):1230-6.

Human herpesvirus 6 infection

Agent	VIRUS - DNA. Herpesviridae, Betaherpesvirinae, Roseolovirus: Herpesvirus 6 (Herpesvirus 7 is also implicated)
Reservoir	Human
Vector	None
Vehicle	Droplet, Contact, Respiratory or pharyngeal acquisition
Incubation Period	10d - 15d
Diagnostic Tests	Viral isolation and serologic tests rarely indicated. Nucleic acid amplification has been used
Typical Adult Therapy	Supportive Gancyclovir has been used in unusual and severe cases.
Typical Pediatric Therapy	As for adult
Clinical Hints	High fever followed by sudden defervescence and fleeting rash Most patients are below the age of 2 years Note that only 10% to 20% of Herpesvirus 6 infections are associated with a rash
Synonyms	Dreitagefieber, Exanthem criticum, Exanthem subitum, Herpesvirus 6, HHV-6, Pseudorubella, Roseola, Roseola infantilis, Roseola subitum, Sixth disease, Zahorsky's disease. ICD9: 057.8 ICD10: B08.2

Hymenolepis diminuta infection

Agent	PARASITE - Platyhelminthes, Cestoda. Cyclophyllidea, Hymenolepididae: <i>Hymenolepis diminuta</i>
Reservoir	Rodent, Various insects
Vector	None
Vehicle	Arthropod ingestion
Incubation Period	2w - 4w
Diagnostic Tests	Identification of ova in stool
Typical Adult Therapy	Praziquantel 25 mg/kg as single dose. OR Niclosamide 2g, then 1g/d X 6d
Typical Pediatric Therapy	Praziquantel 25 mg/kg as single dose. OR Niclosamide 1g, then 0.5g/d X 6d (1.5g, then 1g for weight >34kg)
Clinical Hints	Nausea, abdominal pain and diarrhea Eosinophilia may be present Primarily a disease of children, in rodent-infested areas Infestation resolves spontaneously within 2 months
Synonyms	Hymenolepis diminuta, Mathevotaenia, Rat tapeworm. ICD9: 123.6 ICD10: B71.0

Hymenolepis nana infection

Agent	PARASITE - Platyhelminthes, Cestoda. Cyclophyllidea, Hymenolepididae: <i>Hymenolepis (Rodentolepis) nana</i>
Reservoir	Human, Rodent (hamster)
Vector	None
Vehicle	Food, Water, Fecal-oral
Incubation Period	2w - 4w
Diagnostic Tests	Identification of ova in stool
Typical Adult Therapy	Praziquantel 25 mg/kg once. OR Nitazoxanide 500 mg daily for 3 days OR Niclosamide 2g/d X 1, then 1g/d X 6d
Typical Pediatric Therapy	Praziquantel 25 mg/kg once. OR Nitazoxanide 100 mg (age 1 to 3 years) to 200 mg (age 4 to 11 years) BID X 3d OR Niclosamide 1g/d X 1, then 0.5g/d X 6d (1.5g, then 1g for weight >34kg)
Clinical Hints	Nausea, abdominal pain, diarrhea, irritability and weight loss Eosinophilia may be present Condition is maintained by autoinfection (worm reproduces within the intestinal lumen)
Synonyms	Dwarf tapeworm, <i>Hymenolepis nana</i> , <i>Rodentolepis microstoma</i> , <i>Rodentolepis nana</i> , <i>Rodentolepsiasis</i> , <i>Vampirolepis nana</i> . ICD9: 123.6 ICD10: B71.0

Hymenolepis nana infection in Haiti

Prevalence surveys

Years	Study Group	%	Notes
2002	children	2	2% of school children (2002) ¹

References

1. Bull Soc Pathol Exot 2005 Jun ;98(2):127-32.

Infection of wound, puncture, IV line, etc

Agent	BACTERIUM. <i>Staphylococcus aureus</i> , streptococci, facultative or aerobic gram negative bacilli, anaerobes, et al
Reservoir	Human, Soil, Water, Air (spores), Various animals and plants
Vector	None
Vehicle	Trauma, Water, Medications, Bandages, Autoinoculation
Incubation Period	Variable
Diagnostic Tests	Smear and culture of catheter, material from wound.
Typical Adult Therapy	Drainage, remove catheter, debridement and antibiotics appropriate to infecting species
Typical Pediatric Therapy	As for adult
Clinical Hints	Source (ie, venous line, postoperative, marine, animal bite) may suggest species Onset within 24 hrs = group A <i>Streptococcus</i> or <i>Cl. perfringens</i> 2 to 7 days = <i>S. aureus</i> More than 7 days = gram negative bacilli Foul odor = anaerobic bacteria
Synonyms	Intravenous catheter infection, Line infection, Surgical wound infection, Wound infection. ICD9: 686.9,451 ICD10: T79.3,I80.0, Y95

Infectious mononucleosis or EBV infection

Agent	VIRUS - DNA. Herpesviridae. Gammaherpesvirinae, Lymphocryptovirus: Human herpesvirus 4 (Epstein Barr virus)
Reservoir	Human
Vector	None
Vehicle	Saliva, Blood transfusion, Breastfeeding, Respiratory or pharyngeal acquisition
Incubation Period	28d - 42d
Diagnostic Tests	Serology. Nucleic acid amplification.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Exudative pharyngitis Symmetrical cervical lymphadenopathy, splenomegaly and hepatic dysfunction Atypical lymphocytes and positive serology appear after 10 to 14 days Acute illness resolves in 2 to 3 weeks, but malaise and weakness may persist for months
Synonyms	EBV, EBV, Epstein-Barr, Febbre ghiandolare, Filatov's disease, Glandular fever, Infectious mononucleosis, Monocytic angina, Mononucleose, Mononucleosi, Mononucleosis - infectious, Mononukleose, Pfeiffer's disease. ICD9: 075 ICD10: B27.0

Influenza

Agent	VIRUS - RNA. Orthomyxoviridae, Orthomyxovirus: Influenza virus
Reservoir	Human, Ferret, Bird, Pig
Vector	None
Vehicle	Droplet, Respiratory or pharyngeal acquisition
Incubation Period	1d - 3d
Diagnostic Tests	Viral culture (respiratory secretions). Serology. Nucleic acid amplification techniques are available.
Typical Adult Therapy	Respiratory precautions. Influenza A or B: Oseltamivir 75 mg PO BID X 5d OR Zanamavir 10 mg BID X 5 days
Typical Pediatric Therapy	Respiratory precautions. Influenza A or B: Oseltamivir 2 mg/kg (max 75 mg) PO BID X 5d OR Zanamavir (age > 5 years) 10 mg BID X 5 days
Vaccines	Influenza - inactivated vaccine Influenza - live vaccine
Clinical Hints	Myalgia, headache, cough and fever Pharyngitis and conjunctivitis often present Usually encountered in the setting of an outbreak Leucocytosis, chest pain and lobar infiltrate herald bacterial (pneumococcal or staphylococcal) pneumonia
Synonyms	Asian flu, Aviaire influenza, Avian flu, Avian influenza, Bird flu, Epidemic catarrh, Grippe, H10N8, H1N1, H2N2, H3N2, H5N1, H7N9, Hong Kong flu, LPAI, Spanish influenza, Swine flu, Swine influenza. ICD9: 487 ICD10: J09,J10,J11

Influenza in Haiti

GIDEON does not follow routine country reports on human Influenza, since the scope and nature of these data are often diffuse, sporadic or inconsistent. See the "Worldwide" note for material regarding pandemic influenza, influenza vaccine, avian influenza in humans and other relevant subjects.

Avian influenza (H5N2) was reported among poultry in 2008. ¹

Notable outbreaks

Years	Cases	Pathogen	Notes
2009 - 2010	95	H1N1	An outbreak was reported. For comprehensive analyses of the H1N1 pdm09 pandemic see the Worldwide note. ^{2 3}

References

1. ProMED <promedmail.org> archive: 20080620.1913
2. Influenza Other Respir Viruses 2013 Sep ;7(5):772-5.
3. ProMED <promedmail.org> archive: 20091203.4127

Intestinal spirochetosis

Agent	BACTERIUM. <i>Brachyspira pilosicoli</i> and <i>B. aalborgi</i> Anaerobic gram-negative spirochetes
Reservoir	Human, Fowl, Pig
Vector	None
Vehicle	Endogenous
Incubation Period	Unknown
Diagnostic Tests	Spirochetes resemble "brush border" on bowel biopsy; identification of <i>Brachyspira</i> by PCR
Typical Adult Therapy	Metronidazole appears to be effective in some cases.
Typical Pediatric Therapy	As for adult.
Clinical Hints	Chronic diarrhea and abdominal pain in the absence of other identifiable etiology
Synonyms	Human intestinal spirochetosis. ICD9: 009.1 ICD10: A04.8

Intra-abdominal abscess

Agent	BACTERIUM. Mixed anaerobic / aerobic, staphylococci, <i>Neisseria gonorrhoeae</i> , <i>Chlamydia trachomatis</i> , etc
Reservoir	Human
Vector	None
Vehicle	None
Incubation Period	Variable
Diagnostic Tests	Various imaging techniques (CT, Gallium scan, ultrasound, etc).
Typical Adult Therapy	Percutaneous or open drainage + antibiotics directed at known or suspected pathogen(s)
Typical Pediatric Therapy	As for adult
Clinical Hints	Fever, chills and localizing pain (e.g., chest pain in subphrenic abscess) Setting of prior surgery, biliary or colonic disease, appendicitis, vaginal discharge (PID) FUO, subdiaphragmatic gas or limited diaphragmatic motion may be present
Synonyms	Abscess - Abdominal, Acute appendicitis, Appendicitis, Intraabdominal abscess, Intraperitoneal abscess, P.I.D., Pancreatic abscess, Pelvic abscess, Pelvic inflammatory disease, Pylephlebitis, Subhepatic abscess, Subphrenic abscess, Suppurative pancreatitis, Tuboovarian abscess. ICD9: 614,577.0 ICD10: K35,N73,K75.1,K85

Intracranial venous thrombosis

Agent	BACTERIUM. Oral anaerobes, streptococci, et al
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Culture (blood, CSF if indicated). Ophthalmoscopy. Roentgenographic studies of skull & sinuses.
Typical Adult Therapy	Antibiotic(s) directed at known or suspected pathogens
Typical Pediatric Therapy	As for adult
Clinical Hints	Headache, seizures and fever Cranial nerve dysfunction may be present Usually occurs in the setting of ongoing facial, otic or sinus infection
Synonyms	Cavernous sinus thrombosis, Cerebral sinus thrombosis, Cortical vein thrombosis, Internal cerebral vein thrombosis, Straight sinus thrombosis, Superior sinus thrombosis, Transverse sinus thrombosis. ICD9: 325 ICD10: G08

Isosporiasis

Agent	PARASITE - Protozoa. Apicomplexa, Eimeriida: <i>Isospora (Cystoisospora) belli</i>
Reservoir	Human
Vector	None
Vehicle	Food, Liquids, Fecal-oral, Sexual (homosexual) contact
Incubation Period	7d - 10d
Diagnostic Tests	Microscopy of stool or duodenal contents. Advise laboratory when this organism is suspected.
Typical Adult Therapy	Sulfamethoxazole / Trimethoprim 800/160 mg BID X 10 days - Then BID X 3 weeks (may be indefinite in AIDS patient) Increase dosage / duration in immune-suppressed patients Pyrimethamine 50 to 75 mg per day + leucovorin if allergic to sulfa
Typical Pediatric Therapy	Sulfamethoxazole / Trimethoprim 25/5 mg/kg BID X 10 days - Then BID X 3 weeks
Clinical Hints	Myalgia, watery diarrhea, nausea and leukocytosis Eosinophilia may be present Illness is prolonged and severe in AIDS patients
Synonyms	Cystoisospora belli, Isospora belli. ICD9: 007.2 ICD10: A07.3

Isosporiasis in Haiti

Prevalence surveys

Years	Study Group	%	Notes
1986*	patients - HIV/ AIDS	11-15	15% of AIDS patients in this country and 11% of AIDS-related diarrhea (1986 publication) ¹
1990 - 1993	patients - HIV/ AIDS	12	12% of HIV-positive adults with diarrhea (1990 to 1993) ²
2003 - 2004	patients - HIV/ AIDS	5	5% of HIV-positive patients with chronic diarrhea (2003 to 2004) ³

* indicates publication year (not necessarily year of survey)

References

1. *N Engl J Med* 1986 Jul 10;315(2):87-90.
2. *Ann Intern Med* 1994 Nov 01;121(9):654-7.
3. *Am J Trop Med Hyg* 2009 Jun ;80(6):1060-4.

Kawasaki disease

Agent	UNKNOWN
Reservoir	Unknown
Vector	None
Vehicle	Unknown
Incubation Period	Unknown
Diagnostic Tests	Diagnosis is based on clinical criteria only.
Typical Adult Therapy	Intravenous gamma globulin 2.0 g/kg over 10 to 12h X 1 dose. Plus aspirin 100 mg/kg/day X 14d (or until defervescence) - then 5 to 10 mg/kg/day until normal ESR Infliximab 5 mg/kg has been successful in some studies.
Typical Pediatric Therapy	As for adult
Clinical Hints	Disease is most common among children Fever, conjunctivitis, stomatitis and an erythematous rash which desquamates Occasionally complicated by coronary artery occlusion Case-fatality rates of 1% to 4% are reported
Synonyms	Kawasaki's disease, Mucocutaneous lymph node syndrome. ICD9: 446.1 ICD10: M30.3

Kikuchi's disease and Kimura disease

Agent	UNKNOWN
Reservoir	Unknown
Vector	None
Vehicle	Unknown
Incubation Period	Unknown
Diagnostic Tests	Biopsy.
Typical Adult Therapy	Supportive Hydroxychloroquine and corticosteroids have been successful for Kikuchi's disease in some cases.
Typical Pediatric Therapy	As for adult
Clinical Hints	Most patients of Asian origin Kikuchi disease: - Prolonged (1 to 12 months) cervical lymphadenopathy (rubbery, non-matted - may be tender) - Fever (40%), weight loss, 'sweats', leukopenia Kimura disease: - Similar to Kikuchi disease - Salivary gland involvement, glomerulitis, painless subcutaneous masses and eosinophilia suggest Kimura disease - May be misdiagnosed as filariasis
Synonyms	Angiolymploid hyperplasia, Angiolymploid hyperplasia-eosinophilia, Eosinophilic follicular lymphadenitis, Histiocytic necrotizing lymphadenitis, Kikuchi's disease, Kikuchi-Fujimoto disease, Kimura disease. ICD9: 289.3 ICD10: I89.8

Kingella infection

Agent	BACTERIUM. <i>Kingella kingae</i> , et al A facultative gram-negative coccobacillus
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Unknown
Diagnostic Tests	Culture of blood, joint fluid, CSF, etc. Alert laboratory if these organisms are suspected.
Typical Adult Therapy	Penicillin G or Penicillin V usually effective - dosage per severity/site
Typical Pediatric Therapy	As for adult
Clinical Hints	Most infections have been in young children. A relatively rare cause of septic arthritis, endocarditis, meningitis and other infections
Synonyms	

Laryngotracheobronchitis

Agent	VIRUS OR BACTERIUM. Parainfluenza virus, Influenza virus, <i>Mycoplasma</i> , et al
Reservoir	Human
Vector	None
Vehicle	Droplet, Respiratory or pharyngeal acquisition
Incubation Period	3d - 8d
Diagnostic Tests	Viral culture (respiratory secretions). Serology. Nucleic acid amplification.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Most cases are in young children Usually encountered in the setting of bronchiolitis, laryngitis or croup following a minor upper respiratory infection
Synonyms	Bronchitis, Croup, Laringitis, Laryngite, Laryngitis, Laryngotracheitis. ICD9: 464,466 ICD10: J04,J05,J20,J21

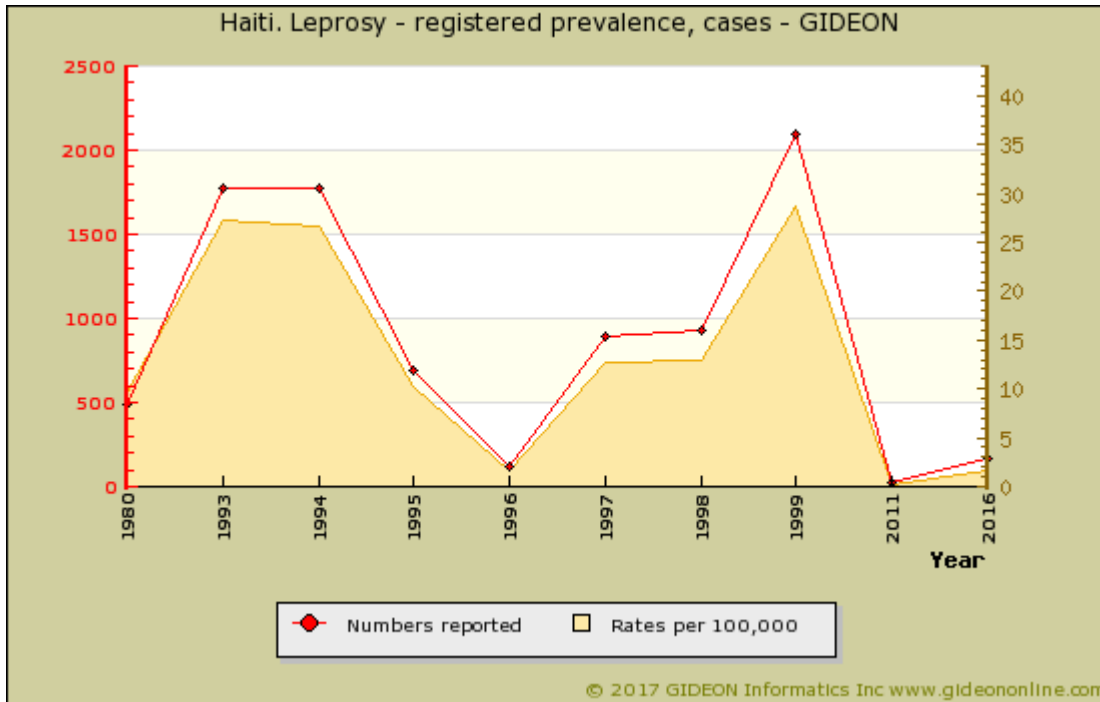
Legionellosis

Agent	BACTERIUM. <i>Legionella pneumophila</i> , et al An aerobic gram-negative bacillus
Reservoir	Water
Vector	None
Vehicle	Water, Aerosols, Droplet, Respiratory or pharyngeal acquisition
Incubation Period	5- 6d (range 2-12d); Pontiac fever = 1-2d
Diagnostic Tests	Serology. Culture. Urine antigen (certain types). Nucleic acid amplification. Alert lab if organism suspected.
Typical Adult Therapy	Fluoroquinolone (Levofloxacin , Trovaflaxacin , Pefloxacin , Sparfloxacin or Moxifloxacin). OR Azithromycin . OR Erythromycin + Rifampin OR Clarithromycin
Typical Pediatric Therapy	Azithromycin . OR Erythromycin + Rifampin OR Clarithromycin
Clinical Hints	Respiratory illness with extrapulmonary manifestations (diarrhea, confusion, renal or hepatic dysfunction, relative bradycardia, etc.) Most cases reported during summer in temperate areas Case-fatality rates of 5% to 25% are reported
Synonyms	Doenca dos legionarios, Legionarsjuka, Legionarssjuka, Legionella, Legionellose, Legionellosi, Legionnaire's disease, Pontiac fever. ICD9: 482.84 ICD10: A48.1,A48.2

Leprosy

Agent	BACTERIUM. <i>Mycobacterium leprae</i> <i>Mycobacterium lepromatosis</i> An acid-fast bacillus
Reservoir	Human, Armadillo, Squirrel
Vector	None
Vehicle	Secretions
Incubation Period	3y - 5y (range 3m - 40y)
Diagnostic Tests	Visualization of organisms in exudate, scrapings or biopsy. Nucleic acid amplification.
Typical Adult Therapy	Multibacillary: One year therapy Dapsone 100 mg + Clofazimine 50 mg daily; and, Rifampin 600 mg + Clofazimine 300 mg once monthly Paucibacillary: Six month therapy Dapsone 100 mg daily; and Rifampin 600 mg once monthly
Typical Pediatric Therapy	Multibacillary: One year therapy Dapsone 1 to 2 mg/kg + Clofazimine 1 mg/kg daily; and, Rifampin 10 mg/kg + Clofazimine 1 mg/kg once monthly Paucibacillary: Six month therapy Dapsone 1 to 2 mg/kg daily; and Rifampin 10 mg/kg once monthly
Clinical Hints	Anesthetic, circinate hypopigmented skin lesions and thickened peripheral nerves (tuberculoid leprosy) Diffuse, destructive papulonodular infection (lepromatous leprosy) Combined/intermediate forms are encountered
Synonyms	Aussatz, Doence de Hansen, Hansen's disease, Lebbra, Lepra, <i>Mycobacterium leprae</i> , <i>Mycobacterium lepromatosis</i> . ICD9: 030 ICD10: A30

Leprosy in Haiti



Graph: Haiti. Leprosy - registered prevalence, cases

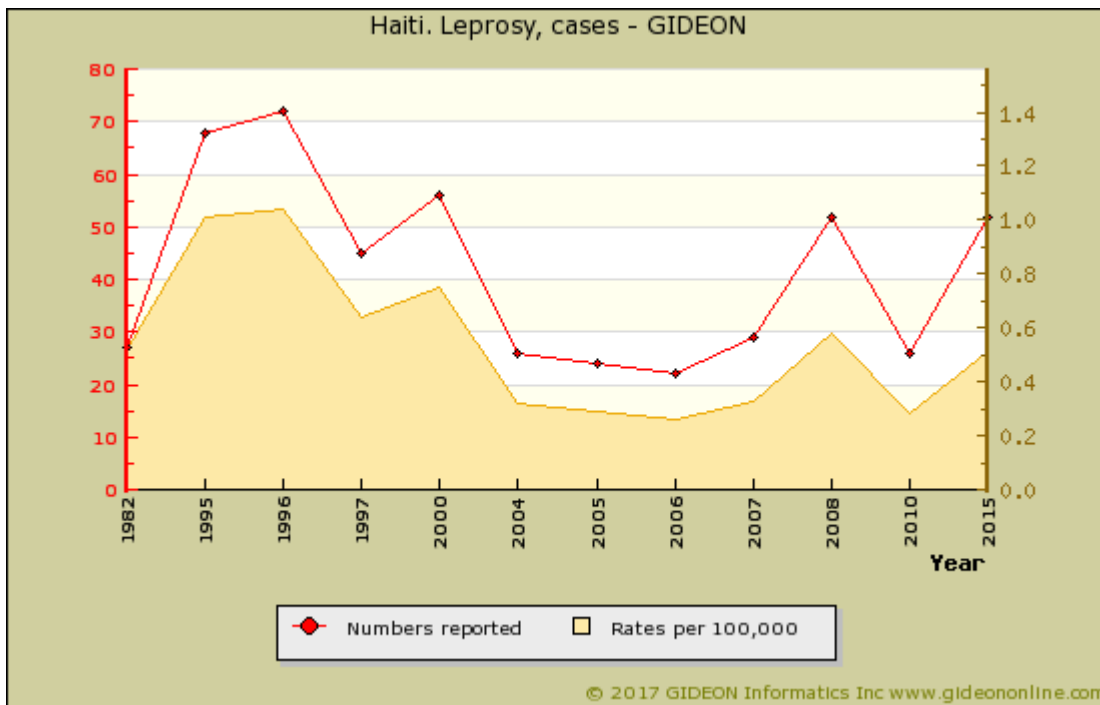
Notes:

1. 1,998 cases were registered during 1977 to 1996 - 80.5% paucibacillary.

2. 2,160 cases were registered during 1977 to 1999. ¹

Individual years:

1980 - True number estimated at 1,452 cases (30 per 100,000).



Graph: Haiti. Leprosy, cases

MDT coverage is 100% (1998).

References

1. [Sante 2002 Apr-Jun;12\(2\):281-2.](#)

Leptospirosis

Agent	BACTERIUM. <i>Leptospira interrogans</i> , et al. An aerobic non-gram staining spirochete
Reservoir	Cattle, Dog, Horse, Deer, Rodent, Fox, Marine mammal, Cat, Marsupial, Frog
Vector	None
Vehicle	Water, Soil, Urine contact, Breastfeeding
Incubation Period	7d - 12d (range 2d - 26d)
Diagnostic Tests	Culture on specialized media. Dark field microscopy of urine, CSF. Serology.
Typical Adult Therapy	Penicillin 1.5 million units Q6h iv OR Doxycycline 100 mg BID X 5 to 7d OR Ceftriaxone 1g IV daily
Typical Pediatric Therapy	Penicillin G 50,000u/kg q6h iv X 5 to 7d Age >= 8y: Doxycycline 2.2 mg/kg BID X 5 to 7d may also be used
Clinical Hints	"Sterile" meningitis, nephritis, hepatitis, myositis and conjunctivitis Often follows recent skin contact with fresh water in rural or rodent-infested areas Case-fatality rates of 5% to 40% are reported
Synonyms	Andaman hemorrhagic fever, Canefield fever, Canicola fever, Field fever, Fish handler's disease, Fort Bragg fever, Japanese autumnal fever, Leptospira, Leptospirose, Leptospirosen, Leptospirosi, Mud fever, Pre-tibial fever, Rat fever, Rice field fever, Swamp fever, Swineherd disease, Weil's disease. ICD9: 100 ICD10: A27

Leptospirosis in Haiti

64 cases were reported in 1995; 32 during January to April 1996.

Listeriosis

Agent	BACTERIUM. <i>Listeria monocytogenes</i> A facultative gram-positive bacillus
Reservoir	Mammal, Human, Bird, Soil, Water
Vector	None
Vehicle	Transplacental, Dairy products (eg, soft cheeses), Infected secretions, Vegetables, Poultry, Water
Incubation Period	3d - 21d (60d post-ingestion)
Diagnostic Tests	Culture of blood or CSF.
Typical Adult Therapy	Ampicillin 2g IV q6h X 2w (higher dosage in meningitis) + Gentamicin . Sulfamethoxazole / Trimethoprim recommended for Penicillin-allergic patients
Typical Pediatric Therapy	Ampicillin 50 mg/kg IV Q6h X 2w (higher dosage in meningitis). Sulfamethoxazole / Trimethoprim recommended for Penicillin-allergic patients
Clinical Hints	Meningitis or sepsis, often in immune-suppressed patients (lymphoma, AIDS, etc) Gastroenteritis - may follow ingestion of "over-the-counter" foods Neonatal septicemia occasionally encountered
Synonyms	Listeria monocytogenes, Listeriose, Listeriosi. ICD9: 027.0 ICD10: A32

Listeriosis in Haiti

Listeriosis, cases: None reported between 1998 and 1999

Liver abscess - bacterial

Agent	BACTERIUM. Various species from portal (Bacteroides, mixed aerobe-anaerobe) or biliary (<i>Escherichia coli</i> , etc) source
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Ultrasonography, CT or radionuclide scan. If amoebic abscess suspected, perform Entamoeba serology
Typical Adult Therapy	Intravenous antibiotic(s) directed at likely or suspected pathogens. Percutaneous or open drainage
Typical Pediatric Therapy	As for adult
Clinical Hints	Tender liver and prolonged fever in a patient with history of diverticulosis, cholecystitis, appendicitis, etc Clinically similar to amoebic abscess, but often multiple.
Synonyms	Ascesso fegato, Bacterial liver abscess, Hepatic abscess - bacterial, Liver abscess. ICD9: 572.0 ICD10: K75.0

Lyme disease

Agent	BACTERIUM. <i>Borrelia</i> spp.: <i>Borrelia burgdorferi</i> ; <i>B. afzelii</i> and <i>B. garinii</i> are also encountered (in Eurasia) A microaerophilic spirochete
Reservoir	Tick, Deer, Rodent, Bird
Vector	Tick (<i>Ixodes</i> , <i>Amblyomma</i>)
Vehicle	None
Incubation Period	7d - 14d (range 2d - 180d)
Diagnostic Tests	Serology. Nucleic acid amplification. Culture of blood and body fluids available in some laboratories.
Typical Adult Therapy	Doxycycline , Ceftriaxone , Amoxicillin or Cefuroxime Dosage, route and duration according to nature and severity of disease
Typical Pediatric Therapy	>= Age 8 years: As for adult < Age 8 years: Ceftriaxone , Cefuroxime or Amoxicillin . Dosage, route and duration according to nature and severity of disease
Vaccine	Lyme disease vaccine
Clinical Hints	Fever, circular erythematous skin lesion, arthralgia and lymphadenopathy Later meningitis or myocarditis, and eventual destructive polyarthritis The patient may recall recent tick bite
Synonyms	Arcodermatitis chronica atrophicans, Baggio-Yoshinari syndrome, Borrelia A 14S, Borrelia afzelii, Borrelia americana, Borrelia bavariensis, Borrelia bissettii, Borrelia burgdorferi, Borrelia carolinensis, Borrelia garinii, Borrelia lonestari, Borrelia lusitaniae, Borrelia mayonii, Borrelia spielmanii, Borrelia valaisiana, Borrelial lymphocytoma, Doença de Lyme, Erythema chronicum migrans, Erythema migrans, Garin-Bujadoux-Bannwarth syndrome, LD imitator syndrome, LD-like syndrome, Lyme borreliose, Lyme borreliosis, Master's disease, Neuroborreliosis, Southern tick-associated rash illness, STARI, TAPOS, Tick-associated poly-organic syndrome. ICD9: 088.81 ICD10: A69.2

Although Lyme disease is not endemic to Haiti, imported, expatriate or other presentations of the disease have been associated with this country.

Lyme disease in Haiti

Seroprevalence surveys

Years	Study Group	Notes
2016*	dogs	0% of owned dogs (2016 publication) ¹

* indicates publication year (not necessarily year of survey)

References

1. [Vet Parasitol 2016 Jul 15;224:7-12.](#)

Lymphocytic choriomeningitis

Agent	VIRUS - RNA. Arenaviridae, Arenavirus: Lymphocytic choriomeningitis virus
Reservoir	House mouse, Guinea pig, Hamster, Monkey
Vector	None
Vehicle	Urine, Saliva, Feces, Food, Dust, Respiratory or pharyngeal acquisition
Incubation Period	8d - 12d (range 6d - 14d)
Diagnostic Tests	Viral culture (blood, throat, CSF). Serology. Nucleic acid amplification. Biosafety level 3.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Headache, myalgia, meningitis and encephalitis Photophobia or pharyngitis may be present Preceding exposure to rodents Infection resolves within 2 weeks, however convalescence may require an additional 2 months.
Synonyms	

Lymphogranuloma venereum

Agent	BACTERIUM. Chlamydiaceae, Chlamydiae , <i>Chlamydia trachomatis</i> , types L1, L2, L3
Reservoir	Human
Vector	None
Vehicle	Sexual contact
Incubation Period	7d - 12d (range 3d - 30d)
Diagnostic Tests	Serology. Culture of pus performed in specialized laboratories.
Typical Adult Therapy	Doxycycline 100 mg PO BID X 3w. OR Erythromycin 500 mg QID X 3w OR Azithromycin 1g po weekly X 3w
Typical Pediatric Therapy	Age < 8 years: Erythromycin 10 mg/kg PO QID X 2 to 4w. Age >= 8 years: Doxycycline 2 mg/kg PO BID X 2 to 4w
Clinical Hints	Genital nodule or vesicle with large, suppurating regional nodes Generalized lymphadenopathy or proctitis may be present Late complications include genital edema, rectal strictures and perianal abscesses
Synonyms	Bubonulus, Durand-Nicolas-Favre disease, Linfogranuloma venereo, Lymphogranuloma inguinale, Lymphopathia venereum, Maladie de Nicolas et Favre, Tropical bubo, Venereal bubo, Venerisk lymphogranulom. ICD9: 099.1 ICD10: A55

Malaria	
Agent	PARASITE - Protozoa. Apicomplexa, Haemosporida: <i>Plasmodium</i> spp.
Reservoir	Human Primate (<i>Plasmodium knowlesi</i>)
Vector	Mosquito (Anopheles)
Vehicle	Blood
Incubation Period	7d -30d
Diagnostic Tests	Examination of blood smear. Serology, antigen & microscopic techniques. Nucleic acid amplification.
Typical Adult Therapy	Resistant falcip: Lumefantrine / Artemether OR Quinine + Doxycycline or Clindamycin OR Atovaquone / Proguanil OR Artesunate IV (severe malaria) If sens., Chloroquine 1g, then 500 mg 6, 24 & 48 hrs. If <i>P. ovale</i> or <i>P. vivax</i> - follow with Primaquine
Typical Pediatric Therapy	Resistant falcip: Lumefantrine / Artemether OR Quinine + Clindamycin OR Atovaquone / Proguanil OR Artesunate (>age 8) IV (severe malaria) If sens., Chloroquine 10 mg/kg, then 5 mg/kg 6, 24, & 48 hrs. If <i>P. ovale</i> or <i>P. vivax</i> - follow with Primaquine
Clinical Hints	Fever, headache, rigors ("shaking chills"), vomiting, myalgia, diaphoresis and hemolytic anemia Fever pattern (every other or every third day) and splenomegaly may be present Clinical disease may relapse after 7 (<i>ovale</i> and <i>vivax</i>) to 40 (<i>malariae</i>) years
Synonyms	Ague, Bilious remittent fever, Chagres fever, Estiautumnal fever, Marsh fever, Marsh fever, Paludism, Paludismo, Plasmodium brasilianum, Plasmodium falciparum, Plasmodium knowlesi, Plasmodium malariae, Plasmodium ovale, Plasmodium vivax. ICD9: 084 ICD10: B50,B51,B52,B53,B54

Chloroquine resistant falciparum malaria endemic to 80 countries. Chloroquine-sensitive malaria endemic to 28 countries.

Malaria in Haiti

Time and Place:

Highest rates are registered during May to November.

Malaria is endemic to 75% of the land area, with most cases in coastal areas, particularly in rice-growing areas ¹ and Artibonite.

- 80% of the population live in endemic areas.
- There is no risk in the port of Labadee (ie, tourist-ship area)

Infesting species:

Plasmodium falciparum accounts for virtually 100% of cases. ²

- Chloroquine-resistant *P. falciparum* is **NOT** reported ^{3 4 5 6}; however late treatment failure ⁷ and strains with in-vitro resistance have been identified by some studies since 2006. ^{8 9 10}
- Two cases of chloroquine-resistant *P. falciparum* malaria were reported among foreign aid workers in 2010, ¹¹
- Indigenous *P. vivax* was last reported in 1983.
- There is evidence for ongoing transmission of *Plasmodium malariae* as recently as 2004. ¹²

Prevalence surveys

Years	Region	Study Group	%	Notes
2006	Artibonite Valley	general populaion	3.1	3.1% of individuals in Artibonite (rainy season, 2006) ¹³

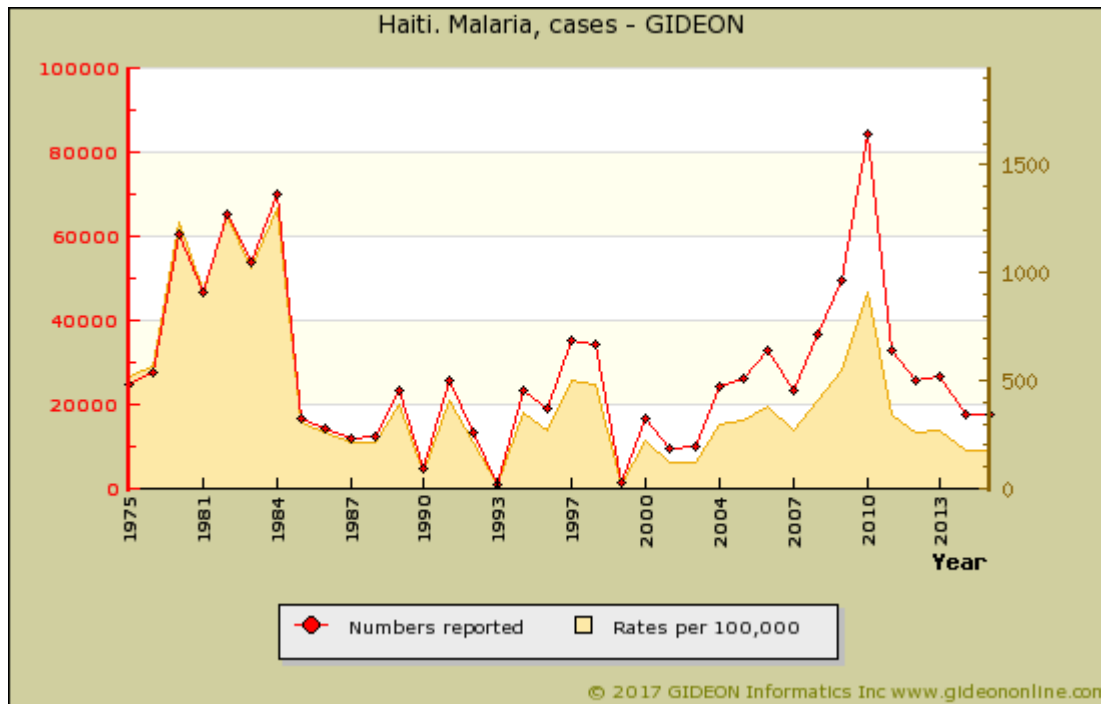
Years	Region	Study Group	%	Notes
2013*	Southeast District	general populaion	9.5	9.5% of individuals in the Southeast District (rainy season, 2013 publication) ¹⁴
2015*		general populaion	19.2	19.2% of individuals (PCR, asymptomatic infection, 2015 publication) ¹⁵
2010 - 2013		general population	3.2	3.2% of persons (gametocyte carriage, five departments, 2010 to 2013) ¹⁶
2010		patients - fever	20.3	20.3% of patients with suspected malaria, following the 2010 earthquake ¹⁷
2012		patients - fever	28	28% of febrile patients, nationwide (2012) ¹⁸
2014*	Grand'Anse	patients - fever	17.4	17.4% of patients with fever, in Corail, Grand'Anse (2014 publication) ¹⁹
2011		specimens	0.4	0.4% of samples in a national surveillance study (PET-PCR, 2011) ²⁰

* indicates publication year (not necessarily year of survey)

Seroprevalence surveys

Years	Region	Study Group	%	Notes
2013	multiple locations	general populaion	30.3	30.3% of individuals in Ouest and Sud-Est Departments (2013) ²¹
2016*	multiple locations	general populaion	7.99	7.99% of individuals in Ouest and Sud-Est Departments (<i>P. vivax</i> , 2016 publication) ²²

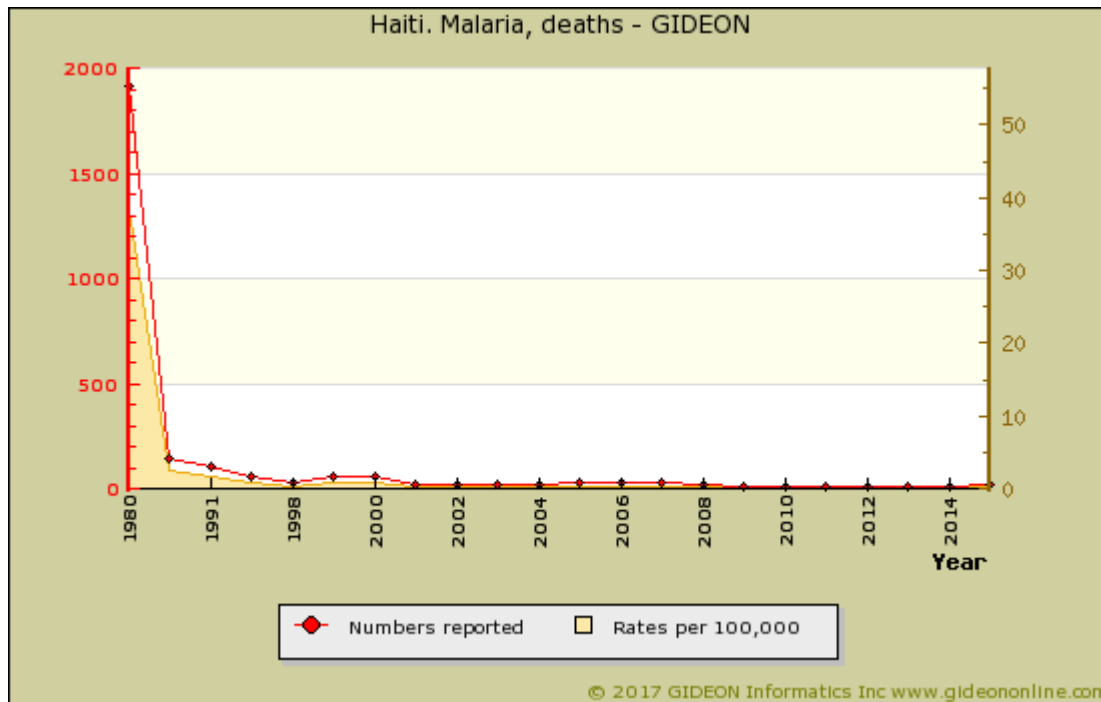
* indicates publication year (not necessarily year of survey)



Graph: Haiti. Malaria, cases

Notes:

- The true incidence of malaria has been estimated at approximately 200,000 cases per year (2010 publication) ²³
- Review of malaria-elimination programs in Haiti (2015 publication) ²⁴
 Individual years:
 2010 - 11 cases (including 8 expatriates) were identified following an earthquake. ²⁵
 2011 - Malaria was identified in 3 members of a Haitian football team visiting Jamaica. ²⁶ Haiti accounted for 171 (85.5%) of the 200 malaria cases acquired by Americans in Central America and the Caribbean.



Graph: Haiti. Malaria, deaths

Notes:

1. Figures for 1980, 1990, 2000 and 2010 are based on estimates of true mortality.²⁷ Since these estimates are significantly higher than official Health Ministry reports for other years during this period, resultant graphs will suggest unusual fluctuation in trends.

Eight cases were diagnosed among UN peace-keeping forces during 1995.

Vectors:

- The sole vector is *Anopheles albimanus*^{28 29 30}; however, *An. pseudopunctipennis* has recently been introduced into the south.³¹

References

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5. J Pharm Policy Pract 2013 ;6:10.
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Malignant otitis externa

Agent	BACTERIUM. <i>Pseudomonas aeruginosa</i> : aerobic gram-negative bacillus (virtually all cases)
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Culture of otic exudate and biopsy material. Careful roentgenographic and neurological examinations.
Typical Adult Therapy	Early debridement Ciprofloxacin 400 mg iv Q8h Alternatives: Imipenem , Meropenem , Ceftazidime , Cefepime Early debridement
Typical Pediatric Therapy	Early debridement Imipenem : Age 0 to 7 days: 25 mg/kg IV Q12h Age 8 to 28 days: 25 mg/kg IV Q8h Age >28 days: 15 to 25 mg/kg IV Q6h (maximum 2 g/day) Alternatives: Meropenem , Ceftazidime , Cefepime
Clinical Hints	Otic pain, swelling and discharge Infection of bony and cartilaginous ear canal Over 80% of patients are diabetics over age 50 Cranial nerve (usually VII) signs in 50% Case-fatality rate > 55%.
Synonyms	

Mansonelliasis - M. ozzardi

Agent	PARASITE - Nematoda. Secernentea: <i>Mansonella ozzardi</i>
Reservoir	Human
Vector	Black fly (<i>Simulium</i> spp.), Midge (<i>Culicoides</i> spp.)
Vehicle	None
Incubation Period	5m - 18m (range 1m - 2y)
Diagnostic Tests	Identification of microfilariae in skin snips or blood. Nucleic acid amplification.
Typical Adult Therapy	Ivermectin 150 ug/kg PO as single dose
Typical Pediatric Therapy	As for adult
Clinical Hints	Arthralgia, pruritus, urticaria, rash Bronchospasm, headache, lymphadenopathy and eosinophilia
Synonyms	Filaria ozzardi, Mansonella ozzardi, Microfilaria bolivarensis, Ozzardiasis, Tetrapetalonema ozzardi. ICD9: 125.5 ICD10: B74.4

Mansonelliasis - M. ozzardi in Haiti

Time and Place:

Mansonelliasis was reported in Haiti as early as 1923. ¹

- Ozzardiasis is prevalent in the rural coastal areas of northern and southern Haiti. ^{2 3}
- Large foci are present in the north, between Port-de-Paix and Cap Haitien; and in the Miragoane area, within the Nippes district. This focus includes the area stretching from Petit-Trou-de-Nippes to Roseaux in the Grande Anse district, including the Baraderes peninsula and the Cayemites Islands
- In the south, a focus is located in the Saint-Louis-du-Sud area, near Les Cayes and on the island Ile a Vache.
- Limited foci are located in the western district, north of Port-au-Prince, in Leogane and around Gonave Island.

489 cases of mansonelliasis were reported in 1974.

Prevalence surveys

Years	Region	Study Group	%	Notes
1980*	Bayeux	general population	16	16% of individuals in Bayeux (1980 publication) ⁴
1983	Nippes District	general population	18.8	18.8% of individuals in Bon Dos village, Nippes District (1983) ⁵
2014*	Corail	general population	16.5	16.5% of individuals in Corail (2014 publication) ⁶
1981 - 1982		immigrants	1.3	1.3% of Haitian immigrants in the United States (1981 to 1982) ⁷

* indicates publication year (not necessarily year of survey)

The principal vector is *Culicoides furens*. ⁸

- *C. barbosai* ⁹ and *Leptoconops bequaerti* ¹⁰ have also been implicated

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2. Bull Soc Pathol Exot 1999 Dec ;92(5):355-9.
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10. Am J Trop Med Hyg 1983 Sep ;32(5):1013-5.

Mayaro

Agent	VIRUS - RNA. Togaviridae, Alphavirus: Mayaro virus
Reservoir	Non-human primate, Bird
Vector	Mosquito (<i>Haemagogus janthinomys</i>)
Vehicle	None
Incubation Period	3d - 12d
Diagnostic Tests	Viral culture (blood). Serology. Nucleic acid amplification. Biosafety level 3.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Consider in a forest worker with headache, myalgia, arthralgia, lymphadenopathy and a maculopapular rash Although acute illness resolves within 5 days, joint pains may persist for months
Synonyms	Una. ICD9: 066.3 ICD10: A92.8

Mayaro in Haiti

2014 to 2015 - Mayaro virus infection was confirmed in a rural child with acute febrile illness. [1](#) [2](#)

References

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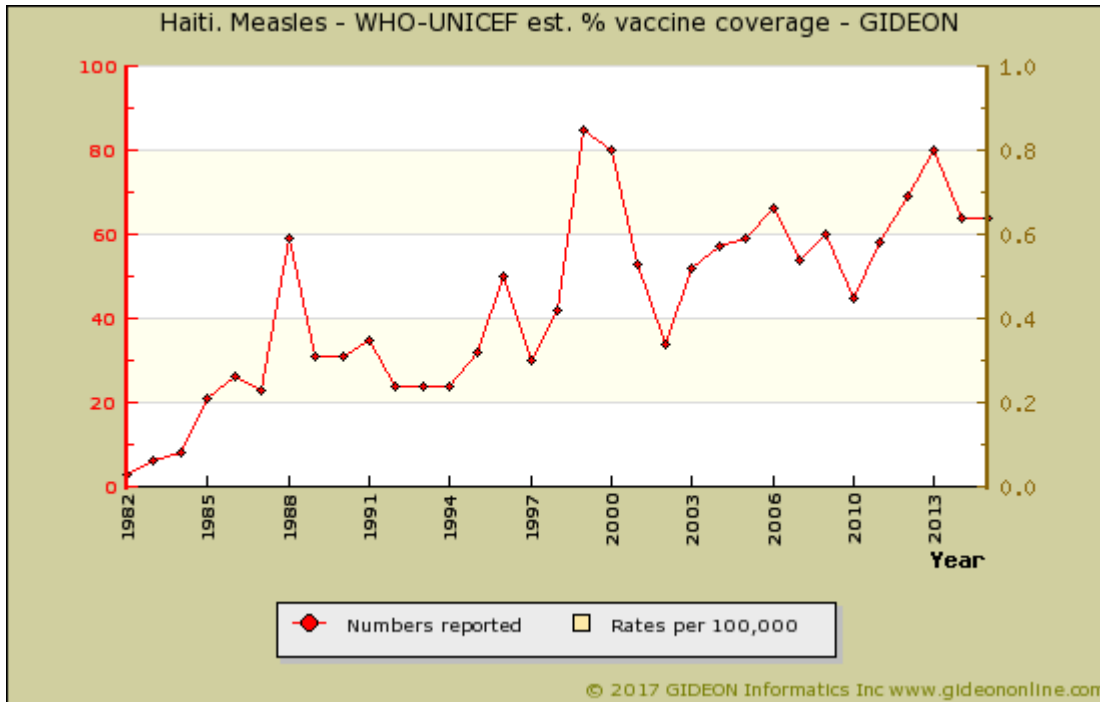
Measles

Agent	VIRUS - RNA. Mononegavirales Paramyxoviridae, Paramyxovirinae, Morbillivirus: Measles virus
Reservoir	Human
Vector	None
Vehicle	Droplet, Respiratory or pharyngeal acquisition
Incubation Period	8d - 14d
Diagnostic Tests	Viral culture (difficult and rarely indicated). Serology. Nucleic acid amplification.
Typical Adult Therapy	Respiratory isolation; supportive. Ribavirin 20 to 35 mg/kg/day X 7 days has been used for severe adult infection
Typical Pediatric Therapy	As for adult
Vaccines	Measles vaccine Measles-Mumps-Rubella vaccine Measles-Rubella vaccine
Clinical Hints	Coryza, fever, headache, conjunctivitis, photophobia and a maculopapular rash after 3 to 5 days Koplik's spots (bluish-grey lesions on buccal mucosa, opposite second molars) often precede rash Encephalitis or viral pneumonia occasionally encountered
Synonyms	Masern, Massling, Mazelen, Meslinger, Morbilli, Morbillo, Rubeola, Rugeole, Sarampion, Sarampo. ICD9: 055 ICD10: B05

Measles in Haiti

Vaccine Schedule:

- BCG - birth
- DTwPHibHepB - 6,10,14 weeks
- HepB - >= 12 years
- IPV - 6 weeks
- MMR - 12, 24 months
- MR - 9 months
- OPV - 6,10,14 weeks
- Rotavirus - 6,10 weeks
- Td - 1st contact; +4 weeks; +6 months; +1, +1 years pregnant women



Graph: Haiti. Measles - WHO-UNICEF est. % vaccine coverage

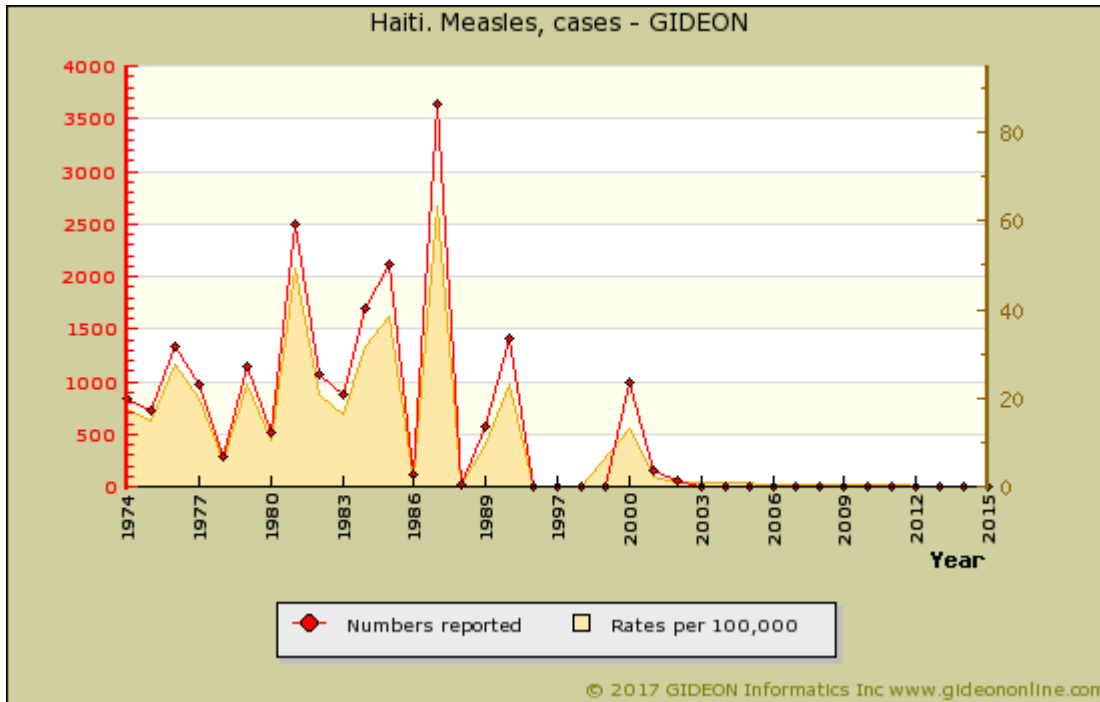
Notes:

Individual years:

2009 - A survey found that 46.9% of children ages 12 to 23 months had been immunized. ¹

Seroprevalence surveys

Years	Study Group	%	Notes
2012	pregnant women	94.1	94.1% of pregnant women (2012) ²



Graph: Haiti. Measles, cases

Notes:

1. Average disease rates of 24 per 100,000 were reported during 1989 to 1994.
2. No confirmed cases were reported during 2007 to 2010. ³
 Individual years:
 2001 - 37% of all cases for the Americas

Notable outbreaks

Years	Cases	Notes
2000	992	Most cases reported in Artibonite and metropolitan Port-au-Prince. The outbreak may have started with imported cases from the Dominican Republic; and included 57% of all measles cases reported in the Americas region. ⁴

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2. [Vaccine 2013 Dec 17;32\(1\):69-73.](#)
3. [J Infect Dis 2011 Sep 01;204 Suppl 2:S698-705.](#)
4. [J Infect Dis 2003 May 15;187 Suppl 1:S127-32.](#)

Melioidosis	
Agent	BACTERIUM. <i>Burkholderia pseudomallei</i> An aerobic gram-negative bacillus
Reservoir	Soil, Water, Sheep, Goat, Horse, Pig, Rodent, Monkey, Marsupial
Vector	None
Vehicle	Water (contact, ingestion, aerosol), Breastfeeding, Sexual contact, Respiratory or pharyngeal acquisition
Incubation Period	3d - 21d (range 2d - 1y)
Diagnostic Tests	Culture of blood, sputum, tissue. Serology. Nucleic acid amplification.
Typical Adult Therapy	Ceftazidime or Meropenem or Imipenem IV X at least 14 days May be combined with Sulfamethoxazole / Trimethoprim PO Follow with Sulfamethoxazole / Trimethoprim +/- Doxycycline X at least 3 months.
Typical Pediatric Therapy	Ceftazidime or Meropenem or Imipenem IV X at least 14 days May be combined with Sulfamethoxazole / Trimethoprim PO Follow with Sulfamethoxazole / Trimethoprim X at least 3 months.
Clinical Hints	May present as: - lymphangitis with septicemia - fever, cough and chest pain - diarrhea Bone, central nervous system, liver and parotid infection are occasionally encountered Case-fatality rate 10% to over 50% (septicemic form)
Synonyms	<i>Burkholderia pseudomallei</i> , <i>Burkholderia thailandensis</i> , Melioidose, Nightcliff Gardeners' Disease, Whitmore disease. ICD9: 025 ICD10: A24.1,A24.2,A24.3,A24.4

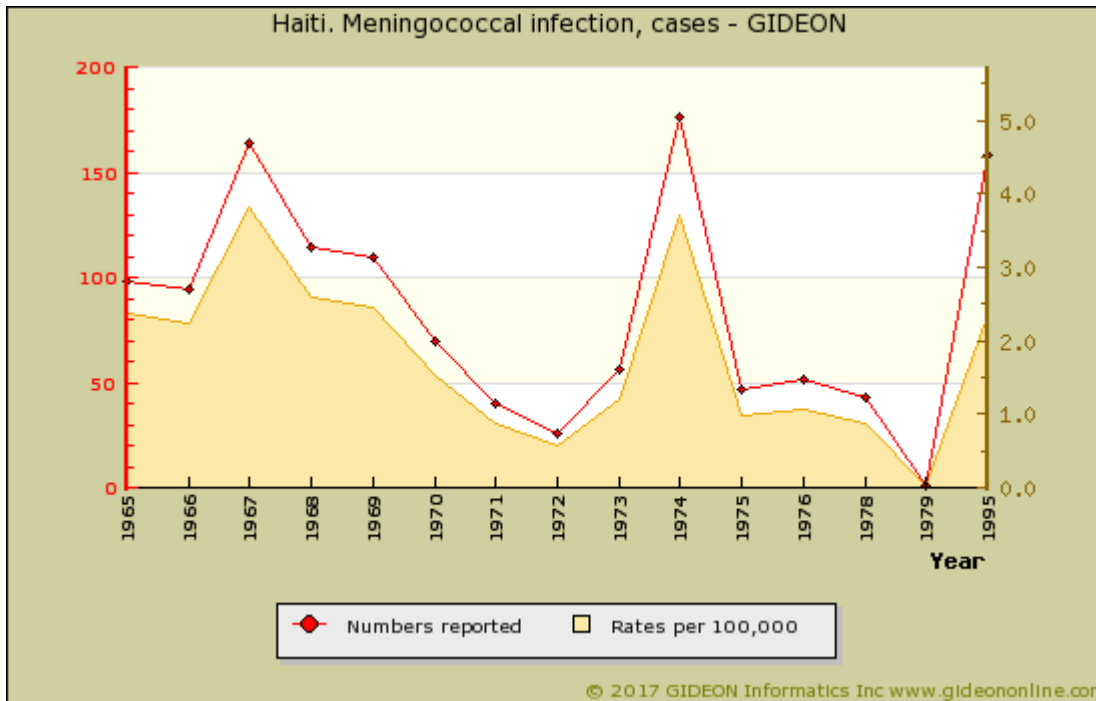
Meningitis - aseptic (viral)

Agent	VIRUS - RNA. Picornaviridae, enteroviruses
Reservoir	Human
Vector	None
Vehicle	Fecal-oral, Droplet
Incubation Period	Variable
Diagnostic Tests	Viral isolation (stool, CSF, throat). Serology.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Lymphocytic meningitis, with normal CSF glucose level Often follows sore throat Typically occurs during late summer and early autumn in temperate regions
Synonyms	Aseptic meningitis, Encephalitis - viral, Meningite virale, Meningitis, viral, Meningo-encefalite virale, Viral encephalitis, Viral meningitis. ICD9: 047,048,049,320.2 ICD10: A87,G03.0

Meningitis - bacterial

Agent	BACTERIUM. <i>Neisseria meningitidis</i> , <i>Streptococcus pneumoniae</i> , <i>Haemophilus influenzae</i> , et al
Reservoir	Human
Vector	None
Vehicle	Air, Secretions
Incubation Period	Variable
Diagnostic Tests	CSF microscopy and culture. Blood culture. Note: Antigen detection is non-specific and rarely useful.
Typical Adult Therapy	Bactericidal agent(s) appropriate to known or suspected pathogen + dexamethasone
Typical Pediatric Therapy	As for adult
Vaccines	H. influenzae (HbOC-DTP or -DTaP) vaccine Haemophilus influenzae (HbOC) vaccine Haemophilus influenzae (PRP-D) vaccine Haemophilus influenzae (PRP-OMP) vaccine Haemophilus influenzae (PRP-T) vaccine Meningococcal vaccine Hepatitis B + Haemoph. influenzae vaccine
Clinical Hints	Headache, stiff neck, obtundation, high fever and leukocytosis Macular or petechial rash and preceding sore throat suggest meningococcal infection
Synonyms	Bacterial meningitis, Enfermedad Meningococica, Haemophilus influenzae, Haemophilus influenzaes, HIB meningitis, HIBs, Infections a meningocoque, Meningite batterica, Meningite meningococcica, Meningococcal, Meningokokken Erkr., Meningokokkose. ICD9: 036.0,320 ICD10: A39,G00,G01,G02

Meningitis - bacterial in Haiti



Graph: Haiti. Meningococcal infection, cases

Notes:

Individual years:

1995 - Included 55 fatal cases. Highest rates in Artibonite. ¹

1999 - 56 cases of meningococcal meningitis were reported.

Vaccine Schedule:

BCG - birth

DTwPHibHepB - 6,10,14 weeks

HepB - >= 12 years

IPV - 6 weeks

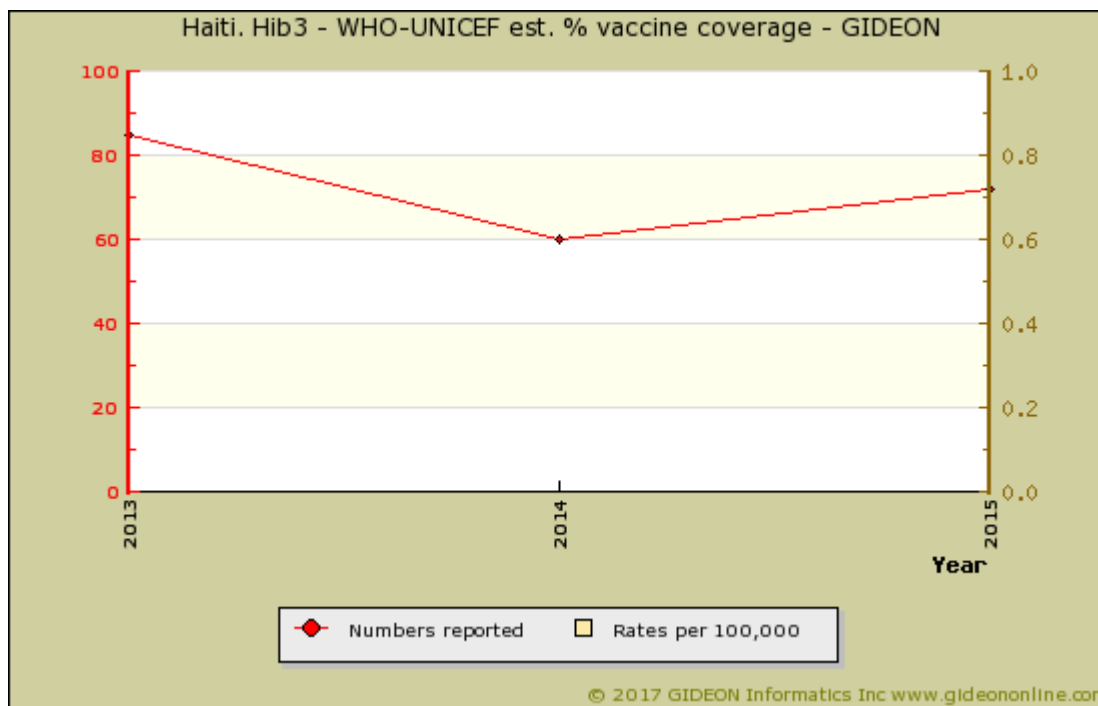
MMR - 12, 24 months

MR - 9 months

OPV - 6,10,14 weeks

Rotavirus - 6,10 weeks

Td - 1st contact; +4 weeks; +6 months; +1, +1 years pregnant women



Graph: Haiti. Hib3 - WHO-UNICEF est. % vaccine coverage

Notable outbreaks

Years	Region	Cases	Deaths	Pathogen	Notes
1994	Northeast Department	100	9	meningococcus group C	Outbreak in Quanamithe, Northeast Department

References

1. ProMED <promedmail.org> archive: 19950619.0425

Microsporidiosis

Agent	FUNGUS. Microsporidia: <i>Enterocytozoon</i> , <i>Encephalitozoon (Septata)</i> , <i>Vittaforma (Nosema)</i> , <i>Pleistophora</i> , <i>Trachipleistophora</i> , et al.
Reservoir	Rabbit, Rodent, Carnivore, Non-human primate, Fish, Dog, Bird
Vector	None
Vehicle	Fecal-oral
Incubation Period	Unknown
Diagnostic Tests	Microscopy of duodenal aspirates. Inform laboratory if this organism is suspected. Nucleic acid amplification.
Typical Adult Therapy	Albendazole 400 mg PO BID X 3 weeks. Add Fumagillin for ocular <i>S. intestinalis</i> may respond to Albendazole and Fumagillin Nitazoxanide has been used for <i>E. bienewisi</i> .
Typical Pediatric Therapy	Albendazole 200 mg PO BID X 3 weeks. Add Fumagillin for ocular <i>S. intestinalis</i> may respond to Albendazole and Fumagillin Nitazoxanide has been used for <i>E. bienewisi</i> .
Clinical Hints	Self-limited diarrhea, traveler's diarrhea or asymptomatic carriage Immunocompromised patients present with chronic diarrhea, cholangitis, cholecystitis, sinusitis or pneumonia Ocular microsporidiosis is associated with keratoconjunctivitis Hepatitis or myositis are reported in some cases
Synonyms	Anncaliia, Brachiola, Encephalitozoon, Enterocytozoon, Microsporidium, Nosema, Pleistophora, Trachipleistophora, Tubulinosema, Vittaforma. ICD9: 136.8 ICD10: A07.8

Microsporidiosis in Haiti

Prevalence surveys

Years	Study Group	%	Notes
2008*	patients - HIV/AIDS	6.9	6.9% of HIV-positive patients with chronic diarrhea (<i>Enterocytozoon bienewisi</i> , 2008 publication) 1

* indicates publication year (not necessarily year of survey)

References

1. [Am J Trop Med Hyg 2008 Oct ;79\(4\):579-80.](#)

Molluscum contagiosum

Agent	VIRUS - DNA. Poxviridae. Molluscipoxvirus. Molluscum contagiosum virus
Reservoir	Human
Vector	None
Vehicle	Contact, Sexual contact, Vertical transmission
Incubation Period	2-7 w (range 14 to 180d)
Diagnostic Tests	Histology of excised material. Nucleic acid amplification
Typical Adult Therapy	Topical therapy; excision
Typical Pediatric Therapy	As for adult
Clinical Hints	One or more raised, flesh-colored skin lesions with depressed center Lesions persist for 6 to 12 weeks Disseminated and indolent forms encountered, particularly in immune-suppressed patients
Synonyms	Water warts. ICD9: 078.0 ICD10: B08.1

Mumps

Agent	VIRUS - RNA. Mononegavirales Paramyxoviridae, Paramyxovirinae, Rubulavirus: Mumps virus
Reservoir	Human
Vector	None
Vehicle	Aerosol, Respiratory or pharyngeal acquisition
Incubation Period	14d - 24d (range 12d - 24d)
Diagnostic Tests	Viral culture (saliva, urine, CSF) indicated only in complicated cases. Serology. Nucleic acid amplification.
Typical Adult Therapy	Respiratory isolation; supportive
Typical Pediatric Therapy	As for adult
Vaccines	Measles-Mumps-Rubella vaccine Mumps vaccine Rubella - Mumps vaccine
Clinical Hints	Fever and parotitis Orchitis (20% of post-pubertal males), meningitis (clinically apparent in 1% to 10%), oophoritis, or encephalitis (0.1%) Most cases resolve within 1 to 2 weeks
Synonyms	Bof, Epidemic parotitis, Fiebre urliana, Infectious parotitis, Kusma, Oreillons, Paperas, Parotidite epidemica, Parotiditis, Parotite epidemica, Passjuka. ICD9: 072 ICD10: B26

Mumps in Haiti

Vaccine Schedule:

- BCG - birth
- DTwPHibHepB - 6,10,14 weeks
- HepB - >= 12 years
- IPV - 6 weeks
- MMR - 12, 24 months
- MR - 9 months
- OPV - 6,10,14 weeks
- Rotavirus - 6,10 weeks
- Td - 1st contact; +4 weeks; +6 months; +1, +1 years pregnant women

594 cases of mumps were reported in 2005.

Myalgic encephalomyelitis

Agent	UNKNOWN
Reservoir	Unknown
Vector	None
Vehicle	Unknown
Incubation Period	Unknown
Diagnostic Tests	Clinical diagnosis; ie, discount other diseases.
Typical Adult Therapy	Supportive; ? immune modulators (experimental)
Typical Pediatric Therapy	As for adult
Clinical Hints	Unexplained depression, fatigue, cognitive disorders and sleep disturbance Recurrent bouts of pharyngitis and adenopathy Rheumatological symptoms and fever persist more than six months
Synonyms	Chronic fatigue syndrome, Systemic exercise intolerance disease. ICD9: 780.71 ICD10: G93.3

Mycetoma	
Agent	BACTERIUM OR FUNGUS. <i>Nocardia</i> spp, <i>Madurella mycetomatis</i> , <i>Actinomadura pelletieri</i> , <i>Streptomyces somaliensis</i> , et al
Reservoir	Soil, Vegetation
Vector	None
Vehicle	Contact, Wound, Soil
Incubation Period	2w - 2y
Diagnostic Tests	Bacterial and fungal culture of material from lesion.
Typical Adult Therapy	Antimicrobial or antifungal agent as determined by culture. Excision as indicated
Typical Pediatric Therapy	As for adult
Clinical Hints	Painless, chronic, draining, fistulous subcutaneous nodule - usually involving lower extremity Osteolytic lesions may be noted on x-ray Usually no fever Most patients are males age 20 to 40 (ie, occupational exposure).
Synonyms	Coelomycetes, Curvularia lunata, Cyphellophora, Diaporthe, Emarella, Fusarium subglutinans, Gloniopsis, Lasiodiplodia, Leptosphaeria tompkinsii, Madura foot, Madura-Fuss, Madurella, Medicopsis, Mycetom, Paraconiothyrium, Peyronellaea, Pleurostomophora, White grain eumycetoma. ICD9: 039.4,117.4 ICD10: B47

Mycobacteriosis - M. marinum

Agent	BACTERIUM. Actinomycetes, <i>Mycobacterium marinum</i> An aerobic acid-fast bacillus
Reservoir	Fresh and salt water (swimming pools, aquaria), Fish (ornamental, salmon, sturgeon, bass)
Vector	None
Vehicle	Water (per areas of minor skin trauma), Contact
Incubation Period	5d - 270d (median 21d)
Diagnostic Tests	Mycobacterial culture from lesion. Alert laboratory when this organism is suspected.
Typical Adult Therapy	Clarithromycin 500 mg BID X 3m Or Rifampicin 600 mg/day + Ethambutol 20 mg/kg/day X 6w. OR Minocycline 100 mg /day X 3m
Typical Pediatric Therapy	Sulfamethoxazole/trimethoprim 5 mg-25 mg/kg BID X 6w. Alternative Minocycline (Age >= 8)
Clinical Hints	Violaceous papule, ulcer, plaque, psoriaform lesion Onset weeks after exposure to swimming pool, aquarium, other water source Commonly involves the elbow, knee, hand or foot
Synonyms	Aquarium granuloma, Fish fanciers' finger syndrome, Fish tank granuloma, Mariner's TB, Mycobacterium balnei, Mycobacterium marinum, Mycobacterium scrofulaceum, Spam, Swimming pool granuloma. ICD9: 031.1 ICD10: A31.1

Mycobacteriosis - M. scrofulaceum

Agent	BACTERIUM. Actinomycetes, <i>Mycobacterium scrofulaceum</i> An aerobic acid-fast bacillus
Reservoir	Water (lakes, rivers), Soil, Raw milk, Plant material
Vector	None
Vehicle	Water, Soil, Areas of minor trauma, Contact
Incubation Period	Unknown
Diagnostic Tests	Culture of tissue or aspirates.
Typical Adult Therapy	Excision. Drugs (<i>Isoniazid</i> - <i>Rifampin</i> - <i>streptomycin</i> - <i>Cycloserine</i>) are rarely indicated
Typical Pediatric Therapy	As for adult
Clinical Hints	Painless lymphadenopathy, most commonly unilateral and submandibular In contrast, true tuberculosis involves the lower neck and produces a strongly positive tuberculin reaction and/or suggestive chest X ray The condition is most common during early childhood.
Synonyms	

Mycobacteriosis - miscellaneous nontuberculous

Agent	BACTERIUM. Actinomycetes, <i>Mycobacterium</i> spp. - over 130 species as of 2016 An aerobic acid-fast bacillus
Reservoir	Water, Soil, Fish, Mammal, Bird
Vector	None
Vehicle	Air, Water, Milk (<i>M. bovis</i>), Contact, Ingestion, Trauma, Respiratory or pharyngeal acquisition
Incubation Period	Variable
Diagnostic Tests	Microscopy & culture of tissue, secretions, blood. Nucleic acid amplification. Inform laboratory if suspected
Typical Adult Therapy	Drug, route and duration appropriate to clinical setting and species (in Therapy module, scroll through upper left box)
Typical Pediatric Therapy	As for adult
Clinical Hints	Pneumonia, or chronic granulomatous infection of various tissues Systemic disease may complicate immune suppression <i>Mycobacterium avium-intracellulare</i> infection characterized by aggressive course and resistance to most antimycobacterial drugs
Synonyms	<i>Mycobacterium abscessus</i> , <i>Mycobacterium avium</i> , <i>Mycobacterium avium-intracellulare</i> , <i>Mycobacterium chimaera</i> , <i>Mycobacterium franklinii</i> , <i>Mycobacterium immunogenum</i> , <i>Mycobacterium jacussii</i> , <i>Mycobacterium kyorinense</i> , <i>Mycobacterium xenopi</i> , <i>Segniliparus</i> . ICD9: 031.9,031.2 ICD10: A31.0,A31.1,A31.8

Mycoplasma (miscellaneous) infection

Agent	BACTERIUM. Mycoplasmatales <i>Mycoplasma genitalium</i> , <i>Mycoplasma hominis</i> , <i>Mycoplasma fermentans</i> , <i>Mycoplasma penetrans</i> , <i>Mycoplasma parvum</i> , <i>Ureaplasma urealyticum</i>
Reservoir	Human
Vector	None
Vehicle	Secretion, Sexual contact, Respiratory or pharyngeal acquisition
Incubation Period	Unknown
Diagnostic Tests	Culture (urine, pharynx). Serology. Nucleic acid amplification.
Typical Adult Therapy	Doxycycline 100 mg PO BID X 7 days OR Azithromycin 500 mg PO, then 250 mg PO X 4 days OR Levofloxacin 500 mg daily X 7 days OR Ofloxacin 300 mg BID X 7 days
Typical Pediatric Therapy	Erythromycin 10 mg/kg PO QID X 2w
Clinical Hints	Urethritis, vaginitis, neonatal pneumonia Rarely stillbirth, prematurity or infertility
Synonyms	Acholeplasma laidlawii, Epirythrozoön, Hemotrophic Mycoplasma, Mycoplasma amphoriforme, Mycoplasma buccale, Mycoplasma faucium, Mycoplasma felis, Mycoplasma fermentans, Mycoplasma genitalium, Mycoplasma hominis, Mycoplasma lipophilum, Mycoplasma orale, Mycoplasma penetrans, Mycoplasma pirum, Mycoplasma primum, Mycoplasma salivarium, Mycoplasma spermatophilum, T Mycoplasmas, T strains, Ureaplasma parvum, Ureaplasma urealyticum. ICD9: 041.81 ICD10: A49.3

Mycoplasma (miscellaneous) infection in Haiti

Prevalence surveys

Years	Region	Study Group	%	Notes
2014*		men	6.3	<i>Mycoplasma genitalium</i> was found in 6.3% of rural men with urethritis (2014 publication) ¹
2012 - 2012	Southwest Region	women	6.7-10.1	<i>Mycoplasma genitalium</i> was found in 6.7% to 10.1% of rural women attending clinics (southwestern Haiti, 2012) ²

* indicates publication year (not necessarily year of survey)

References

1. Int J STD AIDS 2015 Sep ;26(10):710-5.
2. Am J Trop Med Hyg 2014 Nov ;91(5):881-6.

Mycoplasma pneumoniae infection

Agent	BACTERIUM. Mollicutes. <i>Mycoplasma pneumoniae</i>
Reservoir	Human
Vector	None
Vehicle	Droplet, Respiratory or pharyngeal acquisition
Incubation Period	6d - 23d
Diagnostic Tests	Culture (sputum, throat). Serology. Nucleic acid amplification.
Typical Adult Therapy	Erythromycin 500 mg PO BID X 2w. OR Azithromycin 1 g, followed by 500 mg PO daily X 5 days. OR Doxycycline 100 mg PO BID OR Levofloxacin 750 mg PO X 5d
Typical Pediatric Therapy	Azithromycin 10 mg/kg PO day 1; 5 mg/kg PO days 2 to 5 OR Erythromycin 10 mg/kg PO QID X 2w
Clinical Hints	Coryza, "hacking" cough and subsegmental pulmonary infiltrate Bullous otitis media is often present Most patients below age 30 Cold agglutinins are neither sensitive nor specific for infection, and appear only during second week.
Synonyms	Mycoplasma pneumoniae, Primary atypical pneumonia. ICD9: 041.81,483.0 ICD10: B96.0

Myiasis

Agent	PARASITE - Insecta (Diptera) larvae
Reservoir	Mammal
Vector	Arthropod
Vehicle	Fly eggs deposited by biting arthropod
Incubation Period	1w - 3m
Diagnostic Tests	Identification of extracted maggot.
Typical Adult Therapy	Removal of maggot
Typical Pediatric Therapy	As for adult
Clinical Hints	Fly larvae seen in various body regions Pruritic or painful draining nodule Fever and eosinophilia may be present Instances of brain, eye, middle ear and other deep infestations are described.
Synonyms	Calliphora, Chrysomya, Chrysomyia, Cochliomyia, Cordylobia, Cuterebrosis, Dermatobia, Eristalis, Furuncular myiasis, Gasterophilus, Hypoderma, Lucilia, Lund's fly, Maggot infestation, Megaselia, Musca, Muscina, Oedemagena, Oestrus larvae, Ophthalmomyiasis, Parasarcophaga, Psychoda, Rectal myiasis, Sarcophaga, Screw worm, Telmatoscopus, Urinary myiasis, Vaginal myiasis, Wohlfarthia. ICD9: 134.0 ICD10: B87

Necrotizing skin/soft tissue infx.

Agent	BACTERIUM. <i>Streptococcus pyogenes, Clostridium perfringens</i> , mixed anaerobic and/or gram-negative bacilli
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Clinical features. Smear and culture (including anaerobic culture) of exudate.
Typical Adult Therapy	Debridement and parenteral antibiotics directed by smear and culture results. Hyperbaric oxygen in more severe infections
Typical Pediatric Therapy	As for adult
Clinical Hints	At least 7 distinct syndromes are described Local pain and swelling, skin discoloration or edema Gas formation, foul odor and variable degrees of systemic toxicity.
Synonyms	Anaerobic cellulitis, Chancrum oris, Clostridial cellulitis, Clostridium novyi, Fasciitis, Fournier's gangrene, Gangrenous cellulitis, Gangrenous stomatitis, Invasive group A strep. Infections, Meleney's synergistic gangrene, Necrotizing fasciitis, Noma, Streptococcal fasciitis, Synergistic necrotizing cellulitis. ICD9: 686.8,528.1 ICD10: M72.6,A69.0

Neutropenic typhlitis

Agent	BACTERIUM. <i>Clostridium septicum</i> (occasionally <i>Clostridium tertium</i> , <i>Clostridium sporogenes</i> , <i>Clostridium sordellii</i> or <i>Clostridium tertium</i>)
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Unknown
Diagnostic Tests	Typical findings in the setting of neutropenia. Ultrasonography may be helpful.
Typical Adult Therapy	Broad spectrum antimicrobial coverage, which should include clostridia and <i>Pseudomonas aeruginosa</i> ; ie Piperacillin / Tazobactam (or Imipenem or Meropenem) OR Cefepime + Metronidazole Role of surgery is controversial
Typical Pediatric Therapy	As for adult
Clinical Hints	Fever, abdominal pain, diarrhea (occasionally bloody) and right lower quadrant signs in a neutropenic (leukemic, etc) patient; Infection may spread hematogenously to the extremities Case-fatality rate is 50% to 75%.
Synonyms	Neutropenic enterocolitis. ICD9: 540.0 ICD10: A04.8

Nocardiosis

Agent	BACTERIUM. Actinomycetes, <i>Nocardia</i> spp. An aerobic gram positive bacillus (acid-fast using special technique)
Reservoir	Soil
Vector	None
Vehicle	Air, Dust, Wound, Contact, Respiratory or pharyngeal acquisition
Incubation Period	Days to weeks
Diagnostic Tests	Culture and gram stain of exudates, sputa, tissue specimens. Advise laboratory when <i>Nocardia</i> suspected.
Typical Adult Therapy	Lymphadenitis or skin / soft tissue: Sulfamethoxazole / Trimethoprim OR Minocycline Pneumonia: Sulfamethoxazole / Trimethoprim + Imipenem ; OR Imipenem + Amikacin Brain abscess: Sulfamethoxazole / Trimethoprim + Imipenem ; OR Linezolid + Meropenem
Typical Pediatric Therapy	As for adult
Clinical Hints	Pneumonia, lung abscess, brain abscess, or other chronic suppurative infection Often occurs in the setting of immune suppression.
Synonyms	<i>Nocardia</i> , Nocardiose. ICD9: 039 ICD10: A43

Onchocerciasis - zoonotic

Agent	PARASITE - Nematoda. Secernentea: <i>Onchocerca lupi</i> , et. al.
Reservoir	Cattle, Horse, Deer, Boar, Dog, Wolf
Vector	Black fly (<i>Simulium</i> spp.)
Vehicle	None
Incubation Period	Unknown
Diagnostic Tests	Ideentification of excised worm
Typical Adult Therapy	Excision
Typical Pediatric Therapy	As of adult
Clinical Hints	Subcutaneous or subconjunctival nodule, or eye-worm; may be history of animal contact
Synonyms	Dipetalonema arbuta, Dipetalonema sprenti, Onchocerca cervicalis, Onchocerca dewittei, Onchocerca guttarosa, Onchocerca jakutensis, Onchocerca lupi, Onchocerca reticulata, Pelecitus. ICD9: 123.8 ICD10: B71.1.

Orbital and eye infection

Agent	BACTERIUM OR FUNGUS. <i>Streptococcus pyogenes</i> , oral anaerobes, <i>Aspergillus</i> spp., facultative gram-negative bacilli, et al
Reservoir	Endogenous, Introduced flora (trauma, surgery)
Vector	None
Vehicle	Trauma, Surgery, Contiguous (sinusitis), Hematogenous
Incubation Period	Variable
Diagnostic Tests	Imaging techniques (CT or MRI). Culture of aspirates or surgical material.
Typical Adult Therapy	Local and systemic antimicrobial agents appropriate for species and severity
Typical Pediatric Therapy	As for adult
Clinical Hints	Proptosis, chemosis, extraocular palsy, or hypopyon Associated with sinusitis, bacteremia, eye trauma or surgery Infection may involve the eye (endophthalmitis); periosteum (periorbital infection); orbit (orbital cellulitis); or multiple structures (panophthalmitis).
Synonyms	Bacterial keratitis, Ceratite, Cheratite, Endophthalmitis, Eye infection, Keratite, Keratitis, Orbital infection, Panophthalmitis, Queratitis. ICD9: 360.0 ICD10: H05.0

Orf

Agent	VIRUS - DNA. Poxviridae, Parapoxvirus: Orf virus
Reservoir	Sheep, Goat, Reindeer, Musk ox
Vector	None
Vehicle	Contact, Secretions, Fomite, Cat-scratch
Incubation Period	3d - 6d (range 2d - 7d)
Diagnostic Tests	Viral culture (skin lesion or exudate). Serology. Nucleic acid amplification. Biosafety level 3.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Skin pustule or ulcer following contact with sheep or goats Most lesions are limited to finger or hand Heals without scarring within 6 weeks
Synonyms	Contagious ecthyma, Contagious pustular dermatitis, Ecthyma contagiosum, Ovine pustular dermatitis, Scabby mouth. ICD9: 078.89 ICD10: B08.0

Ornithosis

Agent	BACTERIUM. Chlamydiaceae, Chlamydiae , <i>Chlamydophila (Chlamydia) psittaci</i>
Reservoir	Parakeet, Parrot, Pigeon, Turkey, Duck, Cat, Sheep, Goat, Cattle, Dog
Vector	None
Vehicle	Bird droppings, Dust, Air, Aerosol from cat, Respiratory or pharyngeal acquisition
Incubation Period	7d - 14d (range 4d - 28d)
Diagnostic Tests	Serology. Culture (available in special laboratories) rarely indicated.
Typical Adult Therapy	Doxycycline 100 mg PO BID X 10d. Alternatives: Azithromycin 1 g, then 0.5 g daily X 4 days. Clarithromycin 0.5 g BID Erythromycin 500 mg PO QID X 10d. Levofloxacin 750 mg PO X 7 days
Typical Pediatric Therapy	Azithromycin 10 mg/kg PO day 1; 5 mg/kg PO days 2 to 5 OR Erythromycin 10 mg/kg QID X 10d Alternative (Age >=8 years): Doxycycline 100 mg PO BID X 10d.
Clinical Hints	Headache, myalgia and pneumonia, often with relative bradycardia Hepatomegaly or splenomegaly common Onset 1 to 4 weeks following contact with pigeons, psittacine birds or domestic fowl Case-fatality rate without treatment is 20%.
Synonyms	<i>Chlamydophila abortus</i> , <i>Chlamydophila psittaci</i> , Ornithose, Papegojsjuka, Parrot fever, Psitacosis, Psittacosis, Psittakose. ICD9: 073 ICD10: A70

Osteomyelitis

Agent	BACTERIUM OR FUNGUS. <i>Staphylococcus aureus</i> , facultative gram-negative bacilli, <i>Candida albicans</i> , etc
Reservoir	Endogenous
Vector	None
Vehicle	Trauma, Surgery, Hematogenous
Incubation Period	Variable
Diagnostic Tests	Radiography, including bone scan. Culture of biopsy material.
Typical Adult Therapy	Systemic antimicrobial agent(s) appropriate to known or suspected pathogen. Surgery as indicated
Typical Pediatric Therapy	As for adult
Clinical Hints	Limb pain or gait disturbance, often associated with obscure fever May be preceded by infection of skin, soft tissues or joint; or result from bacteremia X-ray changes are not apparent for at least 10 days in acute infection
Synonyms	Osteomyelitis, Osteomyelitis, Osteomyelitis, Paravertebral abscess. ICD9: 015,730.9 ICD10: M86

Otitis media

Agent	BACTERIUM OR VIRUS. <i>Haemophilus influenzae</i> & <i>Streptococcus pneumoniae</i> in most acute cases; RSV, Parainfluenza, et al
Reservoir	Human
Vector	None
Vehicle	None
Incubation Period	Variable
Diagnostic Tests	Clinical findings. Culture of middle ear fluid if available.
Typical Adult Therapy	If evidence of bacterial infection (severe otalgia >48 hours / fever >39 C): Amoxicillin / Clavulanate 1000/62.5 mg BID X 3 days Alternatives: Cefdinir , Cefpodoxime proxtil, Cefprozil, fluoroquinolone
Typical Pediatric Therapy	If evidence of bacterial infection (severe otalgia >48 hours / fever >39 C): Amoxicillin / Clavulanate 45/3.2 mg/kg BID X 3 days
Vaccine	Pneumococcal conjugate vaccine
Clinical Hints	Acute bacterial otitis media often represents the final stage in a complex of anatomic, allergic or viral disorders of the upper airways Recurrent or resistant infections may require surgical intervention.
Synonyms	Otitis media aguda. ICD9: 382.0 ICD10: H65,H66

Parainfluenza virus infection

Agent	VIRUS - RNA. Paramyxoviridae: Respirovirus - Human Parainfluenza virus 1 and 3. Rubulavirus - Human Parainfluenza virus 2 and 4.
Reservoir	Human
Vector	None
Vehicle	Droplet, Respiratory or pharyngeal acquisition
Incubation Period	3d - 8d
Diagnostic Tests	Viral culture (respiratory secretions). Serology. Nucleic acid amplification.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Upper respiratory infection - often croup or laryngitis Most common during infancy Older children develop a "cold-like" illness Complicated by pneumonia in 7% to 17% of cases
Synonyms	Parainfluenza, Sendai. ICD9: 078.89,480.2 ICD10: J12.2

Parvovirus B19 infection

Agent	VIRUS - DNA. Parvoviridae, Parvovirinae: Erythrovirus B19
Reservoir	Human
Vector	None
Vehicle	Droplet, Breastfeeding, Respiratory or pharyngeal acquisition
Incubation Period	4d - 14d (range 3d - 21d)
Diagnostic Tests	Serology. Nucleic acid amplification (testing should be reserved for the rare instance of complicated infection).
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Erythema infectiosum (erythema of cheeks; lacelike or morbilliform rash on extremities) Febrile polyarthralgia Bone marrow aplasia/hypoplasia may be present
Synonyms	Duke's disease, Erythema infantum febrile, Erythema infectiosum, Erythema simplex marginatum, Erythrovirus B19, Parvovirus B19, Fifth disease, Fourth disease, Funfte Krankheit, Parascarlatina, Parvovirus 4, Parvovirus B19, Sticker's disease. ICD9: 057.0 ICD10: B08.3

Pediculosis

Agent	PARASITE - Insecta. Anoplura: <i>Pediculus humanus</i> , <i>Phthirus pubis</i> .
Reservoir	Human
Vector	Louse
Vehicle	Contact
Incubation Period	7d
Diagnostic Tests	Identification of adults and "nits."
Typical Adult Therapy	Permethrin 1%; or malathion 0.5%; or lindane OR Ivermectin 200 mcg/kg PO
Typical Pediatric Therapy	Permethrin 1%; or malathion 0.5%; or lindane OR Ivermectin 200 mcg/kg PO (> 15 kg body weight)
Clinical Hints	Pruritus in the setting of poor personal hygiene Adult insects or nits may be visible The body louse (<i>Pediculus humanus</i> var. <i>corporis</i> ; rarely not the head louse) transmits such diseases as epidemic typhus, trench fever and relapsing fever
Synonyms	Crab louse, Lousebefall, Pediculose, Pediculus capitis, Pediculus corporis, Pedikulose, Phthirus pubis, Pidocci. ICD9: 132 ICD10: B85

Pentastomiasis - Linguatula

Agent	PARASITE - Pentastomid worm. <i>Linguatula serrata</i>
Reservoir	Herbivore
Vector	None
Vehicle	Meat (liver or lymph nodes of sheep/goat)
Incubation Period	Unknown
Diagnostic Tests	Identification of larvae in nasal discharge.
Typical Adult Therapy	No specific therapy available
Typical Pediatric Therapy	As for adult
Clinical Hints	Pharyngeal or otic itching Cough, rhinitis or nasopharyngitis which follows ingestion of undercooked liver.
Synonyms	Linguatula, Marrara syndrome. ICD9: 128.8 ICD10: B83.8

Pericarditis - bacterial

Agent	BACTERIUM. <i>Streptococcus pneumoniae</i> , <i>Staphylococcus aureus</i> , et al
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Ultrasonography and cardiac imaging techniques. Culture of pericardial fluid (include mycobacterial culture).
Typical Adult Therapy	Antimicrobial agent(s) appropriate to known or anticipated pathogen. Drainage as indicated
Typical Pediatric Therapy	As for adult
Clinical Hints	Fever, chest pain and dyspnea Patients are acutely ill and have overt signs such as venous distention Enlarged cardiac "shadow"; concurrent pneumonia or upper respiratory infection may be present The case-fatality rate is 20%.
Synonyms	Bacterial pericarditis, Pericardite. ICD9: 074.23,074.2,115.03,420 ICD10: I30

Perinephric abscess

Agent	BACTERIUM OR FUNGUS. <i>Escherichia coli</i> , other facultative gram negative bacilli, <i>Candida albicans</i> , et al
Reservoir	Human
Vector	None
Vehicle	None
Incubation Period	Variable
Diagnostic Tests	Urine and blood culture. Renal imaging (CT, etc).
Typical Adult Therapy	Antimicrobial agent(s) appropriate to known or anticipated pathogen. Surgery as indicated
Typical Pediatric Therapy	As for adult
Clinical Hints	Unexplained fever, leukocytosis and flank pain Patients are typically over age 50, and often diabetic Consider in the patient with nonresponsive "pyelonephritis" or a renal mass
Synonyms	

Perirectal abscess

Agent	BACTERIUM. Various (often mixed anaerobic and aerobic flora)
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Culture of drainage material.
Typical Adult Therapy	Surgical drainage and antibiotics effective against fecal flora
Typical Pediatric Therapy	As for adult
Clinical Hints	Anal or perianal pain with fever and a tender mass Granulocytopenic patients commonly develop small, soft and less overt abscesses - often due to <i>Pseudomonas aeruginosa</i> .
Synonyms	

Peritonitis - bacterial

Agent	BACTERIUM. Various (often mixed anaerobic and aerobic flora)
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Culture of blood and peritoneal fluid. Peritoneal fluid cell count may also be useful.
Typical Adult Therapy	Antimicrobial agent(s) appropriate to known or anticipated pathogens. Surgery as indicated
Typical Pediatric Therapy	As for adult
Clinical Hints	Abdominal pain and tenderness Vomiting, absent bowel sounds, guarding and rebound Diarrhea may be present in children Underlying visceral infection or perforation, trauma, hepatic cirrhosis (spontaneous peritonitis) etc.
Synonyms	Acute peritonitis, Bacterial peritonitis, Peritonite. ICD9: 567 ICD10: K65

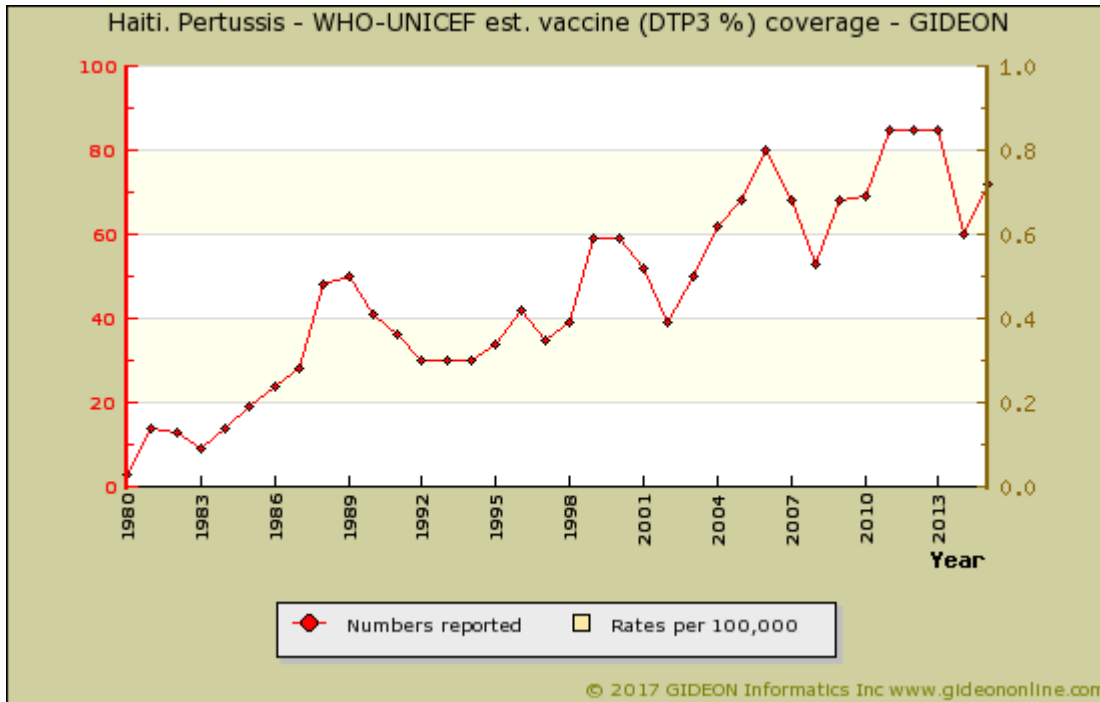
Pertussis

Agent	BACTERIUM. <i>Bordetella pertussis</i> An aerobic gram-negative coccobacillus
Reservoir	Human
Vector	None
Vehicle	Air, Infected secretions, Respiratory or pharyngeal acquisition
Incubation Period	7d - 10d (range 5d - 21d)
Diagnostic Tests	Culture & direct fluorescence (nasopharynx). Alert laboratory when suspected. Serology.
Typical Adult Therapy	Respiratory precautions. <i>Azithromycin</i> 500 mg po X 1, then 250 mg daily X 4 days OR <i>Clarithromycin</i> 500 mg po BID X 7 days OR Sulfamethoxazole / <i>Trimethoprim</i>
Typical Pediatric Therapy	Respiratory precautions: <i>Azithromycin</i> 10mg /kg po daily for 5 days OR <i>Clarithromycin</i> 15/mg/kg BID X 7 days OR Sulfamethoxazole / <i>Trimethoprim</i>
Vaccines	<i>DTaP vaccine</i> <i>DTP vaccine</i>
Clinical Hints	Coryza, paroxysmal cough May be associated with pneumonia or otitis Prominent lymphocytosis Most often diagnosed in young children, but may present as indolent cough in adults Epistaxis and subconjunctival hemorrhage often noted Seizures (below age 2) The case-fatality rate is 0.5%.
Synonyms	<i>Bordetella holmesii</i> , <i>Bordetella parapertussis</i> , <i>Bordetella pertussis</i> , Coqueluche, Keuchhusten, Kikhosta, Kikhoste, Kinkhoest, Parapertussis, Pertosse, Syndrome coqueluchoide, Tos convulsa, Tos farina, Tosse convulsa, Tussis convulsa, Whooping cough. ICD9: 033 ICD10: A37

Pertussis in Haiti

Vaccine Schedule:

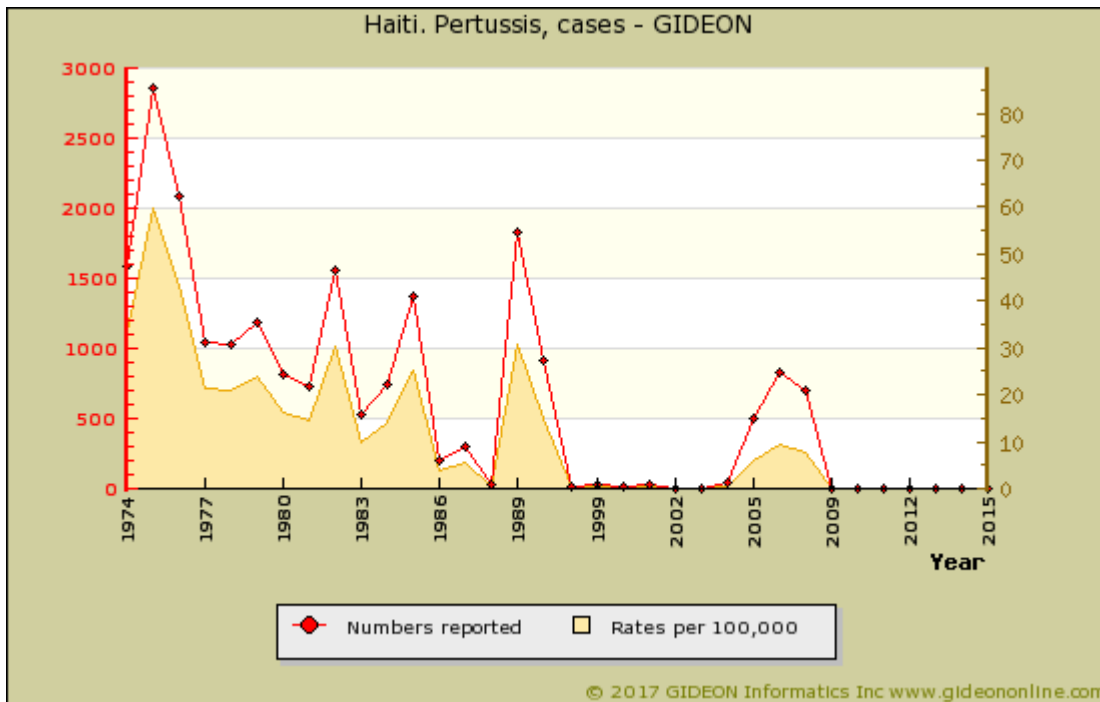
- BCG - birth
- DTwPHibHepB - 6,10,14 weeks
- HepB - >= 12 years
- IPV - 6 weeks
- MMR - 12, 24 months
- MR - 9 months
- OPV - 6,10,14 weeks
- Rotavirus - 6,10 weeks
- Td - 1st contact; +4 weeks; +6 months; +1, +1 years pregnant women



Graph: Haiti. Pertussis - WHO-UNICEF est. vaccine (DTP3 %) coverage

Individual years:

2009 - A survey found that 92.0% of children ages 12 to 23 months had been immunized (DPT-1). ¹



Graph: Haiti. Pertussis, cases

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Pharyngeal and cervical space infx.

Agent	BACTERIUM. <i>Streptococcus pyogenes</i> , mixed oral anaerobes, etc.
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Careful examination of region and X-ray (or CT scan). Smear and culture of pus if available.
Typical Adult Therapy	Surgical drainage and parenteral antibiotics effective against oral flora
Typical Pediatric Therapy	As for adult
Clinical Hints	Fever, painful swelling and displacement of the tongue, fauces and other intraoral structures; Dysphagia, dyspnea or jugular phlebitis may ensue in more virulent infections.
Synonyms	Cervical space infection, descending necrotizing mediastinitis, Lemmier's syndrome, Ludwig's angina, Post-anginal septicemia, Quinsy. ICD9: 682.0,682.1 ICD10: J36,J39.0,J39.1

Pharyngitis - bacterial

Agent	BACTERIUM. Most often <i>Streptococcus pyogenes</i> ; <i>Streptococcus</i> groups B, C, F and G are occasionally isolated
Reservoir	Human
Vector	None
Vehicle	Droplet, Rarely food, Respiratory or pharyngeal acquisition
Incubation Period	1d - 5d
Diagnostic Tests	Throat swab for culture or antigen detection (group A Streptococcus) ASLO titer may not indicate current infection
Typical Adult Therapy	Penicillin G or Penicillin V or other antistreptococcal antibiotic to maintain serum level for 10 days
Typical Pediatric Therapy	As for adult
Clinical Hints	Purulent pharyngitis and cervical lymphadenopathy usually indicate streptococcal etiology Viruses (mononucleosis, Enteroviruses) and other bacteria (gonorrhea, diphtheria) should also be considered
Synonyms	Acute pharyngitis, Bacterial pharyngitis, Mal di gola batterica, Oral thrush, Streptococcal pharyngitis, Tonsillitis - bacterial, Vincent's angina. ICD9: 034.0,462 ICD10: J02,J03

Philophthalmosis

Agent	PARASITE - Platyhelminthes, Trematoda. <i>Philophthalmus gralli</i> , <i>Ph. lucipetus</i> , <i>Ph. lacrimosus</i>
Reservoir	Snail
Vector	None
Vehicle	Aquatic plants
Incubation Period	Unknown Less than 24 hours in birds
Diagnostic Tests	Identification of excised worm
Typical Adult Therapy	Removal of worm
Typical Pediatric Therapy	As for adult
Clinical Hints	Conjunctivitis, lacrimation and the presence of an adult worm in the conjunctival sac
Synonyms	Oriental avian eye fluke, Oriental eye fluke, Philophthalmus. ICD9: 121.8 ICD10: b66.8

Pinta

Agent	BACTERIUM. <i>Treponema carateum</i> A microaerophilic gram-negative spirochete
Reservoir	Human
Vector	Black fly (<i>Simulium</i>)
Vehicle	Contact
Incubation Period	7d - 21d (range 3d - 60d)
Diagnostic Tests	VDRL & FTA (or MHTP) - as in syphilis.
Typical Adult Therapy	Benzathine Penicillin G 1.2 million units IM as single dose
Typical Pediatric Therapy	Benzathine Penicillin G : Weight <14 kg 300,000u IM Weight 14 to 28kg 600,000u IM Weight >28kg 1.2 million u IM
Clinical Hints	Acute, pruritic erythematous papules which evolve to chronic, enlarging dyschromic plaques A generalized papulosquamous rash may be noted later in the illness Lesions may recur for up to 10 years in some cases
Synonyms	Azul, Carate, Empeines, Mal del pinto, Tina. ICD9: 103 ICD10: A67

Pityriasis rosea

Agent	UNKNOWN. Human herpesvirus 7 has been implicated
Reservoir	Unknown
Vector	Unknown
Vehicle	Unknown
Incubation Period	Unknown
Diagnostic Tests	Clinical features.
Typical Adult Therapy	Supportive; ultraviolet B exposure is suggested Acyclovir 400 mg PO TID X 7 days has been used in severe cases
Typical Pediatric Therapy	Supportive; ultraviolet B exposure is suggested
Clinical Hints	Herald patch followed by crops of pruritic, salmon-colored macules and papules Systemic symptoms are rare Illness resolves after 3 to 8 weeks
Synonyms	

Plesiomonas infection

Agent	BACTERIUM. <i>Plesiomonas shigelloides</i> A facultative gram-negative bacillus
Reservoir	Fish Animal, Soil, Reptile, Bird
Vector	None
Vehicle	Water, Food
Incubation Period	1d - 2d
Diagnostic Tests	Stool culture - alert laboratory when this organism is suspected. Nucleic acid amplification.
Typical Adult Therapy	Stool precautions. Ciprofloxacin 400 mg IV or 750 mg PO, BID Alternatives: Sulfamethoxazole / Trimethoprim , Amoxicillin / Clavulanate , Ceftriaxone
Typical Pediatric Therapy	Stool precautions. Sulfamethoxazole / Trimethoprim , Amoxicillin / Clavulanate , Ceftriaxone
Clinical Hints	Fever, abdominal pain, vomiting and severe diarrhea Symptoms often persist for 2 to 4 weeks In many cases, follows ingestion of shellfish or recent travel to developing countries
Synonyms	<i>Plesiomonas shigelloides</i> . ICD9: 008.8 ICD10: A04.8

Pleurodynia

Agent	VIRUS - RNA. Picornaviridae: Coxsackievirus
Reservoir	Human
Vector	None
Vehicle	Air, Fecal-oral, Fomite, Respiratory or pharyngeal acquisition
Incubation Period	3d - 5d
Diagnostic Tests	Viral culture (throat, stool). Serology. Nucleic acid amplification.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	A late summer illness in temperate regions Sore throat followed by pleuritic chest pain Pain is often recurrent and appears in "waves" - local pressure on affected area may elicit the pain Usually resolves within one week.
Synonyms	Balme disease, Bamble disease, Bamie disease, Bornholm disease, Devil's grip, Drangedal disease, Epidemic benign dry pleurisy, Epidemic myalgia, Sylvest's disease. ICD9: 074.1 ICD10: B33.0

Pneumocystis pneumonia

Agent	FUNGUS. Ascomycota, Archiascomycetes, Pneumocystidales: <i>Pneumocystis jiroveci</i> (now distinct from <i>Pneumocystis carinii</i>)
Reservoir	Human
Vector	None
Vehicle	Air, Respiratory or pharyngeal acquisition
Incubation Period	4d - 8w
Diagnostic Tests	Identification of organisms in induced sputum, bronchial washings, tissue. Serology. Nucleic acid amplification.
Typical Adult Therapy	Therapy: Sulfamethoxazole / Trimethoprim 25 mg/5 mg/kg QID X 14d. OR Pentamidine 4 mg/kg/d X 14d. OR Dapsone + Trimethoprim . OR Atovaquone OR Primaquine + Clindamycin Prophylaxis - similar, but at altered dosage. Dapsone also used.
Typical Pediatric Therapy	Therapy: Sulfamethoxazole / Trimethoprim 25 mg/5 mg/kg QID X 14d. OR Pentamidine 4 mg/kg/d X 14d. OR Dapsone + Trimethoprim . OR Atovaquone OR Primaquine + Clindamycin Prophylaxis - similar, but at altered dosage.
Clinical Hints	Dyspnea, hypoxia and interstitial pneumonia Usually encountered in the setting of severe immune suppression (AIDS, leukemia, etc) Roentgenographic findings (typically bilateral alveolar pattern) may appear only after several days of illness
Synonyms	PCP, <i>Pneumocystis carinii</i> , <i>Pneumocystis jiroveci</i> . ICD9: 136.3 ICD10: B59

Pneumonia - bacterial

Agent	BACTERIUM. <i>Streptococcus pneumoniae</i> , <i>Klebsiella pneumoniae</i> ssp <i>pneumoniae</i> , other aerobic and facultative gram negative bacilli, etc.
Reservoir	Human
Vector	None
Vehicle	Droplet, Endogenous, Respiratory or pharyngeal acquisition
Incubation Period	1d - 3d
Diagnostic Tests	Culture of sputum, blood. Analyze ("grade") sputum cytology to assess significance of culture.
Typical Adult Therapy	Antimicrobial agent(s) appropriate to known or suspected pathogen
Typical Pediatric Therapy	As for adult
Vaccine	Pneumococcal vaccine
Clinical Hints	Rigors, pleuritic pain, hemoptysis, lobar infiltrate and leukocytosis Empyema and lung abscess suggest etiology other than pneumococcus Foul sputum with mixed flora may herald anaerobic (aspiration) pneumonia
Synonyms	Bacterial pneumonia, Empiema, Empeem, Empyem, Empyema, Empyeme, Lung abscess, Neumonia, Pleurisy, Pneumococcal infection - invasive, Pneumococcal pneumonia, Polmonite batterica, Streptococcus pneumoniae, Streptococcus pneumoniae - invasive. ICD9: 481,482,483,484 ICD10: J13,J14,J15,J17,J18,J85,J86

Poliomyelitis and acute flaccid paralysis

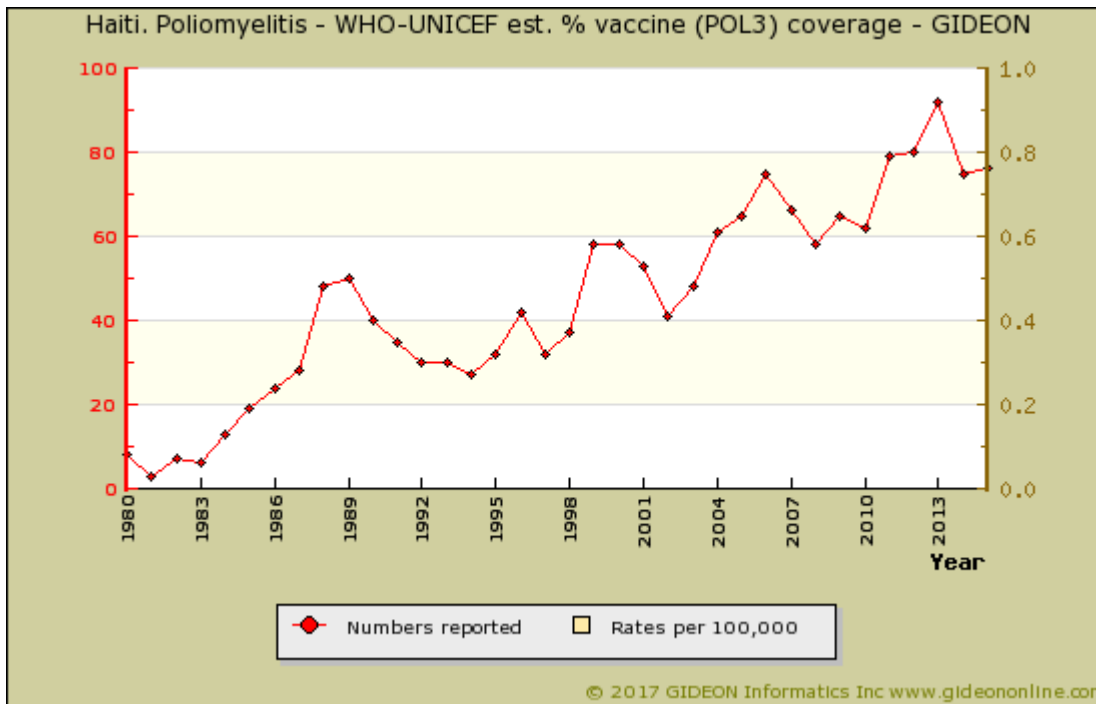
Agent	VIRUS - RNA. Picornaviridae, Picornavirus: Polio virus
Reservoir	Human
Vector	None
Vehicle	Fecal-oral, Dairy products, Food, Water, Fly, Respiratory or pharyngeal acquisition
Incubation Period	7d - 14d (range 3d - 35d)
Diagnostic Tests	Viral culture (pharynx, stool). Serology. Nucleic acid amplification.
Typical Adult Therapy	Stool precautions; supportive
Typical Pediatric Therapy	As for adult
Vaccines	Poliomyelitis - injectable vaccine Poliomyelitis - oral vaccine
Clinical Hints	Sore throat, headache, vomiting and myalgia followed by flaccid paralysis Meningeal involvement in 1% of cases - paralysis in only 0.1% Paralysis tends to be more extensive in adult patients
Synonyms	Acute flaccid paralysis, Heine-Medin disease, Infantile paralysis, Kinderlahmung, Kinderverlamming, Paralisi infantile, Paralisis flaccida, Paralisis flacida aguda, PFA (Paralisis Flacidas Agudas), Polio, Poliomyelite, Poliomyelitt. ICD9: 045 ICD10: A80

Although Poliomyelitis and acute flaccid paralysis is not endemic to Haiti, imported, expatriate or other presentations of the disease have been associated with this country.

Poliomyelitis and acute flaccid paralysis in Haiti

Vaccine Schedule:

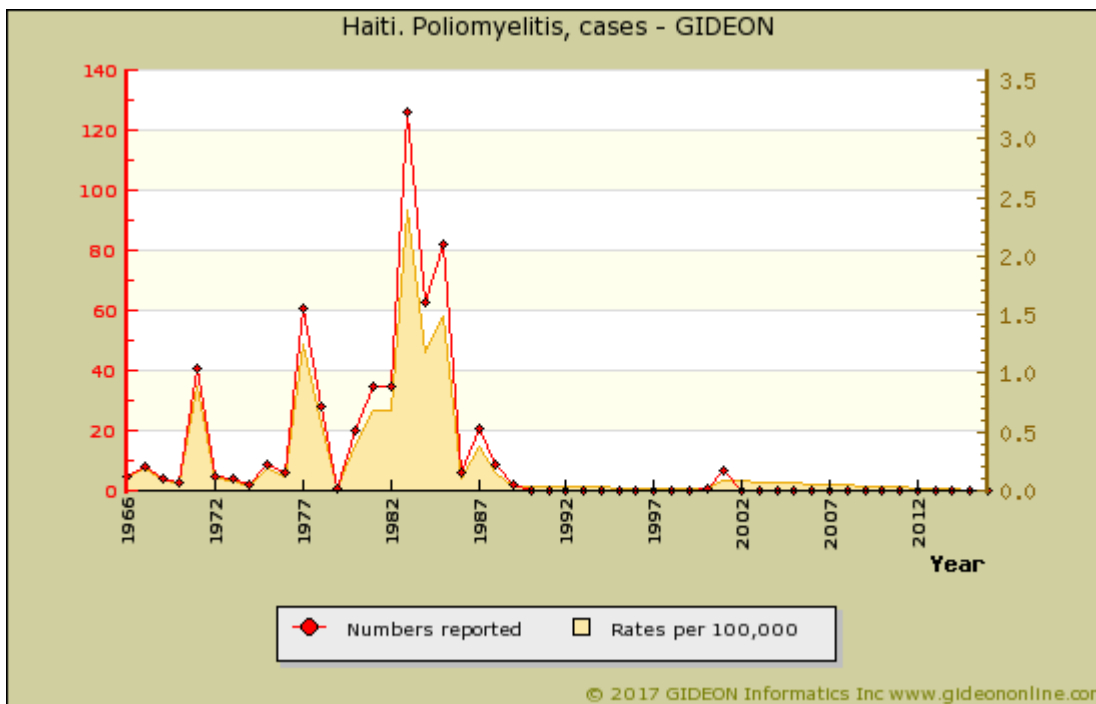
BCG - birth
DTwPHibHepB - 6,10,14 weeks
HepB - >= 12 years
IPV - 6 weeks
MMR - 12, 24 months
MR - 9 months
OPV - 6,10,14 weeks
Rotavirus - 6,10 weeks
Td - 1st contact; +4 weeks; +6 months; +1, +1 years pregnant women



Graph: Haiti. Poliomyelitis - WHO-UNICEF est. % vaccine (POL3) coverage

Individual years:

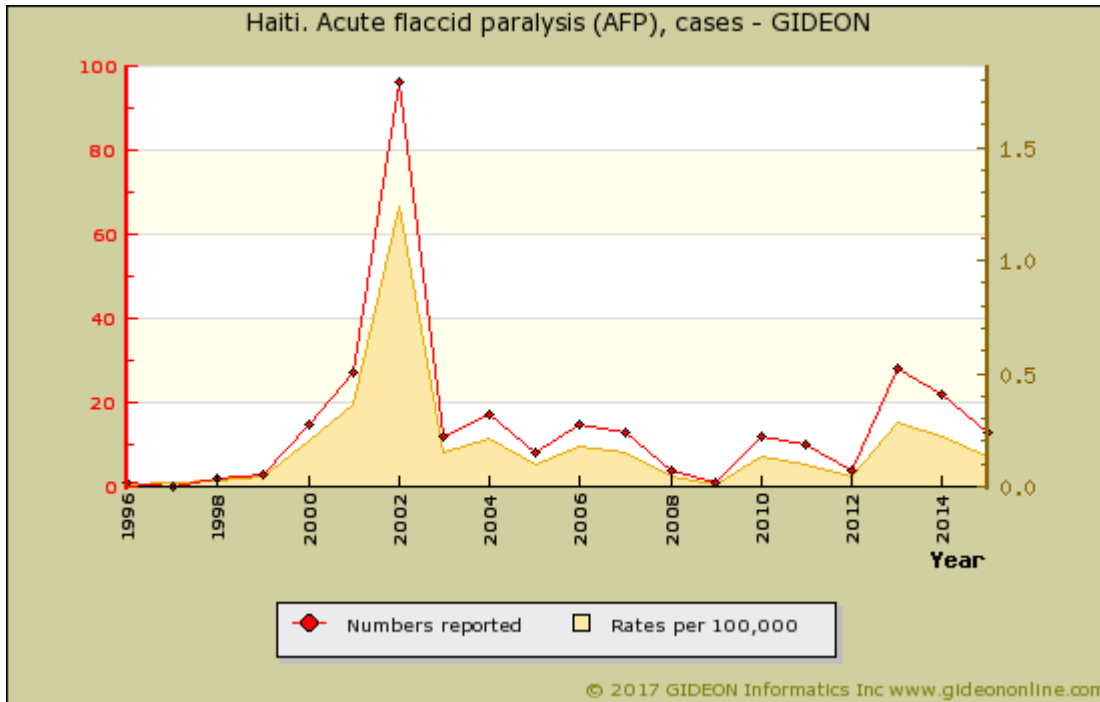
2009 - A survey found that 93.4% of children ages 12 to 23 months had been immunized. ¹



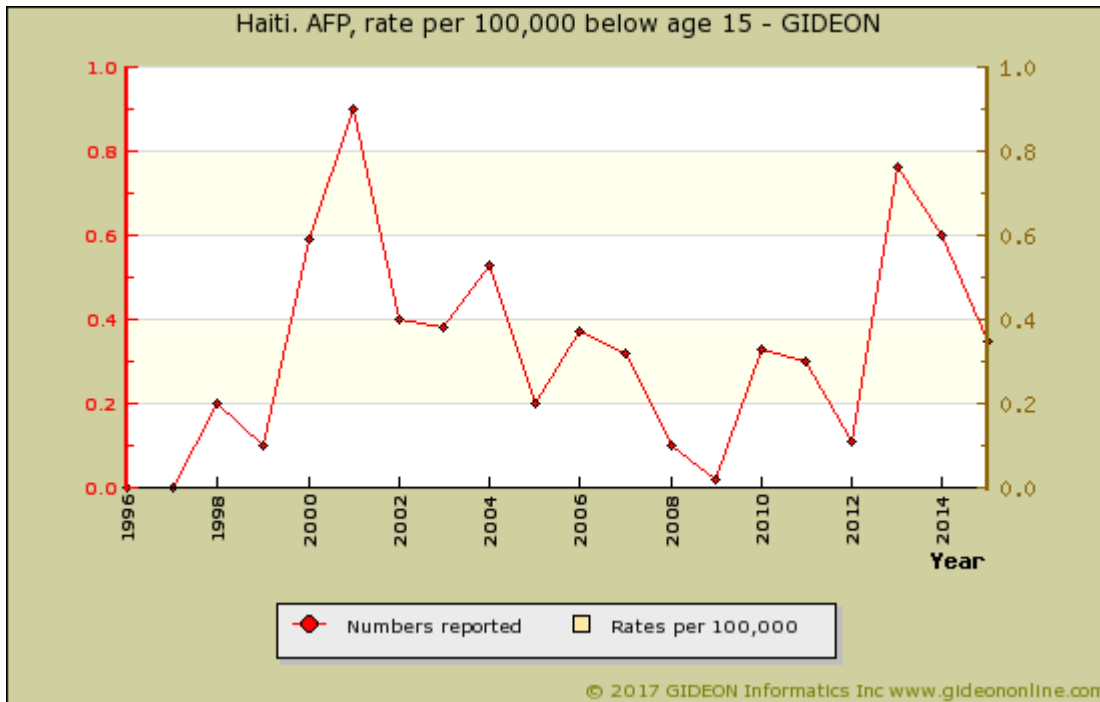
Graph: Haiti. Poliomyelitis, cases

Notes:

1. The last case of wild viral infection was reported in 1989, and natural disease was declared eradicated as of 1991.



Graph: Haiti. Acute flaccid paralysis (AFP), cases



Graph: Haiti. AFP, rate per 100,000 below age 15

Notable outbreaks

Years	Cases	Pathogen	Notes
1954			Outbreak reported - additional details unavailable. ²
2000	8	Poliovirus 1 vaccine-derived	Outbreak on Hispaniola, including 8 cases in Haiti (Nan Citron town). ^{3 4 5 6 7 8 9 10 11 12 13 14}

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Protothecosis and chlorellosis

Agent	ALGA. <i>Prototheca wickerhamii</i> ; rarely <i>Pr. zopfii</i> , <i>Pr. cutis</i> Achloric algae Chlorella spp. contain chloroplasts
Reservoir	Rare animal pathogens (cat, dog, cattle wild mammals).
Vector	None
Vehicle	Water, Sewage, Food, Skin trauma
Incubation Period	Unknown
Diagnostic Tests	Culture on fungal media. Biopsy. Nucleic acid amplification.
Typical Adult Therapy	Surgical excision. There are anecdotal reports of successful therapy with Amphotericin B , Ketoconazole and Itraconazole (latter 200 mg/day X 2 months) or voriconazole
Typical Pediatric Therapy	As for adult (Itraconazole 2 mg/kg/day X 2 months)
Clinical Hints	May follow immune suppression or skin trauma Dermal papules, plaques, eczematoid or ulcerated lesions Olecranon bursitis is common Systemic infection reported in some cases
Synonyms	Chlorellosis, Prototheca, Protothecosis. ICD9: 136.8 ICD10: B99

Pseudocowpox

Agent	VIRUS - DNA. Poxviridae, Parapoxvirus: Pseudocowpox virus
Reservoir	Cattle
Vector	None
Vehicle	Contact
Incubation Period	5d - 14d
Diagnostic Tests	Viral culture (skin lesion or exudate). Serology. Nucleic acid amplification. Biosafety level 3.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Umbilicated nodule on the hand following contact with cattle Mild regional lymphadenopathy.
Synonyms	Bovine papular stomatitis, Farmyard pox, Milker's nodule, Noduli mulgentinum, Paravaccinia, Sealpox. ICD9: 051.1 ICD10: B08.0

Pyodermas (impetigo, abscess, etc)

Agent	BACTERIUM. Various (<i>Staphylococcus aureus</i> & <i>Streptococcus pyogenes</i> predominate)
Reservoir	Human
Vector	None
Vehicle	Endogenous, Secretions, Contact, Trauma
Incubation Period	Variable
Diagnostic Tests	Clinical diagnosis usually sufficient. Aspiration of lesion for smear and culture may be helpful in some cases.
Typical Adult Therapy	Antibiotic directed at likely pathogens (Group A Streptococcus and Staphylococcus aureus)
Typical Pediatric Therapy	As for adult
Clinical Hints	Impetigo characterized by vesicles which progress to pustules ("honey-colored pus") Highly contagious May be complicated by acute glomerulonephritis
Synonyms	Acne vulgaris, Carbonchio, Carbuncle, Follicolite, Follicolite, Folliculite, Folliculitis, Follikulitis, Foroncolosi, Foronculose, Forunculosi, Furunculosis, Furunkulose, Furunulose, Hydradenitis, Impetigine, Impetigo, Paronychia, Pyoderma. ICD9: 680,684,686 ICD10: L01,L02,L08.0,L73.2

Pyomyositis

Agent	BACTERIUM. Usually <i>Staphylococcus aureus</i>
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Ultrasonography or CT scan.
Typical Adult Therapy	Antibiotic directed at confirmed or suspected pathogen (usually <i>Staphylococcus aureus</i>); drainage
Typical Pediatric Therapy	As for adult
Clinical Hints	Pain, swelling and "woody" induration of a large muscle (usually lower limb or trunk) Associated with fever and leukocytosis Often follows trauma to the involved region Lymphadenopathy uncommon; leucocytosis in most cases.
Synonyms	Tropical pyomyositis. ICD9: 040.81 ICD10: M60.0

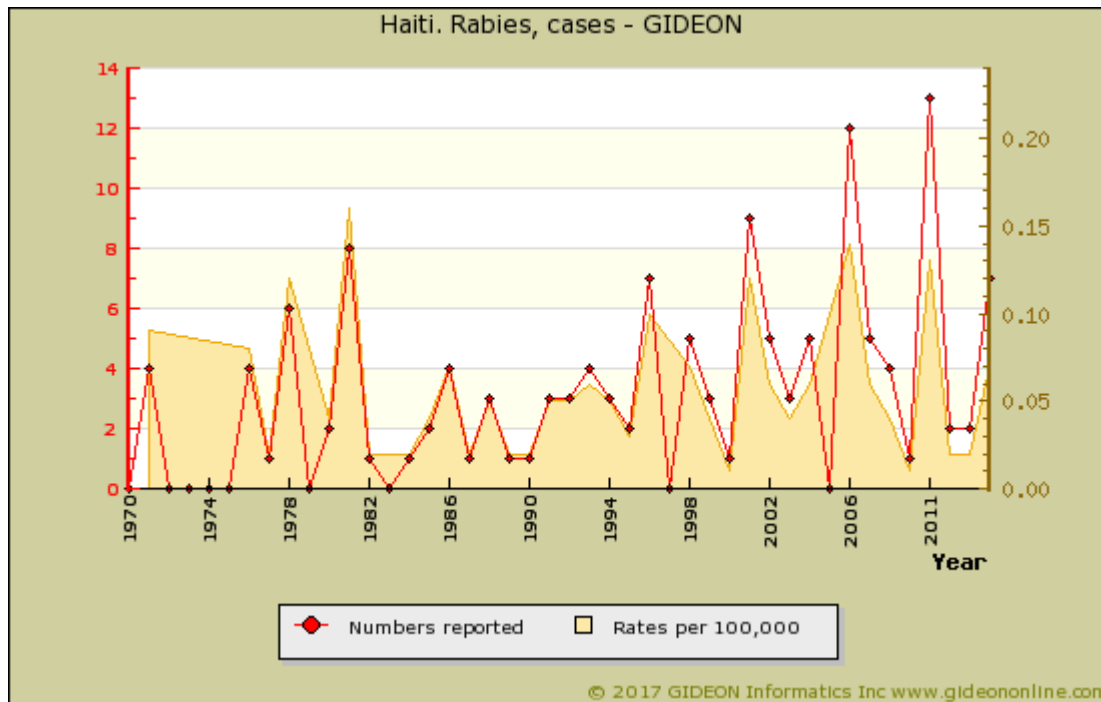
Q-fever

Agent	BACTERIUM. <i>Coxiella burnetii</i> Intracellular organism related to Rickettsiae
Reservoir	Cattle, Sheep, Goat, Bird, Fish, Rodent, Rabbit, Tick, Bandicoot, Marsupial, Dog, Cat
Vector	None
Vehicle	Air, Dust, Secretions, Dairy products, Respiratory or pharyngeal acquisition
Incubation Period	18d - 21d (range 4d - 40d)
Diagnostic Tests	Serology. Culture possible in specialized laboratories. Nucleic acid amplification.
Typical Adult Therapy	Doxycycline 100 mg BID X 2w OR Fluoroquinolone Add Hydroxychloroquine 600 mg per day if endocarditis
Typical Pediatric Therapy	Age < 8 years: Erythromycin 10 mg/kg QID X 2 weeks Age >= 8 years: Doxycycline 100 mg BID X 2 weeks
Vaccine	Q fever vaccine
Clinical Hints	Headache, myalgia, cough and hepatic dysfunction Hepatosplenomegaly, "F.U.O." and endocarditis are encountered Proximity to farming or animals during 2 to 4 weeks preceding illness Most infections resolve in 1 to 2 weeks Reported case-fatality rate is 1.5%
Synonyms	Balkan grippe, Candidatus <i>Coxiella massiliensis</i> , <i>Coxiella burnetii</i> , Febbre australiana, Febre Q, Nine Mile fever, Q-Fieber, Q-koorts, Query fever, Red River fever. ICD9: 083.0 ICD10: A78

Rabies

Agent	VIRUS - RNA. Rhabdoviridae, Mononegavirales, Lyssavirus: Rabies virus. Other human Lyssaviruses = Mokola, Duvenhage, European Bat (EBL)
Reservoir	Dog, Fox, Skunk, Jackal, Wolf, Cat, Raccoon, Mongoose, Bat, Rodent, Rabbit
Vector	None
Vehicle	Saliva, Bite, Transplants, Air (bat aerosol), Respiratory or pharyngeal acquisition
Incubation Period	1m - 3m (range 4d to 19 years !)
Diagnostic Tests	Viral culture & direct immunofluorescence of saliva, CSF, corneal smears. Serology. Nucleic acid amplification.
Typical Adult Therapy	Strict isolation; supportive. The Milwaukee protocol (prolonged deep sedation and support) has been successful in some cases. See Vaccines module for pre- and post-exposure schedules
Typical Pediatric Therapy	As for adult
Vaccines	Rabies vaccine Rabies immune globulin
Clinical Hints	Follows animal bite (rarely lick) - often after months Agitation, confusion, seizures, painful spasms of respiratory muscles Progressive paralysis, coma and death Case-fatality rate exceeds 99.9%
Synonyms	Aravan, Australian bat lyssavirus, Ballina, BBLV, Bokeloh bat lyssavirus, Duvenhage, EBL, European bat Lyssavirus, Hondsdolheid, Hydrophobia, Ikoma lyssavirus, Irkut, Khujand, Lyssa, Mokola, Pteropus lyssavirus, Rabia, Rage, Raiva, Saint Hubert's disease, Shimoni bat virus, Tollwut, West Caucasian bat, Wutkrankheit. ICD9: 071 ICD10: A82

Rabies in Haiti



Graph: Haiti. Rabies, cases

Notes:

1. The average annual incidence for human rabies was 2.0 (1970 to 1979); 2.4 (1980 to 1984); 2.0 (1985 to 1989); 3.0 (1990 to 1994).

2. The true annual incidence may be as high as 130 per year (2015 publication) ^{1 2}

Individual years:

1994 - All from dogs.

1996 - All from dogs.

182 postexposure treatment courses were administered in 1994, and 85 in 1998.

1,003 animal-bite victims were identified through active surveillance during 2013 to 2014. ³

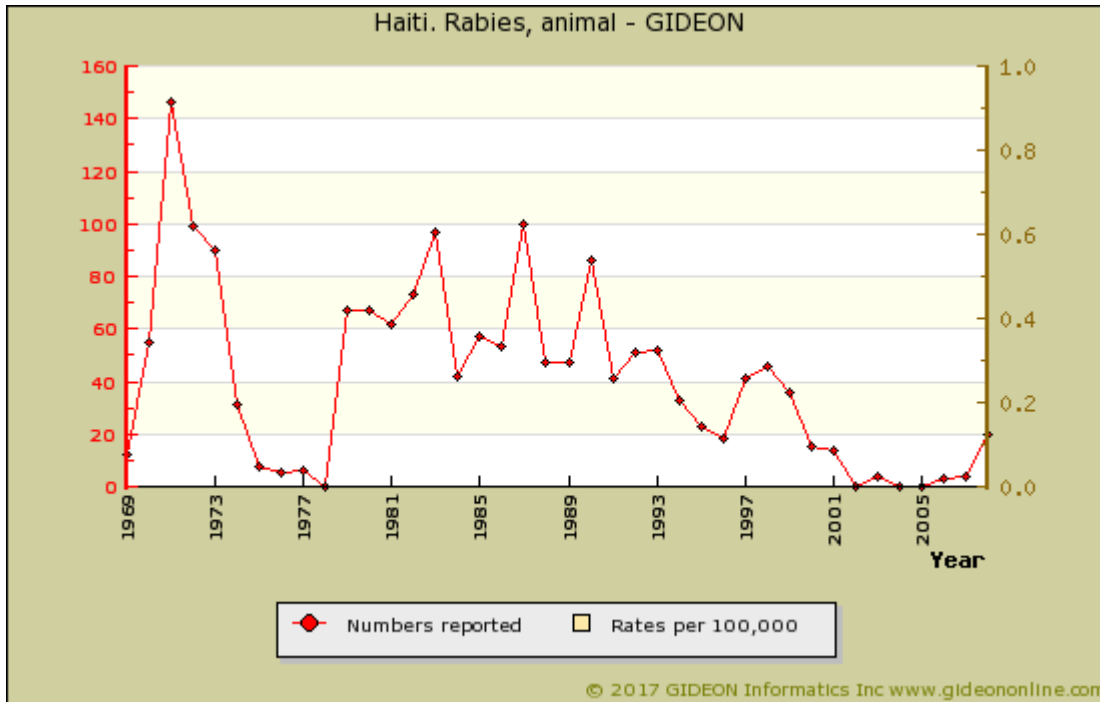
Exported cases:

1994 - A man died of rabies in the United States following the bite of a rabid animal in Haiti. ⁴

2004 - A man died of rabies in the United States following the bite of a rabid dog in Haiti. ⁵

2011 - A woman died of rabies in the United States following the bite of a rabid dog in Haiti. ^{6 7 8}

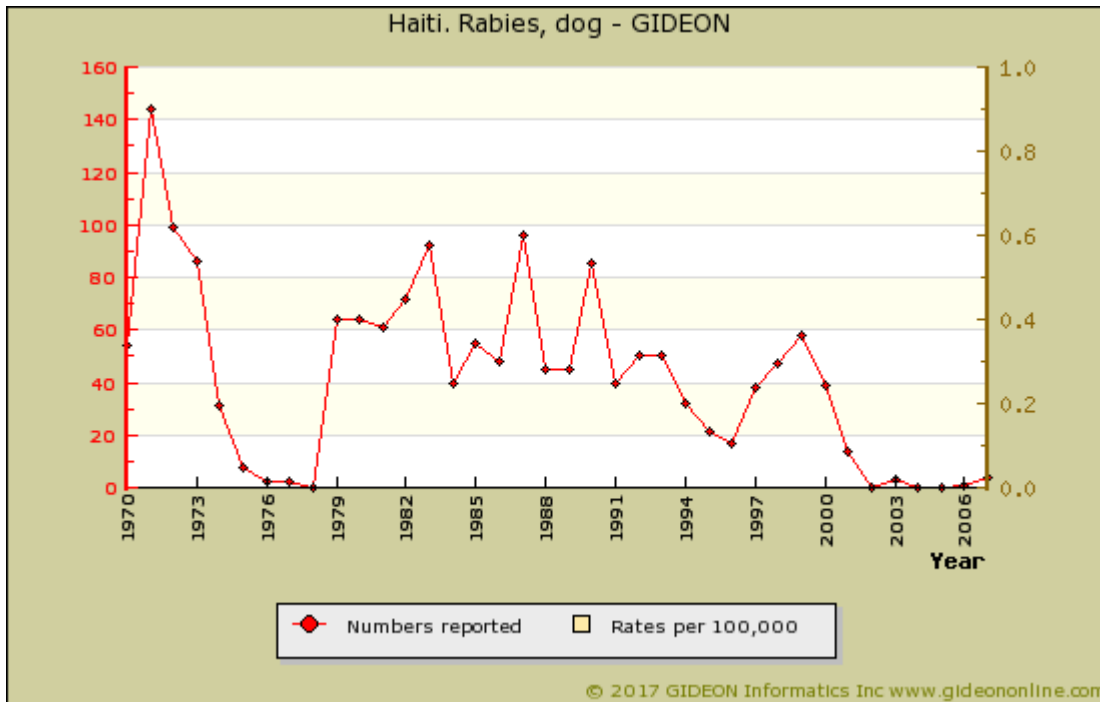
2013 - A traveler from the Netherlands acquired rabies from a dog bite in Haiti. ⁹



Graph: Haiti. Rabies, animal

Notes:

1. One rabid bat was reported in 1999; 0 during 2001 to 2007.
2. 106 rabid animals (90% of these dogs) were identified through active surveillance during 2013 to 2014. ¹⁰



Graph: Haiti. Rabies, dog

Notes:

1. Reviews of dog ecology and rabies control in Haiti - see references ¹¹ ¹²

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Rat bite fever - spirillary

Agent	BACTERIUM. <i>Spirillum minus</i> An aerobic gram-negative spirochete
Reservoir	Rat, Mouse, Cat
Vector	None
Vehicle	Bite
Incubation Period	7d - 21d (range 5d - 40d)
Diagnostic Tests	Dark-field exam of wound. Animal inoculation.
Typical Adult Therapy	Amoxicillin / Clavulanate 875 / 125 mg PO BID X 7d. OR Procaine Penicillin G 600,000u IM q12h X 7d. OR Doxycycline 200 mg BID X 7d
Typical Pediatric Therapy	Amoxicillin / Clavulanate 10 mg/kg PO BID X 7d OR Procaine Penicillin G 25,000u/kg IM q12h X 7d
Clinical Hints	Lymphadenopathy, myalgia, maculopapular rash and recurrent fever Symptoms begin 1 to 3 weeks after rat bite Infection resolves after 3 to 6 days The case-fatality rate is 6%
Synonyms	Sodoku, Spirillosis, Spirillum minor, Spirillum minus. ICD9: 026.0 ICD10: A25.0

Rat bite fever - streptobacillary

Agent	BACTERIUM. <i>Streptobacillus moniliformis</i> A facultative gram-negative bacillus
Reservoir	Rat, Squirrel, Weasel, Turkey
Vector	None
Vehicle	Secretions, Bite, Dairy products
Incubation Period	3d - 10d (range 1d - 22d)
Diagnostic Tests	Culture of blood or joint fluid. Nucleic acid amplification.
Typical Adult Therapy	Amoxicillin / Clavulanate 875 /1 25 mg PO BID X 7d. OR Doxycycline 100 mg PO BID X 7d
Typical Pediatric Therapy	Amoxicillin / Clavulanate 10 mg/kg TID X 7d. OR (if age>8 years) Doxycycline 2 mg/kg PO BID X 7 days (maximum 200 mg/day)
Clinical Hints	Headache, myalgia, maculopapular rash and arthralgia or arthritis History of a rat bite during the preceding 1 to 3 weeks in most cases Infection has also been acquired from contaminated milk The case-fatality rate is 10%.
Synonyms	Haverhill fever, Streptobacillosis, <i>Streptobacillus moniliformis</i> . ICD9: 026.1 ICD10: A25.1

Respiratory syncytial virus infection

Agent	VIRUS - RNA. Paramyxoviridae, Pneumovirinae: Human respiratory syncytial virus
Reservoir	Human
Vector	None
Vehicle	Droplet, Infected secretions (hands), Respiratory or pharyngeal acquisition
Incubation Period	2d - 8d
Diagnostic Tests	Viral culture or DFA (nasal and other respiratory secretions). Serology. Nucleic acid amplification.
Typical Adult Therapy	Ribavirin aerosol 20 mg/ml for 12h/d X 3 to 5d (severe infections). Effectiveness not proven
Typical Pediatric Therapy	As for adult
Vaccine	RSV immune globulin
Clinical Hints	Rhinorrhea, cough, wheezing, bronchiolitis and respiratory distress Most cases occur during infancy
Synonyms	Chimpanzee coryza agent, Respiratory syncytial virus, RSV. ICD9: 079.6,480.1 ICD10: B97.4,J12.1

Respiratory viruses - miscellaneous

Agent	VIRUS - RNA and DNA Paramyxoviridae: Mononegavirales Human Metapneumovirus Coronaviridae: New Haven Coronavirus, HKU1 Parvovirinae: Human Bocavirus
Reservoir	Human
Vector	None
Vehicle	Droplet, Secretions (on hands), Respiratory or pharyngeal acquisition
Incubation Period	Unknown
Diagnostic Tests	Viral culture. Serology. Nucleic acid amplification.
Typical Adult Therapy	NA
Typical Pediatric Therapy	NA
Clinical Hints	Rhinorrhea, cough, wheezing, bronchiolitis and respiratory distress Age distribution and prominence of specific signs / symptoms vary somewhat among the specific viruses in this category
Synonyms	Acanthamoeba polyphaga mimivirus, Bat reovirus, Bocavirus, Bradford coccus, Cardiovirus, Coronavirus HKU1, Coronavirus NL63, Encephalomyocarditis Virus, HCoV-HKU1, HCoV-NL63, HK23629/07, HKU1, HRV-A, HRV-B, HRV-C, Human Bocavirus, Human Coronavirus NL63, Human CoV 229E, Human CoV OC43, Human metapneumovirus, Human rhinovirus, Kampar, Karolinska Institutet virus, KI virus, Melaka, Metapneumovirus, Mimivirus, New Haven coronavirus, Pulau, Rhinovirus, Small Anellovirus, Tioman virus, Torque tenovirus, Torquetenovirus, Washington University virus, WU polyomavirus, WU virus. ICD9: 079.89 ICD10: B34.2,J12.8

Reye's syndrome

Agent	UNKNOWN
Reservoir	Unknown
Vector	None
Vehicle	Unknown
Incubation Period	Unknown
Diagnostic Tests	Clinical diagnosis.
Typical Adult Therapy	Electrolyte & glucose management, ? enemas, ? dialysis
Typical Pediatric Therapy	As for adult
Clinical Hints	Vomiting, lethargy, coma, seizures, hepatomegaly, hypoglycemia and elevated blood ammonia concentration Patients are usually anicteric Follows viral infection; aspirin ingestion is often implicated.
Synonyms	Reye syndrome. ICD9: 331.81 ICD10: G93.7

Rheumatic fever

Agent	BACTERIUM. <i>Streptococcus pyogenes</i> A facultative gram-positive coccus
Reservoir	Human
Vector	None
Vehicle	Droplet
Incubation Period	1w - 5w
Diagnostic Tests	Clinical diagnosis.
Typical Adult Therapy	Supportive; salicylates
Typical Pediatric Therapy	As for adult
Clinical Hints	Migratory arthritis, fever, carditis, chorea, subcutaneous nodules, erythema marginatum and leukocytosis In most cases, illness follows overt pharyngitis after 1 to 5 weeks An attack of rheumatic fever will persist for approximately 3 months.
Synonyms	Febbre reumatica. ICD9: 390,391 ICD10: I00,I01,I02

Rhinoscleroma and ozena

Agent	BACTERIUM. <i>Klebsiella pneumoniae</i> ssp <i>ozaenae</i> and <i>Klebsiella pneumoniae</i> ssp <i>rhinoscleromatis</i> Facultative gram-negative bacilli
Reservoir	Human
Vector	None
Vehicle	Secretions, Contact, Respiratory or pharyngeal acquisition
Incubation Period	Unknown
Diagnostic Tests	Culture. Biopsy. Nucleic acid amplification. Advise laboratory when this diagnosis is suspected.
Typical Adult Therapy	Rhinoscleroma: Streptomycin , often with systemic or topical Rifampin - for 3 to 6 weeks; fluoroquinolones also appear to be effective. Ozena: Ciprofloxacin or Sulfamethoxazole/trimethoprim for 3 months
Typical Pediatric Therapy	As for adult
Clinical Hints	Rhinoscleroma: - Chronic fetid nasal discharge - A crusting mass may develop in the nose - Infection may extend to the larynx, trachea of paranasal sinuses Ozena: - Chronic rhinitis progressing to atrophy of the nasal mucosa - Extension to the larynx and systemic infection have been reported
Synonyms	<i>Klebsiella pneumoniae</i> ssp <i>ozaenae</i> , Ozena, Rhinoscleroma. ICD9: 040.1 ICD10: J31.0

Rhodococcus equi infection

Agent	BACTERIUM. <i>Rhodococcus equi</i> An aerobic gram-positive coccobacillus
Reservoir	Farm animal, Farm soil
Vector	None
Vehicle	Inhalation, Contact, Ingestion
Incubation Period	Unknown
Diagnostic Tests	Culture of blood, body fluids and secretions. Advise laboratory when these organisms are suspected.
Typical Adult Therapy	Two drugs from the following, administered for two months: Levofloxacin , Rifampin , Azithromycin , Ciprofloxacin , Imipenem , Vancomycin
Typical Pediatric Therapy	Two drugs from the following, administered for two months: Levofloxacin , Rifampin , Azithromycin , Imipenem , Vancomycin
Clinical Hints	Most often presents as pleuropulmonary infection in an immune-suppressed patient 40% of patients recall recent contact with farm or farm animals
Synonyms	Rhodococcus. ICD9: 027.9 ICD10: A92.8

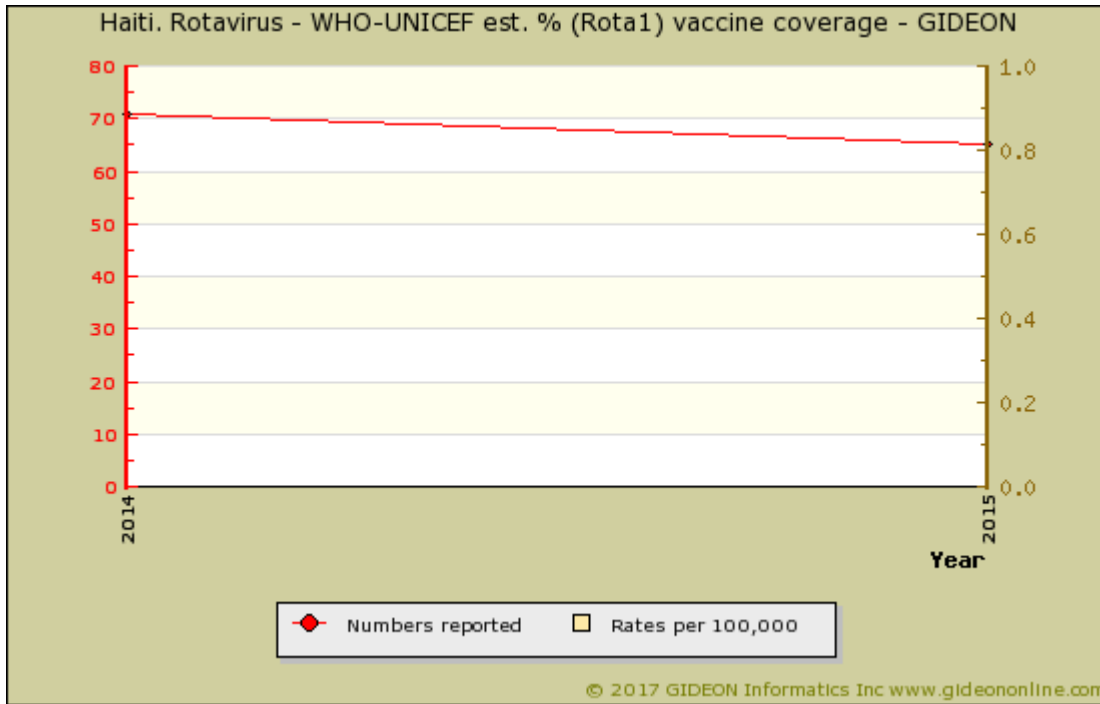
Rotavirus infection

Agent	VIRUS - RNA. Reoviridae: Rotavirus
Reservoir	Human, Pig
Vector	None
Vehicle	Fecal-oral, Water
Incubation Period	2.0 d (range 12h - 3d)
Diagnostic Tests	Stool assay for viral antigen. Serology. Nucleic acid amplification.
Typical Adult Therapy	Stool precautions; supportive
Typical Pediatric Therapy	As for adult
Vaccine	Rotavirus vaccine
Clinical Hints	Vomiting, diarrhea and mild fever The illness lasts approximately 1 week, and is most severe in infancy Fatal cases are associated with dehydration and electrolyte imbalance
Synonyms	Rotavirus. ICD9: 008.61 ICD10: A08.0

Rotavirus infection in Haiti

Vaccine Schedule:

BCG - birth
DTwPHibHepB - 6,10,14 weeks
HepB - >= 12 years
IPV - 6 weeks
MMR - 12, 24 months
MR - 9 months
OPV - 6,10,14 weeks
Rotavirus - 6,10 weeks
Td - 1st contact; +4 weeks; +6 months; +1, +1 years pregnant women



Graph: Haiti. Rotavirus - WHO-UNICEF est. % (Rota1) vaccine coverage

Prevalence surveys

Years	Study Group	%	Notes
2010 - 2013	patients	3.9	3.9% of patients hospitalized with watery diarrhea (2010 to 2013) ¹

References

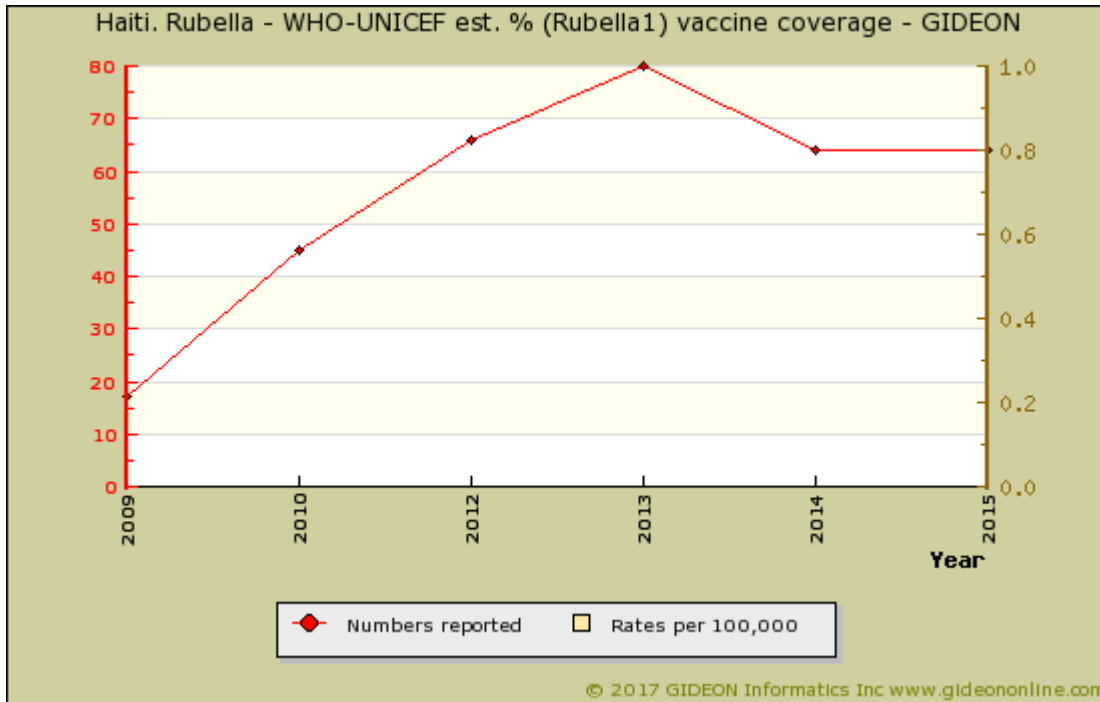
1. [Am J Trop Med Hyg 2013 Oct ;89\(4\):641-6.](#)

Rubella	
Agent	VIRUS - RNA. Togaviridae: Rubivirus, Rubella virus
Reservoir	Human
Vector	None
Vehicle	Contact, Air, Transplacental, Breastfeeding, Respiratory or pharyngeal acquisition
Incubation Period	16d - 18d (range 14d - 23d)
Diagnostic Tests	Viral culture (throat, urine). Serology. Nucleic acid amplification.
Typical Adult Therapy	Respiratory precautions. Supportive
Typical Pediatric Therapy	As for adult
Vaccines	Rubella vaccine Rubella - Mumps vaccine Measles-Mumps-Rubella vaccine Measles-Rubella vaccine
Clinical Hints	Maculopapular rash following a one-day prodrome of coryza and headache Post auricular lymphadenopathy Arthralgia and arthritis are encountered in adults Severe thrombocytopenia or encephalitis may follow acute infection Congenital rubella characterized by hearing loss, congenital heart disease, cataracts, mental retardation and other abnormalities
Synonyms	Epidemic roseola, German measles, Roda hund, Rode hond, Rode hunder, Rodehond, Rosolia, Roteln, Rubeola [Spanish], Three-day measles. ICD9: 056 ICD10: B06

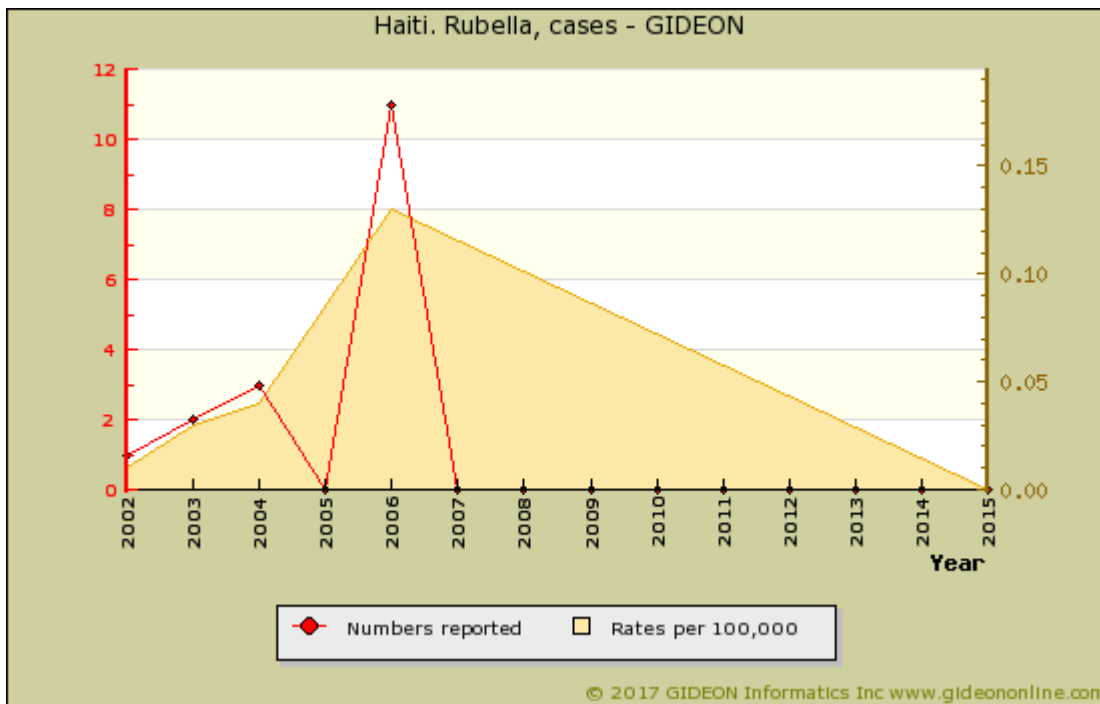
Rubella in Haiti

Vaccine Schedule:

BCG - birth
DTwPHibHepB - 6,10,14 weeks
HepB - >= 12 years
IPV - 6 weeks
MMR - 12, 24 months
MR - 9 months
OPV - 6,10,14 weeks
Rotavirus - 6,10 weeks
Td - 1st contact; +4 weeks; +6 months; +1, +1 years pregnant women



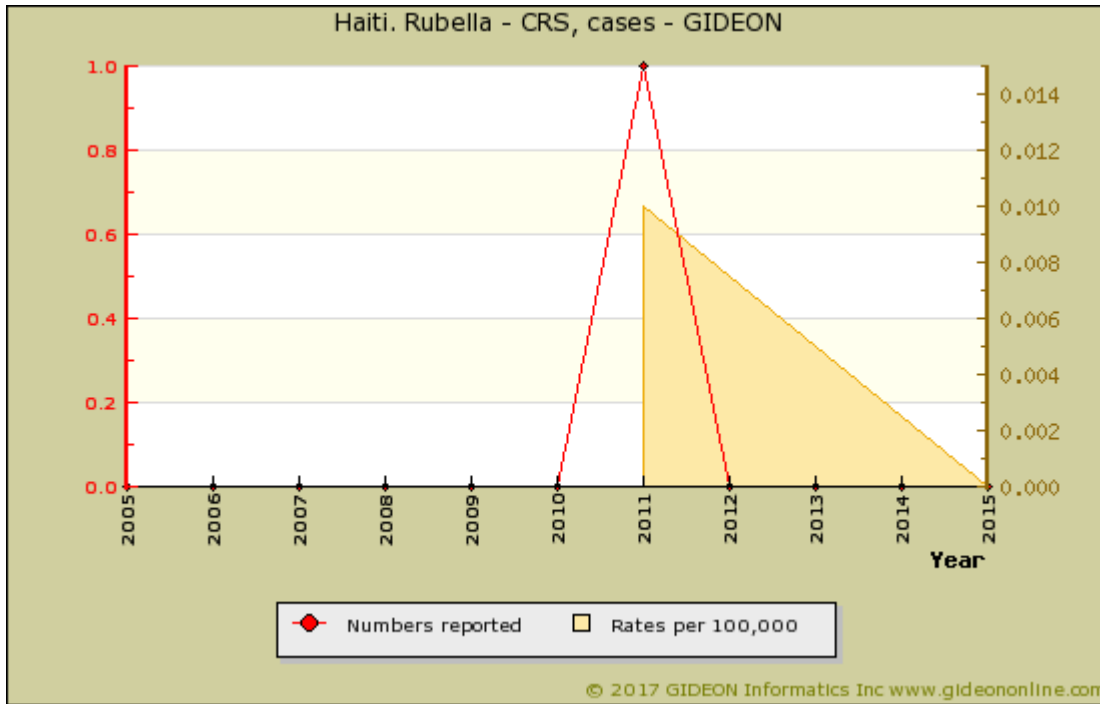
Graph: Haiti. Rubella - WHO-UNICEF est. % (Rubella1) vaccine coverage



Graph: Haiti. Rubella, cases

Notes:

1. Confirmed cases only.
2. No confirmed cases were reported during 2007 to 2010. ¹



Graph: Haiti. Rubella - CRS, cases

Notes:

1. The true incidence of congenital rubella syndrome in Haiti is estimated at 163 to 440 cases per year (2001). ²

Seroprevalence surveys

Years	Region	Study Group	%	Notes
2002	Port-Au-Prince	pregnant women	96	96.0% of pregnant women in Port-au-Prince and 89.9% in rural areas (2002) ³
2012		pregnant women	93.4	93.4% of pregnant women (2012) ⁴

References

1. J Infect Dis 2011 Sep 01;204 Suppl 2:S698-705.
2. Rev Panam Salud Publica 2002 Oct ;12(4):269-73.
3. Rev Panam Salud Publica 2004 Mar ;15(3):147-50.
4. Vaccine 2013 Dec 17;32(1):69-73.

Salmonellosis

Agent	BACTERIUM. <i>Salmonella</i> A facultative gram-negative bacillus
Reservoir	Mammal, Bird, Reptile
Vector	None
Vehicle	Food, Milk, Eggs, Poultry Shellfish, Meat, Vegetables, Fruit, Fecal-oral Breastfeeding, Fly
Incubation Period	12h - 36h (range 6h - 5d)
Diagnostic Tests	Culture (stool, blood, infected tissue). Serology.
Typical Adult Therapy	Stool precautions. Therapy not indicated for uncomplicated diarrhea; if necessary, treat per antibiogram
Typical Pediatric Therapy	As for adult
Clinical Hints	Fever, chills and watery diarrhea 12 to 24 hours after ingestion of eggs, meat, poultry Fecal leucocytes present Fever resolves in 2 days; but diarrhea may persist for up to 7 days (occasionally weeks)
Synonyms	Salmonellosen, Salmonellosi. ICD9: 003 ICD10: A02

Salmonellosis in Haiti

Prevalence surveys

Years	Study Group	%	Notes
2010 - 2013	patients	0.4	Patients with watery diarrhea ¹

Notable outbreaks

Years	Region	Setting	Cases	Pathogen	Population	Notes
1976	Port au Prince	cruise ship	386	multiple pathogens	passengers	Outbreak of infections by <i>Salmonella</i> , <i>Vibrio</i> , <i>Shigella</i> , ETEC and EIEC was reported among passengers of a cruise ship following a visit to Port au Prince ²

References

1. Am J Trop Med Hyg 2013 Oct ;89(4):641-6.
2. Am J Public Health 1983 Jul ;73(7):770-2.

Sarcocystosis

Agent	PARASITE - Protozoa. Coccidea, Eimeriida: <i>Sarcocystis bovihominis</i> or <i>S. suihominis</i>
Reservoir	Cattle, Pig
Vector	None
Vehicle	Meat, Water
Incubation Period	9d - 39d
Diagnostic Tests	Identification of cysts in stool.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Diarrhea and abdominal pain of varying severity Muscle pain and eosinophilia occasionally encountered
Synonyms	Isospora hominis, Kudoa, Sarcocystiasis, Sarcocystis, Sarcosporidiosis. ICD9: 136.5 ICD10: A07.8

Scabies	
Agent	PARASITE - Arthropod. Arachnid, Acarina (Mite), Sarcoptidae: <i>Sarcoptes (Acarus) scabiei</i>
Reservoir	Human
Vector	Mite
Vehicle	Contact, Sexual contact
Incubation Period	3d - 42d
Diagnostic Tests	Identification of mites in skin scrapings.
Typical Adult Therapy	Permethrin 5%. OR Lindane. OR Crotamiton 10% OR Ivermectin 150 to 200 ug/kg PO as single dose
Typical Pediatric Therapy	Permethrin 5%. OR Lindane. OR Crotamiton 10% OR Ivermectin 200 mcg/kg PO (> 15 kg body weight)
Clinical Hints	Intensely pruritic papules, vesicles and burrows Lesions prominent at interdigital webs, wrists, elbows, axillae, perineal region, buttocks and penis Pruritus is most intense at night Severe psoriaform infestation (Norwegian scabies) may affect debilitated patients
Synonyms	Cheyletiella, Cheyletiella infestation, Escabiose, Escabiosis, Histiostomatid mites, Kratze, Mange, Ornithonyssus, Pyemotes, <i>Sarcoptes scabiei</i> , Sarna, Scabbia, Skabies, Tropical rat mite. ICD9: 133 ICD10: B86

Scarlet fever

Agent	BACTERIUM. <i>Streptococcus pyogenes</i> A facultative gram-positive coccus
Reservoir	Human
Vector	None
Vehicle	Secretions, Food, Respiratory or pharyngeal acquisition
Incubation Period	1d - 4d
Diagnostic Tests	Typical clinical features associated with group A streptococcal pharyngitis.
Typical Adult Therapy	Benzathine Penicillin G 1.2 million units IM as single dose
Typical Pediatric Therapy	Benzathine Penicillin G : Weight <14kg: 300,000 units IM Weight 14 to 28kg: 600,000 units IM Weight >28kg: 1.2 million units IM
Clinical Hints	Overt pharyngitis followed within 24 to 48 hrs by a florid desquamative erythematous rash
Synonyms	Escarlatina, Lanhousha, Scarlattina, Scharlach. ICD9: 034.1 ICD10: A38

Schistosomiasis - mansoni

Agent	PARASITE - Platyhelminthes, Trematoda. Strigeida, Schistosomatidae: <i>Schistosoma mansoni</i>
Reservoir	Snail (<i>Biomphalaria</i>), Dog, Cat, Pig, Cattle, Rodent, Horse, Non-human primate
Vector	None
Vehicle	Water (skin contact)
Incubation Period	2w - 6w
Diagnostic Tests	Identification of ova in stool or biopsy specimens. Serology. Antigen detection.
Typical Adult Therapy	Praziquantel 20 mg/kg PO BID X one day OR Oxamniquine 15 mg PO X one dose
Typical Pediatric Therapy	Praziquantel 20 mg/kg PO BID X one day OR Oxamniquine 10 mg PO BID X one day
Clinical Hints	Early urticaria, fever and eosinophilia Later, hepatosplenomegaly and portal hypertension Parasite may survive for decades in human host
Synonyms	Bilharziasis, intestinal, Katayama fever [3], <i>Schistosoma mansoni</i> . ICD9: 120.1 ICD10: B65.1

Although Schistosomiasis - mansoni is not endemic to Haiti, imported, expatriate or other presentations of the disease have been associated with this country.

Schistosomiasis - mansoni in Haiti

Schistosomiasis is not reported in Haiti; however, the snail intermediate *Biomphalaria glabrata*, has been identified in Department du Nord since 1891, and in several additional sites on the north coast since 1977. ¹

References

1. [Trans R Soc Trop Med Hyg 1985 ;79\(4\):455-7.](#)

Septic arthritis

Agent	BACTERIUM or FUNGUS. Gram positive cocci most common; gram negative bacilli, gonococci, mycobacteria , fungi, et al
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Smear and culture of joint fluid. Cytological and chemical analysis of joint fluid also useful.
Typical Adult Therapy	Antimicrobial agent(s) directed at known or likely pathogen
Typical Pediatric Therapy	As for adult
Clinical Hints	Fever (60% to 80%) associated with swelling, erythema and tenderness Usually involves a single joint, most commonly knee; elbow or ankle in child Mean fluid leukocyte count in acute bacterial forms is 50,000 per cu mm
Synonyms	

Septicemia - bacterial

Agent	BACTERIUM. <i>Escherichia coli</i> , <i>Staphylococcus aureus</i> , facultative gram negative bacilli, et al
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Culture of blood and sepsis source.
Typical Adult Therapy	Antimicrobial agent(s) directed at known or likely pathogen
Typical Pediatric Therapy	As for adult
Clinical Hints	Fever, rigors, leukocytosis, tachypnea, mental changes Hypotension, acidosis and bleeding diathesis herald septic shock Additional signs (eg, urinary infection, phlebitis, etc) may point to the source of infection
Synonyms	Sepsis, Septicaemia, Septicemia, Septicemie, Septikemie, Setticeimia. ICD9: 036.2,036.3,038 ICD10: A40,A41

Shigellosis

Agent	BACTERIUM. <i>Shigella sonnei</i> , <i>Shigella flexneri</i> , <i>Shigella boydii</i> or <i>Shigella dysenteriae</i> A facultative gram-negative bacillus
Reservoir	Human, Non-human primate
Vector	None
Vehicle	Fecal-oral, Water, Dairy products, Fomite, Fly, Vegetables
Incubation Period	48h - 72h (range 7h - 1w)
Diagnostic Tests	Stool culture.
Typical Adult Therapy	Stool precautions. Choice of antimicrobial agent based on regional susceptibility patterns. Continue treatment for five days
Typical Pediatric Therapy	As for adult
Clinical Hints	Watery or bloody diarrhea, tenesmus, abdominal pain and headache Colonic hyperemia and abundant fecal leucocytes are present Usually resolves in 3 days, but may persist for up to 14 Reported case fatality rate is 1% - severity and mortality highest with <i>Shigella dysenteriae</i> infection
Synonyms	Bacillaire dysenterie, Bacillary dysentery, Dissenteria batterica, Dysenteria bacillaris, Leptospirenerkrankung, Ruhr, Shigella, Shigellose, Shigelose, Ubertragbare Ruhr. ICD9: 004 ICD10: A03

Shigellosis in Haiti

Prevalence surveys

Years	Study Group	%	Notes
2010 - 2013	patients	0.8	0.8% of patients hospitalized with watery diarrhea (2010 to 2013) ¹

Notable outbreaks

Years	Region	Setting	Cases	Clinical	Pathogen	Notes
1976	Port au Prince	cruise ship	386	diarrhea	multiple pathogens	Outbreak associated with <i>Salmonella</i> , <i>Vibrio</i> , <i>Shigella</i> , ETEC and EIEC ²

References

1. Am J Trop Med Hyg 2013 Oct ;89(4):641-6.
2. Am J Public Health 1983 Jul ;73(7):770-2.

Sinusitis

Agent	BACTERIUM. Various (<i>Haemophilus influenzae</i> & <i>Streptococcus pneumoniae</i> in most acute cases)
Reservoir	Human
Vector	None
Vehicle	None
Incubation Period	Variable
Diagnostic Tests	Imaging techniques. Culture of sinus drainage.
Typical Adult Therapy	Amoxicillin / Clavulanate 2000 / 125 mg BID X 7 days Drainage as indicated Alternatives: Levofloxacin , Clindamycin, Cefuroxime , Cefdinir
Typical Pediatric Therapy	Amoxicillin / Clavulanate 90 / 6.4 mg/kg BID X 7 days Drainage as indicated Alternatives: Clindamycin, Cefuroxime , Cefdinir
Clinical Hints	Sinusitis often follows upper respiration infections Headache, fever and local tenderness are common The precise presentation varies with patient age and anatomic localization
Synonyms	Acute sinusitis, Mastoidite, Mastoiditis, Rhinosinusitis, Sinusite. ICD9: 473.9,383.0,461 ICD10: H70,J01

Sporotrichosis

Agent	FUNGUS. Ascomycota, Euascomycetes, Ophiostomatales: <i>Sporothrix schenckii</i> , <i>S. brasiliensis</i> and <i>S. globosa</i> A dimorphic dematiaceous fungus
Reservoir	Soil, Vegetation, Wood
Vector	None
Vehicle	Trauma, Contact, Air, Respiratory or pharyngeal acquisition
Incubation Period	1w - 3m
Diagnostic Tests	Fungal culture. Serologic tests available in some centers.
Typical Adult Therapy	Itraconazole 100 to 200 mg PO daily X 3 to 6 months. OR Fluconazole 400 mg PO daily X 6 months. OR Potassium iodide 1 to 5 ml PO TID X 3 to 6 months
Typical Pediatric Therapy	Itraconazole 2 mg/kg PO daily X 3 to 6 months. OR Fluconazole 3 mg/kg PO daily X 6 months.
Clinical Hints	Draining nodules which appear along the course of lymphatics Acquired from contact with flowers, thorns, trees or other plant material Eye, brain, testis, bone and other tissues may be involved
Synonyms	Rose gardener's disease, Schenck's disease, <i>Sporothrix brasiliensis</i> , <i>Sporothrix chiensis</i> , <i>Sporothrix globosa</i> , <i>Sporothrix mexicana</i> , <i>Sporothrix schenckii</i> , Sporotrichose. ICD9: 117.1 ICD10: B42

St. Louis encephalitis

Agent	VIRUS - RNA. Flaviviridae, Flavivirus: St. Louis encephalitis virus
Reservoir	Bird, Mammal
Vector	Mosquito (<i>Culex pipiens</i> , <i>Cx. tarsalis</i> , <i>Cx. nigripalpus</i> , <i>Cx. restuans</i> , <i>Cx. salinarius</i> , <i>Aedes</i> , <i>Sabethes</i>)
Vehicle	None
Incubation Period	4d - 21d
Diagnostic Tests	Viral culture (blood, brain tissue, CSF). Serology. Nucleic acid amplification. Biosafety level 2.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Headache, meningitis, encephalitis Sore throat, myalgia, vomiting and photophobia Most cases encountered during late summer Infection resolves in 5 to 10 days Case-fatality rate is 8% (over 25% above age 65).
Synonyms	American encephalitis, Modoc, Rio Bravo, SLE. ICD9: 062.3 ICD10: A83.3

Staphylococcal food poisoning

Agent	BACTERIUM. <i>Staphylococcus aureus</i> exotoxins
Reservoir	Human (nares, hands), Cattle (udder), Dog/Cat (nasopharyngeal)
Vector	None
Vehicle	Food (creams, gravies, sauces)
Incubation Period	2h - 4h (range 30 min - 9h)
Diagnostic Tests	Identification of bacterium in food.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	'Explosive" diarrhea and vomiting Usually no fever No fecal leucocytes Onset 1 to 6 hours after food Resolves within 1 to 2 days Fatality is rarely reported
Synonyms	Staphylococcus aureus food poisoning. ICD9: 005.0 ICD10: A05.0

Staphylococcal scalded skin syndrome

Agent	BACTERIUM. <i>Staphylococcus aureus</i> phage group 2 A facultative gram-positive coccus
Reservoir	Human
Vector	None
Vehicle	Contact, Secretions
Incubation Period	1d - 4d
Diagnostic Tests	Typical clinical features; Recovery of <i>S. aureus</i> from localized wound or blood ; skin biopsy may be helpful
Typical Adult Therapy	Fluid replacement (as for burn) ; Intravenous Nafcillin or Oxacillin , in addition to application of anti-staphylococcal drug to local source infection; Vancomycin if MRSA Clindamycin used to interfere with toxin production.
Typical Pediatric Therapy	Fluid replacement (as for thermal burn) ; Intravenous Nafcillin or Oxacillin , in addition to application of anti-staphylococcal drug to local source infection; Vancomycin if MRSA
Clinical Hints	Acute, generalized exfoliative dermatitis which occurs primarily in infants and young children A pre-existing localized skin infection is present in most cases
Synonyms	Lyell disease, Ritter disease, Ritter von Ritterschein disease, Scalded skin syndrome, SSSS. ICD9: 695.81 ICD10: L00

Streptococcus suis infection

Agent	BACTERIUM. <i>Streptococcus suis</i> I and <i>Streptococcus suis</i> II A facultative gram-positive coccus
Reservoir	Pig
Vector	None
Vehicle	Air, Secretions, Meat, Wound, Contact
Incubation Period	Unknown. Probably hours to few days
Diagnostic Tests	Culture of blood, tissue, body fluids
Typical Adult Therapy	Systemic antibiotic. Usually susceptible in vitro to Penicillin, Amoxicillin , Chloramphenicol and Gentamicin
Typical Pediatric Therapy	Systemic antibiotic
Clinical Hints	Severe multisystem disease, hemorrhagic diatheses, deafness or meningitis Disease appears hours to a few days after contact with pigs or pig products
Synonyms	Streptococcus suis. ICD9: 027.8 ICD10: A48.8

Strongyloidiasis

Agent	PARASITE - Nematoda. Secernentea: <i>Strongyloides stercoralis</i> (<i>Strongyloides fulleborni</i> is occasionally implicated in systemic disease)
Reservoir	Human, Dog, Monkey (for <i>Strongyloides fulleborni</i>)
Vector	None
Vehicle	Skin contact, Soil, Feces, Autoinfection, Sexual contact
Incubation Period	14d - 30d
Diagnostic Tests	Identification of larvae (or ova, for <i>Strongyloides fulleborni</i>) in stool or duodenal aspirate. Serology.
Typical Adult Therapy	Ivermectin 200 micrograms/kg/d PO daily X 2d OR Thiabendazole 25 mg/kg BID (max 3g) X 2d OR Albendazole 400 mg/d X 3d (7 days for hyperinfection syndrome)
Typical Pediatric Therapy	Ivermectin 200 micrograms/kg/d PO daily X 2d OR Thiabendazole 25 mg/kg BID (max 3g) X 2d. OR Albendazole 200 mg/d X 3d (7 days for hyperinfection syndrome)
Clinical Hints	Diarrhea, gluteal or perineal pruritus and rash Eosinophilia often present Widespread dissemination encountered among immune-suppressed patients (case-fatality rate for this complication = 80%)
Synonyms	Anguilluliasis, Anguillulosis, Cochin China gastroenteritis, Diploscapter, Halicephalobus, Larva currens, Leptodera intestinals, Leptodera stercoralis, Lungworm, Metastrongylus, Micronema, Pseudo-rhabdis stercoralis, Rhabditis stercoralis, Rhabdonema intestinale, Rhabdonema stercoralis, Strongyloides fulleborni, Strongyloides stercoralis, Strongyloidose, Threadworm, Turbatrix. ICD9: 127.2 ICD10: B78

Strongyloidiasis in Haiti

Prevalence surveys

Years	Study Group	%	Notes
1999*	children	1.2	1.2% of school children (1999 publication) ¹
2002	children	0.2	0.2% of school children (2002) ²

* indicates publication year (not necessarily year of survey)

References

1. [Am J Trop Med Hyg 1999 Mar ;60\(3\):479-86.](#)
2. [Bull Soc Pathol Exot 2005 Jun ;98\(2\):127-32.](#)

Subdural empyema

Agent	BACTERIUM. <i>Haemophilus influenzae</i> , oral anaerobes, streptococci, et al
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Imaging techniques (CT scan, etc).
Typical Adult Therapy	Antimicrobial agent(s) directed at known or likely pathogen
Typical Pediatric Therapy	As for adult
Clinical Hints	Fever, severe headache, vomiting, signs of meningeal irritation and increased cerebrospinal fluid pressure May follow head trauma, meningitis, otitis or sinusitis Case-fatality rates vary from 15% (patient alert) to 60% (comatose)
Synonyms	

Suppurative parotitis

Agent	BACTERIUM. Most commonly <i>Staphylococcus aureus</i>
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Unknown
Diagnostic Tests	Clinical features (local swelling and purulent discharge from salivary ducts). Stain and culture of discharge.
Typical Adult Therapy	Surgical drainage and aggressive parenteral antistaphylococcal therapy
Typical Pediatric Therapy	As for adult
Clinical Hints	Consider in patient with unexplained fever in the setting of malnutrition, dehydration and obtundation Local swelling and discharge of pus from salivary duct
Synonyms	Parotitis, bacterial. ICD9: 527.2 ICD10: K11.3

Syphilis

Agent	BACTERIUM. <i>Treponema pallidum</i> subsp. <i>pallidum</i> A microaerophilic gram-negative spirochete
Reservoir	Human
Vector	None
Vehicle	Sexual contact, Secretions, Respiratory or pharyngeal acquisition
Incubation Period	2w - 4w (range 10d - >8w)
Diagnostic Tests	Dark field microscopy (chancres). VDRL confirmed by antitreponemal test (FTA, MHTP). Nucleic acid amplification.
Typical Adult Therapy	Primary, secondary or early (< 1 year) latent: Benzathine Penicillin G 2.4 million units IM Other stages: Repeat dosage at one and two weeks Alternatives: Tetracycline , Ceftriaxone
Typical Pediatric Therapy	Primary, secondary or early (< 1 year) latent: Benzathine Penicillin G : Weight <14 kg: 600,000u IM Weight 14 to 28 kg: 1,200,000u IM Other stages: Repeat dosage at one and two weeks
Clinical Hints	Firm, painless chancre (primary syphilis) Fever, papulosquamous rash and multisystem infection (secondary syphilis) Late necrotic lesions of brain, aorta, bone or other organs (tertiary syphilis)
Synonyms	Canton rash, Chinese ulcer, Christian disease, French disease, German sickness, Harde sjanker, Lues, Neopolitan itch, Polish sickness, Sifilide, Sifilis, Spanish pockes, Syphilis, Treponema pallidum. ICD9: 090,091,092,093,094,095,096,097 ICD10: A50,A51,A52,A53

Syphilis in Haiti

Seroprevalence surveys

Years	Region	Study Group	%	Notes
2014 - 2015	Port-Au-Prince	adolescents	2.6	2.60% of adolescents in Port-au-Prince (2014 to 2015) ¹
1999 - 2000		blood donors	0.8	0.8% of blood donors during 1999 to 2000
1990	Port-Au-Prince	general population	3-6	3% to 6% of low risk urban dwellers (Port-au-Prince) in 1990
1991	Port Au Prince	general population	6	6% to 8% of low risk urban dwellers (Port-au-Prince) in 1991
2013*		patients	3.5	3.5% of adult female outpatients with gynecological symptoms (2013 publication) ²
1992 - 1993		pregnant women	4-12	4% of 12% of pregnant women during 1992 to 1993
1995*	Cite Soleil	pregnant women	11	11% of pregnant women in Cite Soleil (1995 publication) ³
1996	Artibonite Valley	pregnant women	5.7-6.8	5.7% to 6.8% of pregnant women in the Artibonite Valley (1996) ^{4 5}
2000		pregnant women	5.6	5.6% of pregnant women in 2000.
2004 - 2006	Jeremie	pregnant women	7.6	7.6% of pregnant women in rural villages in the area of Jeremie (2004 to 2006) ⁶
2004		pregnant women	4.2	4.2% of pregnant women (PAHO statistic) (2004)
2009*		pregnant women	7.6	7.6% of pregnant women (2009 publication) ⁷

Years	Region	Study Group	%	Notes
2008*	multiple locations	sex workers	13.4	13.4% of clients of CSW in Gonaives and St. Marc (2008 publication) ⁸
1992*		women	21	21% of HIV-positive women (1992 publication) ⁹
2012	Southwest Region	women	7.7	7.7% of rural women attending clinics (southwestern Haiti, 2012) ¹⁰

* indicates publication year (not necessarily year of survey)

References

1. AIDS Patient Care STDS 2016 Aug ;30(8):371-8.
2. Int J STD AIDS 2014 Aug ;25(9):669-75.
3. J Infect Dis 1995 Sep ;172(3):764-71.
4. Int J Infect Dis 1998 Jan-Mar;2(3):127-31.
5. Am J Trop Med Hyg 2000 Apr ;62(4):496-501.
6. Rev Panam Salud Publica 2009 Sep ;26(3):197-202.
7. Rev Panam Salud Publica 2009 Sep ;26(3):197-202.
8. Sex Transm Dis 2008 Oct ;35(10):849-55.
9. J Infect Dis 1992 Aug ;166(2):418-20.
10. Am J Trop Med Hyg 2014 Nov ;91(5):881-6.

Taeniasis

Agent	PARASITE - Platyhelminthes, Cestoda. Cyclophyllidea, Taeniidae: <i>Taenia solium</i> & <i>T. saginata</i> (other species occasionally encountered)
Reservoir	Cattle, Pig
Vector	None
Vehicle	Meat
Incubation Period	6w - 14w
Diagnostic Tests	Identification of ova or proglottids in feces.
Typical Adult Therapy	Praziquantel 10 mg/kg PO as single dose OR Niclosamide 2 g PO once
Typical Pediatric Therapy	Praziquantel 10 mg/kg PO as single dose OR Niclosamide 50 mg/kg PO once
Clinical Hints	Vomiting and weight loss Often symptomatic or first recognized due to passage of proglottids Parasite may survive for over 25 years in the human intestine
Synonyms	Bandwurm [Taenia], Drepanidotaenia, Gordiid worm, Hair snake, Mesocestoides, Raillietina, Taenia asiatica, Taenia longihamatus, Taenia saginata, Taenia saginata asiatica, Taenia solium, Taenia taeniaformis, Taeniarhynchiasis, Tapeworm (pork or beef), Tenia. ICD9: 123.0,123.2 ICD10: B68

Taeniasis in Haiti

Prevalence surveys

Years	Study Group	%	Notes
2002	children	0.3	0.3% of school children (2002) ¹

References

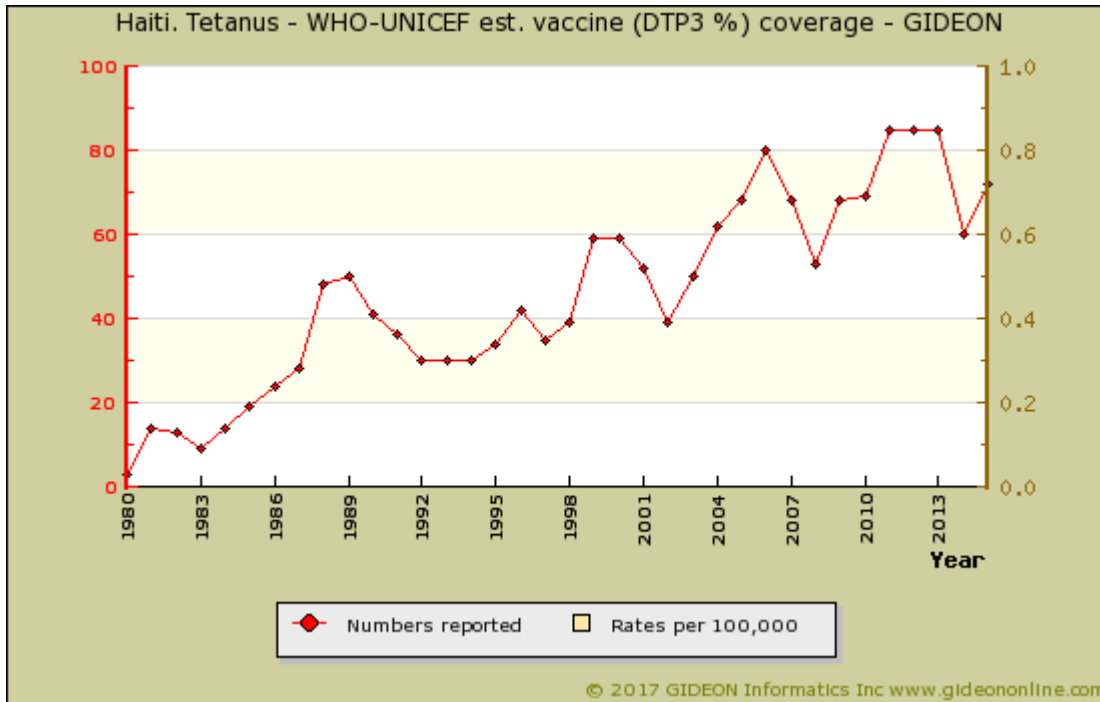
1. Bull Soc Pathol Exot 2005 Jun ;98(2):127-32.

Tetanus	
Agent	BACTERIUM. <i>Clostridium tetani</i> An anaerobic gram-positive bacillus
Reservoir	Animal feces, Soil
Vector	None
Vehicle	Trauma
Incubation Period	6d - 8d (range 1d - 90d)
Diagnostic Tests	Isolation of <i>C. tetani</i> from wound is rarely helpful. Serology (specimen taken before administration of antitoxin).
Typical Adult Therapy	Human antitoxin (see Vaccine module). Metronidazole (2 g daily) or Penicillin G (24 million u daily) or Doxycycline (200 mg daily). Diazepam (30 to 240 mg daily). Tracheostomy, hyperalimentation
Typical Pediatric Therapy	Human antitoxin (see Vaccine module). Metronidazole (30 mg/kg daily); or Penicillin G (300,000 units/kilo daily). Diazepam. Tracheostomy, hyperalimentation
Vaccines	DT vaccine DTaP vaccine DTP vaccine Td vaccine Tetanus immune globulin Tetanus vaccine
Clinical Hints	Trismus, facial spasm, opisthotonus, tachycardia and recurrent tonic spasms of skeletal muscle Sensorium is clear Disease may persist for 4 to 6 weeks Case fatality rates of 10% to 40% are reported
Synonyms	Lockjaw, Starrkrampf, Stelkrampf, Tetano, Tetanos. ICD9: 037,771.3 ICD10: A33,A34,A35

Tetanus in Haiti

Vaccine Schedule:

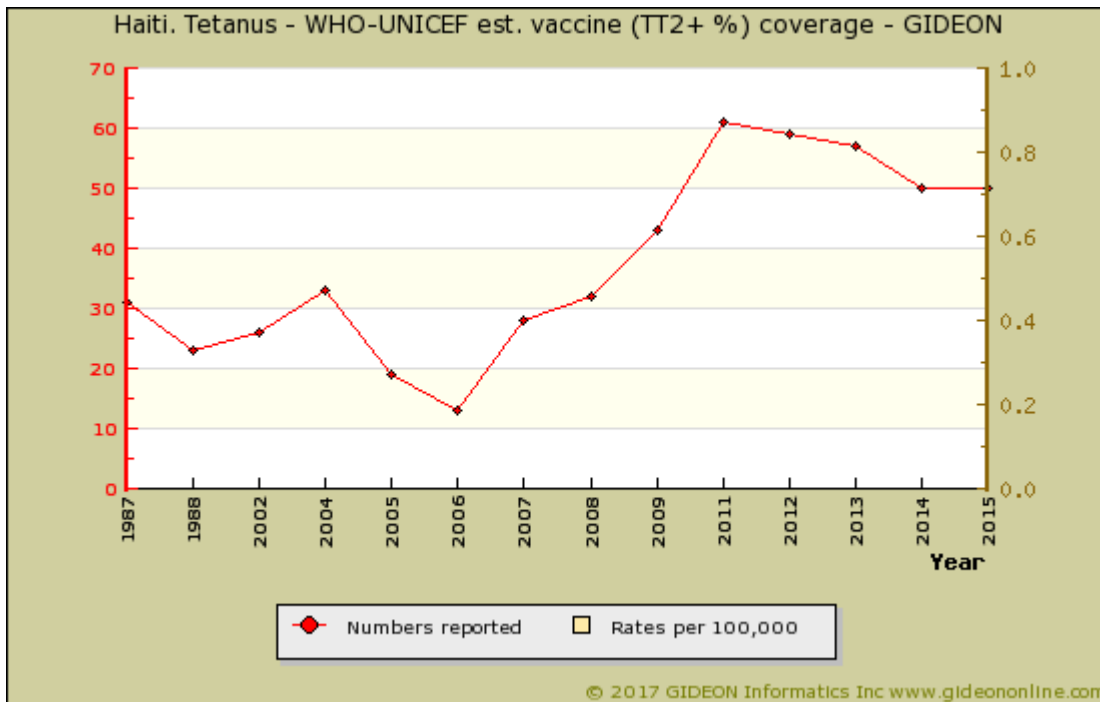
BCG - birth
DTwPHibHepB - 6,10,14 weeks
HepB - >= 12 years
IPV - 6 weeks
MMR - 12, 24 months
MR - 9 months
OPV - 6,10,14 weeks
Rotavirus - 6,10 weeks
Td - 1st contact; +4 weeks; +6 months; +1, +1 years pregnant women



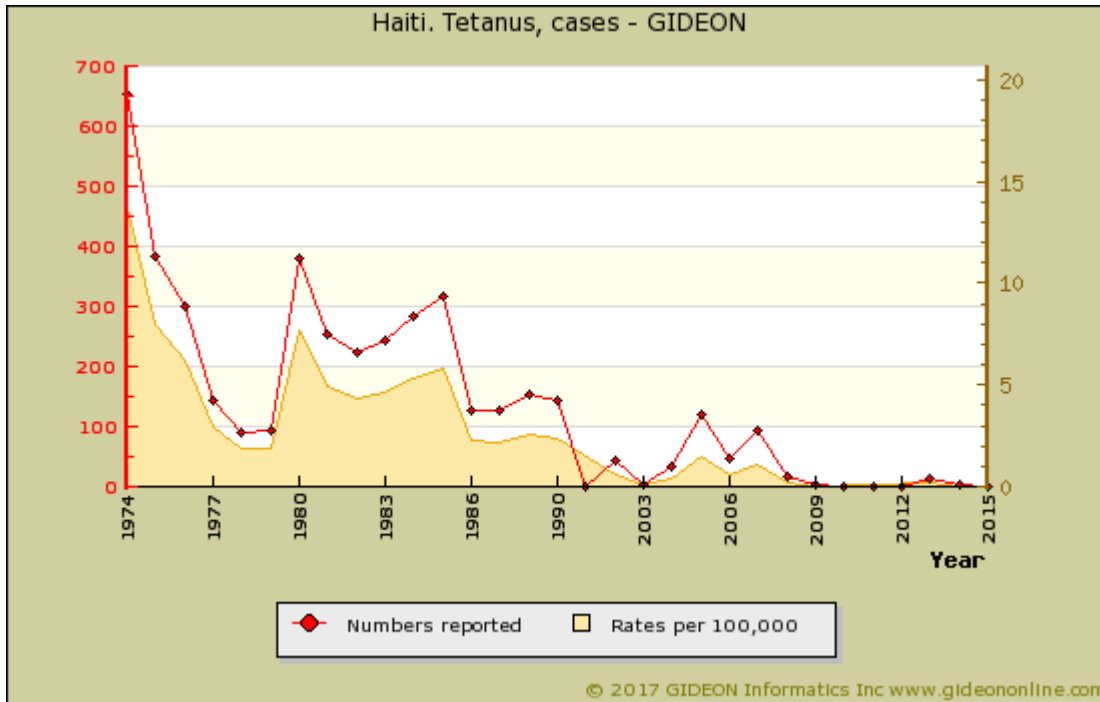
Graph: Haiti. Tetanus - WHO-UNICEF est. vaccine (DTP3 %) coverage

Individual years:

2009 - A survey found that 92.0% of children ages 12 to 23 months had been immunized (DPT-1). ¹



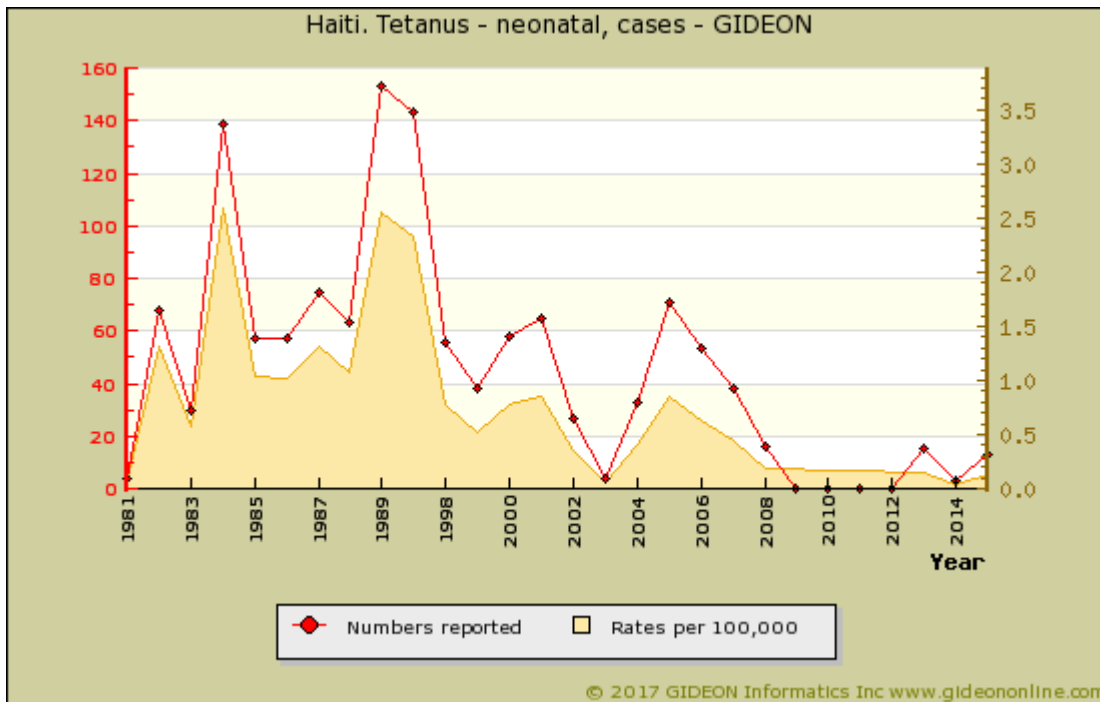
Graph: Haiti. Tetanus - WHO-UNICEF est. vaccine (TT2+ %) coverage



Graph: Haiti. Tetanus, cases

Notes:

1. 1983 - Haiti had the highest rate of tetanus for the Caribbean.
2. 985 cases (22% fatal) were reported during 1958 to 1972 (excluding neonatal tetanus).



Graph: Haiti. Tetanus - neonatal, cases

References

1. [Vaccine 2012 Feb 21;30\(9\):1746-51.](#)

Thelaziasis

Agent	PARASITE - Nematoda. Secernentea: <i>Thelazia callipaeda</i> (rarely <i>T. californiensis</i>)
Reservoir	Dog, Rabbit, Deer, Cat
Vector	Fly (<i>Musca</i> and <i>Fannia</i> species)
Vehicle	None
Incubation Period	not known
Diagnostic Tests	Identification of parasite.
Typical Adult Therapy	Extraction of parasite
Typical Pediatric Therapy	As for adult
Clinical Hints	Conjunctivitis and lacrimation associated with the sensation of an ocular foreign body
Synonyms	Conjunctival spirurosis, Oriental eye worm, Rictularia, <i>Thelazia californiensis</i> , <i>Thelazia callipaeda</i> . ICD9: 372.15 ICD10: B83.8

Toxic shock syndrome

Agent	BACTERIUM. <i>Staphylococcus aureus</i> , <i>Streptococcus pyogenes</i> , et al - (toxins) Facultative gram-positive cocci
Reservoir	Human
Vector	None
Vehicle	Tampon (Bandage, etc)
Incubation Period	Unknown
Diagnostic Tests	Isolation of toxigenic <i>Staphylococcus aureus</i> . Toxin assay available in specialized laboratories.
Typical Adult Therapy	The role of topical (eg, vaginal) and systemic antistaphylococcal antibiotics is unclear; however, most authorities suggest intravenous administration of an anti-staphylococcal (anti-MRSA, anti-streptococcal as indicated) antibiotic.
Typical Pediatric Therapy	As for adult
Clinical Hints	Fever (>38.9), hypotension (<90 mm Hg) and dermal erythema with desquamation Respiratory, cardiac or other disease present Most cases associated with "super absorbent" tampon use or staphylococcal wound infection Case-fatality rates of 5% to 10% are reported
Synonyms	Streptococcal toxic shock syndrome, TSS. ICD9: 040.82 ICD10: A48.3

Toxocariasis

Agent	PARASITE - Nematoda. Secernentea: <i>Toxocara cati</i> and <i>T. canis</i>
Reservoir	Cat, Dog, Mouse
Vector	None
Vehicle	Soil ingestion
Incubation Period	1w - 2y
Diagnostic Tests	Identification of larvae in tissue. Serology.
Typical Adult Therapy	Albendazole 400 mg BID X 5d. OR Mebendazole 100 to 200 mg PO bid X 5 days Add corticosteroids if eye, brain, heart or lung involvement is present.
Typical Pediatric Therapy	As for adult
Clinical Hints	Cough, myalgia, seizures and urticaria Hepatomegaly, pulmonary infiltrates or retrobulbar lesions may be present Marked eosinophilia is common Symptoms resolve after several weeks, but eosinophilia may persist for years
Synonyms	Ascaris suum, Toxocara canis, Toxocara cati, Toxocarose, Toxocarosis, Visceral larva migrans. ICD9: 128.0 ICD10: B83.0

Toxoplasmosis

Agent	PARASITE - Protozoa. Apicomplexa, Eimeriida: <i>Toxoplasma gondii</i>
Reservoir	Rodent, Pig, Cattle, Sheep, Chicken, Bird, Cat, Marsupial
Vector	None
Vehicle	Transplacental, Meat, Soil ingestion, Water , Milk, Filth flies
Incubation Period	1w - 3w (range 5d - 21d)
Diagnostic Tests	Serology. Cultivation or identification of organisms per specialized laboratories. Nucleic acid amplification.
Typical Adult Therapy	Pyrimethamine 25 mg/d + Sulfonamides 100 mg/kg (max 6g)/d X 4w - give with folic acid. Alternatives: Clindamycin , Azithromycin , Dapsone . Spiramycin (in pregnancy) 4g/d X 4w
Typical Pediatric Therapy	Pyrimethamine 2 mg/kg/d X 3d, then 1 mg/kg/d + Sulfonamides 100 mg/kg/d X 4w - give with folic acid. Alternatives: Clindamycin , Azithromycin , Dapsone .
Clinical Hints	Fever, lymphadenopathy, hepatic dysfunction or chorioretinitis Cerebral cysts often encountered in patients with AIDS Congenital hydrocephalus associated with mental retardation, seizures or blindness.
Synonyms	Toxoplasma, Toxoplasrose, Toxoplasmosi. ICD9: 130 ICD10: B58

Toxoplasmosis in Haiti

Seroprevalence surveys

Years	Region	Study Group	%	Notes
1986*	Southern Region	general population	5.9	5.9% of individuals in the rural southern region (1986 publication) ¹
2015*		general population	28.2	28.2% of individuals in a coastal region (2015 publication) ²

* indicates publication year (not necessarily year of survey)

References

1. Bull Soc Pathol Exot Filiales 1986 ;79(5 Pt 2):721-9.
2. Epidemiol Infect 2015 Feb ;143(3):618-30.

Trachoma

Agent	BACTERIUM. <i>Chlamydia trachomatis</i> , type A
Reservoir	Human
Vector	Fly
Vehicle	Secretions, Contact, Fly, Fomite
Incubation Period	5d - 12d
Diagnostic Tests	Culture or direct immunofluorescence of secretions. Serology. Nucleic acid amplification.
Typical Adult Therapy	Azithromycin 1 g po as single dose. OR Doxycycline 100 mg/day PO X 21 days. Also administer topical Tetracycline
Typical Pediatric Therapy	Azithromycin 20 mg/kg as single dose. Also administer topical Tetracycline
Clinical Hints	Keratoconjunctivitis with palpebral scarring and pannus formation 0.5% of infections result in blindness
Synonyms	Egyptian ophthalmia, Granular conjunctivitis, Kornerkrankheit, Trachom, Tracoma. ICD9: 076 ICD10: A71

Trichinosis

Agent	PARASITE - Nematoda. <i>Trichinella spiralis</i> (occasionally <i>T. nativa</i> , <i>T. britovi</i> , <i>T. pseudospiralis</i> , <i>T. nelsoni</i> , et al)
Reservoir	Wild carnivore, Omnivore, Marine mammal
Vector	None
Vehicle	Meat
Incubation Period	10d - 20d (range 1w - 10w)
Diagnostic Tests	Identification of larvae in tissue. Serology.
Typical Adult Therapy	Albendazole 400 mg PO BID X 14d. OR Mebendazole 200 to 400 mg PO tid X 3 days, then 400 to 500 mg PO. tid X 10 days. Give with prednisone 50 mg PO daily X 3 to 5 days (then 'taper' dosage)
Typical Pediatric Therapy	Albendazole 7 mg/kg BID X 14 d. OR Mebendazole 200 to 400 mg PO tid X 3 days, then 400 to 500 mg PO. tid X 10 days. Give with prednisone 50 mg PO daily X 3 to 5 days (then 'taper' dosage)
Clinical Hints	Early diarrhea and vomiting Subsequent myalgia, facial edema and eosinophilia Onset 1 to 4 weeks following ingestion of undercooked meat (usually pork) Symptoms may persist for two months Reported case-fatality rate for symptomatic infection is 2%
Synonyms	Haycocknema, Trichinellose, Trichinellosis, Trichinose, Trikinose, Triquiniase, Triquonosis. ICD9: 124 ICD10: B75

Trichinosis in Haiti

Trichinosis, cases: None reported between 1998 and 1999

Trichomoniasis

Agent	PARASITE - Protozoa. Metamonada, Parabasala, Trichomonadea. Flagellate: <i>Trichomonas vaginalis</i>
Reservoir	Human
Vector	None
Vehicle	Sexual contact
Incubation Period	4d - 28d
Diagnostic Tests	Microscopy of vaginal discharge. ELISA, culture, antigen detection tests available. Nucleic acid amplification.
Typical Adult Therapy	Metronidazole or Tinidazole 2g PO as single dose to both sexual partners
Typical Pediatric Therapy	Metronidazole 5 mg/kg PO TID X 7d. OR Tinidazole 50 mg/kg PO X 1 (maximum 2 grams)
Clinical Hints	Vaginal pruritus, erythema and thin or frothy discharge Mild urethritis may be present in male or female
Synonyms	Pentatrichomonas, Tetratrichomonas, Trichomonaden, Trichomonas, Trichomonas vaginalis, Tricomoniasis, Tritrichomonas. ICD9: 131 ICD10: A59

Trichomoniasis in Haiti

Prevalence surveys

Years	Region	Study Group	%	Notes
1995*	Cite Soleil	general population	35	35% in Cite Soleil (1995 publication) ¹
2013*		patients	0	0% of microscopic examinations among adult female outpatients with gynecological symptoms (2013 publication) ²
2014*		patients - STD	13.7	13.7% of rural men with urethritis (2014 publication) ³
1996	Artibonite Valley	pregnant women	25.4	25.4% of pregnant women in the Artibonite Valley (1996) ⁴
2012	Southwestern Region	women	13.5-19.9	13.5% to 19.9% of rural women attending clinics (southwestern Haiti, 2012) ⁵

* indicates publication year (not necessarily year of survey)

References

1. [J Infect Dis 1995 Sep ;172\(3\):764-71.](#)
2. [Int J STD AIDS 2014 Aug ;25\(9\):669-75.](#)
3. [Int J STD AIDS 2015 Sep ;26\(10\):710-5.](#)
4. [Am J Trop Med Hyg 2000 Apr ;62\(4\):496-501.](#)
5. [Am J Trop Med Hyg 2014 Nov ;91\(5\):881-6.](#)

Trichuriasis

Agent	PARASITE - Nematoda. <i>Trichuris trichiura</i>
Reservoir	Human
Vector	None
Vehicle	Soil ingestion, Sexual contact, Flies
Incubation Period	2m - 2y
Diagnostic Tests	Stool microscopy or visualization of adult worms (adults are approximately 3 cm long).
Typical Adult Therapy	Mebendazole 100 mg PO BID X 3d. OR Albendazole 400 mg PO daily X 3 to 7 days OR Ivermectin 200 mg/kg PO daily X 3 days
Typical Pediatric Therapy	Albendazole 200 mg PO single dose OR Mebendazole 100 mg BID X 3 d (> age 2). OR Ivermectin 200 mg/kg PO daily X 3 days
Clinical Hints	Abdominal pain, bloody diarrhea Rectal prolapse or intestinal obstruction are occasionally encountered The parasite may survive for as long as five years in the human host
Synonyms	Trichocephaliasis, Trichuris trichiura, Tricuriasis, Whipworm. ICD9: 127.3 ICD10: B79

Trichuriasis in Haiti

Prevalence surveys

Years	Study Group	%	Notes
1999*	children	42.2	42.2% of school children (1999 publication) ¹
2002	children	7.3	7.3% of school children (2002) ²

* indicates publication year (not necessarily year of survey)

References

1. Am J Trop Med Hyg 1999 Mar ;60(3):479-86.
2. Bull Soc Pathol Exot 2005 Jun ;98(2):127-32.

Tropical phagedenic ulcer

Agent	BACTERIUM Mixed infection by <i>Fusobacterium</i> species and <i>Borrelia</i>
Reservoir	Human
Vector	None
Vehicle	Direct inoculation (skin trauma)
Incubation Period	Unknown
Diagnostic Tests	Wound smear suggestive of fusobacterial infection.
Typical Adult Therapy	Systemic Penicillin G . Excision/debridement as necessary
Typical Pediatric Therapy	As for adult
Clinical Hints	A deep, painful, foul-smelling ulcer (usually of the leg) with undermined edges May be complicated by secondary infection
Synonyms	Acute phagadenic ulcer, Aden ulcer, Delagoa sore, Malabar ulcer, Naga sore, Rhodesian sore, Tropical sloughing phagedaena. ICD9: 682.7 ICD10: A69.8,L97

Tropical pulmonary eosinophilia

Agent	UNKNOWN Possibly related to filarial infection
Reservoir	Unknown
Vector	Unknown
Vehicle	Unknown
Incubation Period	Unknown
Diagnostic Tests	Antifilarial antibodies may be present. Response to therapeutic trial.
Typical Adult Therapy	Diethylcarbamazine 2 mg/kg PO TID X 21d
Typical Pediatric Therapy	As for adult
Clinical Hints	Chronic cough, wheezing, dyspnea, reticular-nodular pulmonary infiltrates and eosinophilia (over 3,000 per cu. mm.) Acquired in countries known to be endemic for filariasis
Synonyms	

Tropical sprue

Agent	UNKNOWN
Reservoir	Unknown
Vector	None
Vehicle	Unknown
Incubation Period	Unknown - probably at least 6 months
Diagnostic Tests	Typical functional, roentgenographic and histological changes in bowel. Prompt response to therapy.
Typical Adult Therapy	Tetracycline 250 mg PO QID + folate 5 mg PO daily. Administer for 6 months
Typical Pediatric Therapy	Nonabsorbable sulfa drug + folate. Administer for 6 months
Clinical Hints	Chronic (months to years) diarrhea, bloating, weight loss and anemia Occasional early fever, glossitis, neuropathy, dermatitis, nausea Malabsorption of fats, protein and minerals
Synonyms	Hill diarrhea, Postinfectious tropical malabsorption. ICD9: 579.1 ICD10: K90.1

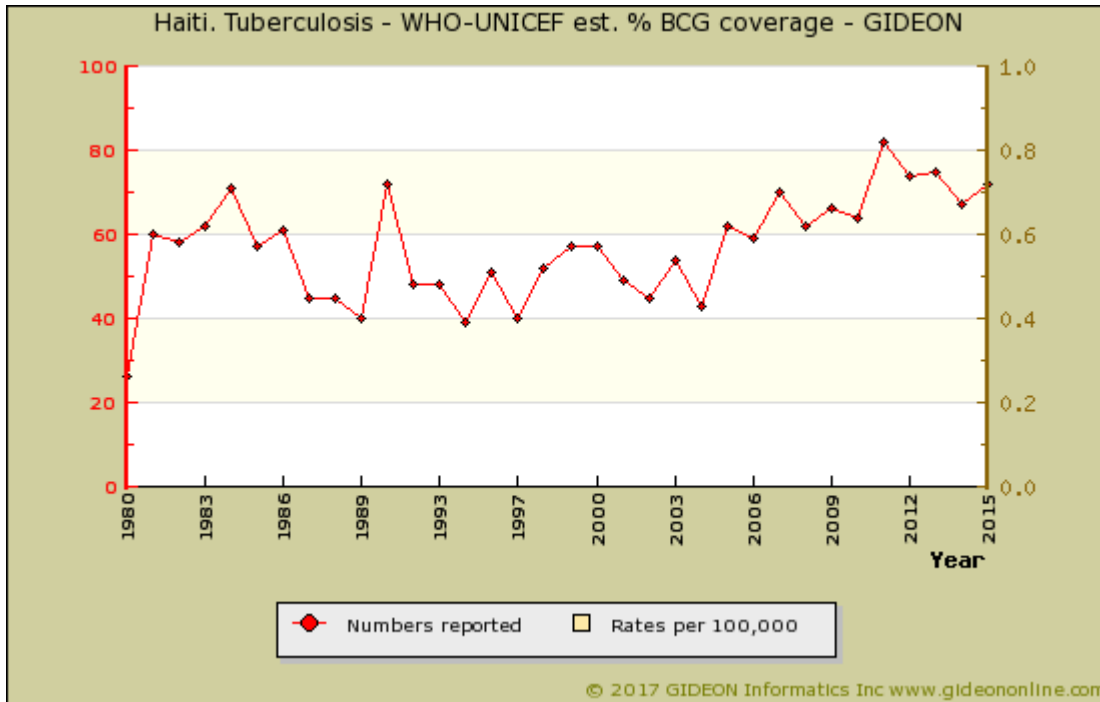
Tuberculosis

Agent	BACTERIUM. Actinomycetes, <i>Mycobacterium tuberculosis</i> An aerobic acid-fast bacillus
Reservoir	Human, Cattle
Vector	None
Vehicle	Air, Dairy products, Respiratory or pharyngeal acquisition
Incubation Period	4w - 12w (primary infection)
Diagnostic Tests	Microscopy. Culture. Nucleic acid amplification. Inform laboratory when this diagnosis is suspected.
Typical Adult Therapy	Respiratory isolation. Typical pulmonary infection is treated with 6 months of Isoniazid , Rifampin & Pyrazinamide
Typical Pediatric Therapy	As for adult
Vaccine	BCG vaccine
Clinical Hints	Cough, "night sweats" and weight loss Often presents as prolonged fever (FUO) or infection of bone, meninges, kidneys or other organs Most infections represent reactivation of old foci in lungs, brain, bone, kidneys etc
Synonyms	Consumption, Mycobacterium africanum, Mycobacterium bovis, Mycobacterium caprae, Mycobacterium orygis, Mycobacterium tuberculosis, Oryx bacillus, Phthisis, TB, TB meningitis, Tuberculose, Tuberculose miliar, Tuberculosi, Tuberculous meningitis, Tuberkulose, White plague. ICD9: 010,012,013,014,015,016,017,018 ICD10: A15,A16,A17,A18,A19

Tuberculosis in Haiti

Vaccine Schedule:

BCG - birth
DTwPHibHepB - 6,10,14 weeks
HepB - >= 12 years
IPV - 6 weeks
MMR - 12, 24 months
MR - 9 months
OPV - 6,10,14 weeks
Rotavirus - 6,10 weeks
Td - 1st contact; +4 weeks; +6 months; +1, +1 years pregnant women

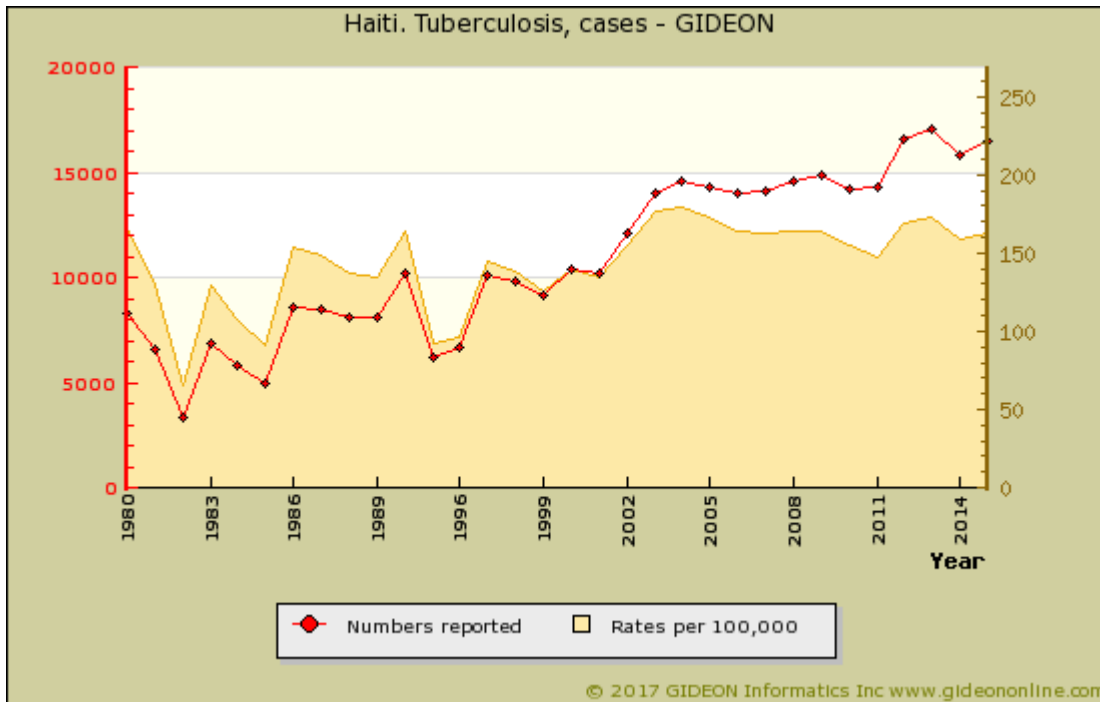


Graph: Haiti. Tuberculosis - WHO-UNICEF est. % BCG coverage

Notes:

Individual years:

2009 - A survey found that 87.3% of children ages 12 to 23 months had been immunized. ¹



Graph: Haiti. Tuberculosis, cases

Notes:

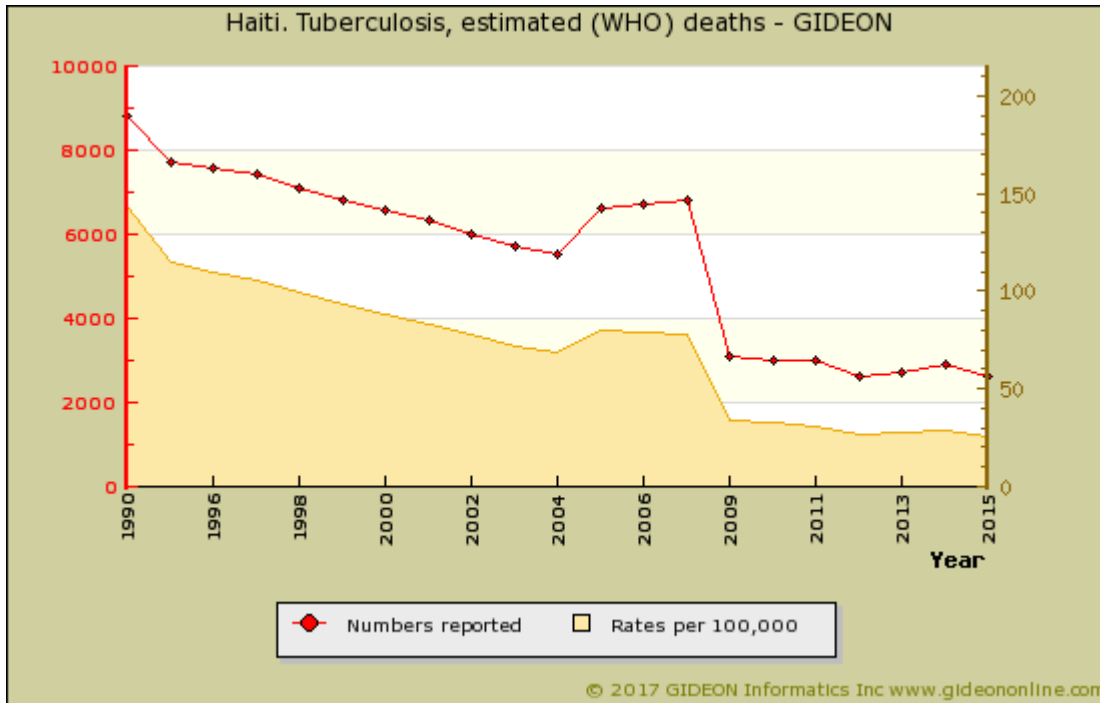
Individual years:

2007 - Also see reference ²

Prevalence surveys

Years	Study Group	%	Notes
2015*	general population	1.165	1.165% in an urban slum (undiagnosed tuberculosis, 2015 publication) ³
2015	general population	0.23	0.230% of the general population ⁴
2015	refugees	0.693	0.693% in a displaced (by earthquake) persons camp

* indicates publication year (not necessarily year of survey)



Graph: Haiti. Tuberculosis, estimated (WHO) deaths

Tuberculosis and HIV infection:

- 19% of patients are HIV-positive (1992 to 1993); 50% of tuberculosis patients have AIDS (1991).
- The incidence of tuberculosis among persons living with HIV is 7.5% per year (1986 to 1989). ⁵
- 17% of HIV-infected patients are PPD-positive.

In 2007, 1.8% of cases were caused by multi-drug resistant *Mycobacterium tuberculosis*.

Notable outbreaks

Years	Region	Cases	Pathogen	Notes
2008 - 2012	Port-au-Prince	8	MDR TB	⁶

References

1. [Vaccine 2012 Feb 21;30\(9\):1746-51.](#)
2. [ProMED <promedmail.org> archive: 20100207.0409](#)
3. [Bull World Health Organ 2015 Jul 1;93\(7\):498-502.](#)
4. [Bull World Health Organ 2015 Jul 1;93\(7\):498-502.](#)
5. [Lancet 1993 Jul 31;342\(8866\):268-72.](#)
6. [PLoS One 2015 ;10\(6\):e0129207.](#)

Tungiasis

Agent	PARASITE - Insecta Siphonaptera (Flea), Tungidae: <i>Tunga penetrans</i> and <i>T. trimamillata</i> ("sand fleas")
Reservoir	Pig, Dog, Various other mammals
Vector	None
Vehicle	Contact
Incubation Period	8d - 12d
Diagnostic Tests	Identification of parasite.
Typical Adult Therapy	Extraction of parasite Ivermectin has been advocated in some publications.
Typical Pediatric Therapy	As for adult
Clinical Hints	Painful papule or nodule, usually on the feet - may be multiple Onset 1 to 2 weeks after walking on dry soil Secondary infections and tetanus are reported
Synonyms	Bicho de pe, Chica, Chigger, Chigoe flea, Jigger, Nigua, Puce-chique, Tu, <i>Tunga penetrans</i> , <i>Tunga trimamillata</i> , Tungosis. ICD9: 134.1 ICD10: B88.1

Tungiasis in Haiti

Notable outbreaks

Years	Notes
2004	Outbreak reported - additional details unavailable. ¹

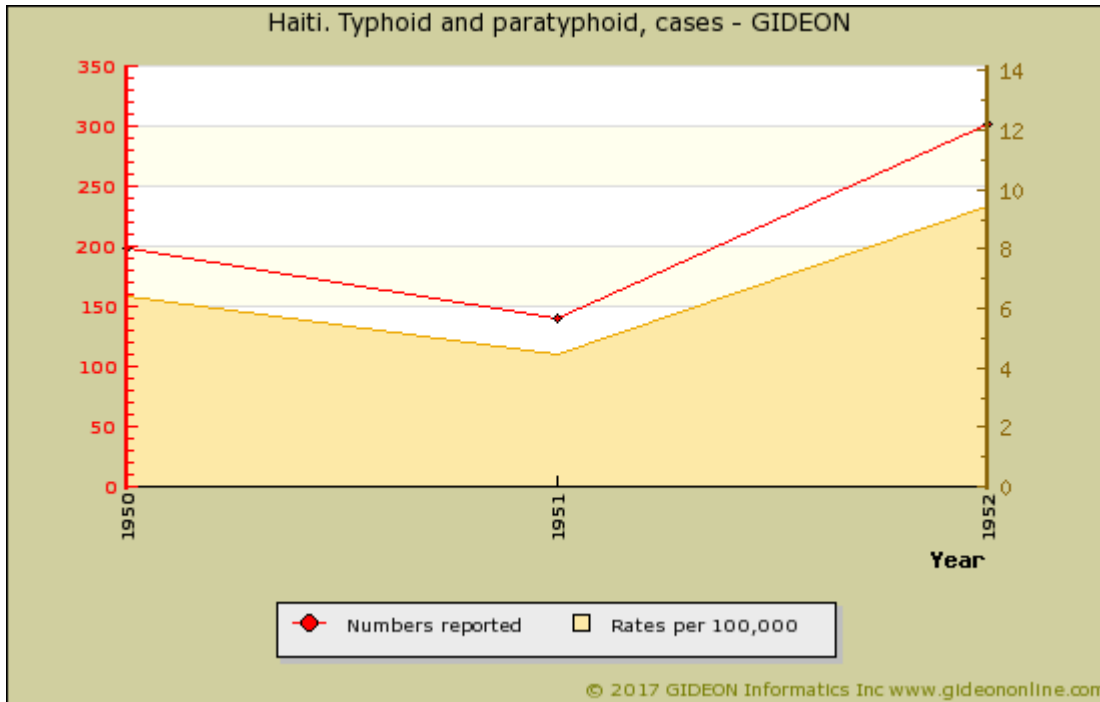
References

1. [Trans R Soc Trop Med Hyg 2006 Oct ;100\(10\):970-4.](#)

Typhoid and enteric fever

Agent	BACTERIUM. <i>Salmonella</i> serotype Typhi (certain other <i>Salmonella</i> species cause 'paratyphoid' fever) A facultative gram-negative bacillus
Reservoir	Human
Vector	None
Vehicle	Fecal-oral, Food, Fly, Water
Incubation Period	15d - 21d (range 5d - 34d)
Diagnostic Tests	Culture (blood, urine, sputum culture). Stool usually negative unless late, untreated infection. Serology.
Typical Adult Therapy	Ceftriaxone 2 g IV q12h to q 24h X 5 to 7d. OR Azithromycin 1 gram PO on day 1; then 500 mg days 2 to 7. Fluoroquinolones resistance common - not recommended for empiric therapy. Add corticosteroids if evidence of shock or decreased mental status.
Typical Pediatric Therapy	Ceftriaxone 50 to 80 mg/kg IV daily X 5 to 7d. OR Azithromycin 15 mg/kg PO on day 1; then 7.5 mg/kg on days 2 to 7.
Vaccines	Typhoid - injectable vaccine Typhoid - oral vaccine
Clinical Hints	Transient diarrhea followed by fever, splenomegaly and obtundation Rose spots (during second week of illness), leukopenia and relative bradycardia are common Intestinal perforation or hemorrhage may occur in third to fourth week of illness Case-fatality rates are 0.8% (treated) to 15% (untreated)
Synonyms	Abdominal typhus, Abdominaltyphus, Buiktyphus, Enteric fever, Febbre tifoide, Febbre tifoidea, Fiebre tifoidea, Paratifoidea, Paratyfus, Paratyphoid, <i>Salmonella</i> serotype Typhi, Tyfoïd, Typhoid, Typhoïde. ICD9: 002 ICD10: A01

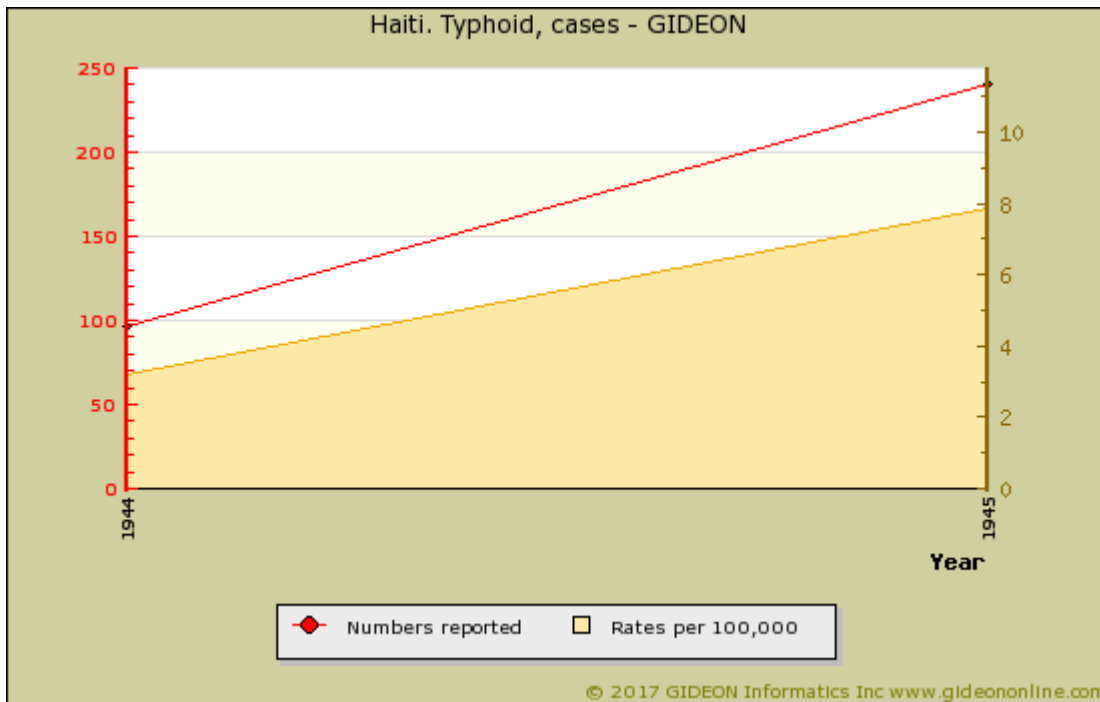
Typhoid and enteric fever in Haiti



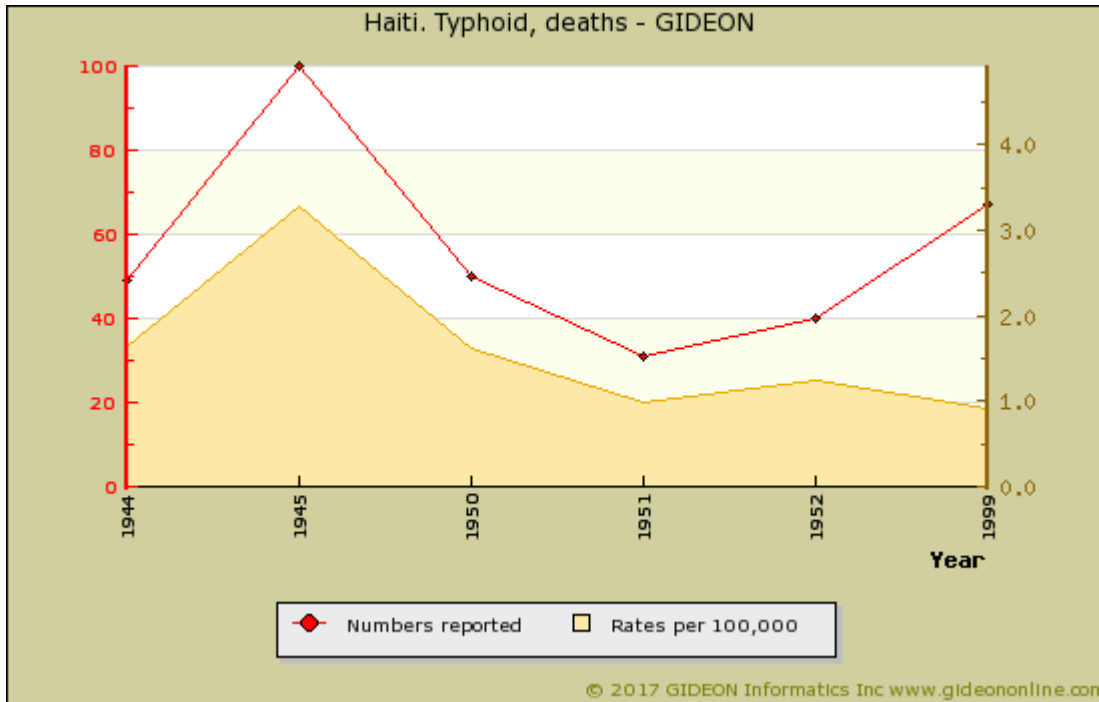
Graph: Haiti. Typhoid and paratyphoid, cases

Notes:

1. During 1943 to 1949, the mean annual incidence was 222 cases ¹



Graph: Haiti. Typhoid, cases



Graph: Haiti. Typhoid, deaths

Epidemics were reported in low-income areas of Port-au-Prince in 1991; and in the south during 1992 to 1993.

Notable outbreaks

Years	Region	Cases	Deaths	Population	Notes
1991		6		students	Outbreak among Swiss students in Haiti. ²
2003	Grand bois	200	40		

References

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2. Schweiz Med Wochenschr 1993 Sep 11;123(36):1692-5.

Typhus - endemic

Agent	BACTERIUM. <i>Rickettsia typhi</i>
Reservoir	Rat
Vector	Flea (<i>Xenopsylla</i> or <i>Nosopsyllus</i> spp.)
Vehicle	None
Incubation Period	10d - 12d (range 4d - 18d)
Diagnostic Tests	Serology. Identification of rickettsiae in smear or culture of skin lesions. Nucleic acid amplification.
Typical Adult Therapy	Doxycycline 100 mg BID X 7d
Typical Pediatric Therapy	Doxycycline 2 mg/kg BID X 7d (maximum 200 mg/day); or Chloramphenicol 12.5 mg/kg QID X 7d
Clinical Hints	Fever, headache and myalgia Truncal maculopapular rash (present in 60%) appears on days 3 to 5 and persists for 4 to 8 days Fever resolves after 12 to 16 days Case fatality rate (untreated) is 2%.
Synonyms	Endemic typhus, Murine typhus, <i>Rickettsia typhi</i> , Ship typhus, Tifo murino, Tifus pulgas, Vlektyphus. ICD9: 081.0 ICD10: A75.2

Urinary tract infection

Agent	BACTERIUM OR FUNGUS. <i>Escherichia coli</i> , other facultative gram negative bacilli, enterococci, et al
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Urine culture and leucocyte count.
Typical Adult Therapy	Antimicrobial agent(s) directed at known or likely pathogen
Typical Pediatric Therapy	As for adult
Clinical Hints	Fever, dysuria, frequency, flank pain and vomiting Infection in children or men - and infection which relapses in women - may warrant radiological studies to rule out underlying obstruction or calculus
Synonyms	Cistite, Cistitis, Cystite, Cystitis, Pielite, Pielitis, Pielonefrite, Pielonefritis, Prostatite, Pyelitis, Pyelonephrite, Pyelonephritis, Trigonitis, Tubulointerstitial nephritis, Urethritis, Uretrite, Zystitis. ICD9: 791.9,136.9,599.0,590,601.0 ICD10: N10,N30,N41

Vaccinia and cowpox

Agent	VIRUS - DNA. Poxviridae, Orthopoxvirus. Cowpox virus
Reservoir	Cattle, Cat Rodent
Vector	None
Vehicle	Cattle, Cat
Incubation Period	2d - 4d
Diagnostic Tests	Viral isolation from skin exudate or biopsy. Nucleic acid amplification. Biosafety level 3.
Typical Adult Therapy	Secretion precautions; supportive. In severe cases, Tecovirimat , 400 to 600 mg PO OD X 14 d.
Typical Pediatric Therapy	As for adult
Vaccine	Vaccinia immune globulin
Clinical Hints	Vesicles or pustules (usually on hand) progressing to crusts Painful regional lymphadenopathy Follows contact with infected animals or smallpox vaccination (largely abandoned); see Buffalopox (India note).
Synonyms	Akhmeta poxvirus, Aracatuba, Buffalopox, Camelpox, Cantagalo, Cowpox, Passatempo, Vaccinia, Vaiolo. ICD9: 051.0 ICD10: B08.0

Varicella	
Agent	VIRUS - DNA. Herpesviridae, Alphaherpesvirinae: Human Herpesvirus 3 (Varicella-zoster virus)
Reservoir	Human
Vector	None
Vehicle	Air, Contact, Breastfeeding, Respiratory or pharyngeal acquisition
Incubation Period	2w - 3w
Diagnostic Tests	Viral culture (vesicles). Serology. Nucleic acid amplification.
Typical Adult Therapy	Respiratory isolation. Severe/complicated cases: Acyclovir 10 to 12 mg/kg IV q8h X 7d Adolescent / young adult: 800 mg PO X 5 per day X 7 d. Alternatives: Valacyclovir 1 g PO TID; or Famciclovir 500 mg PO TID
Typical Pediatric Therapy	Respiratory isolation. Acyclovir (severe/complicated cases) 150 mg/sq m IV q8h X 7d
Vaccines	Varicella vaccine Varicella-Zoster immune globulin
Clinical Hints	Cough and fever followed by a pruritic papulovesicular rash after 1 to 2 days Pneumonia is often encountered Case fatality rate is 4.3 per 100,000 cases (7% in immune-suppressed patients)
Synonyms	Chickenpox, Lechina, Skoldkopper, Vannkopper, Varicela, Varizellen, Vattenkopper, Waterpokken, Windpocken. ICD9: 052 ICD10: B01

Vibrio parahaemolyticus infection

Agent	BACTERIUM <i>Vibrio parahaemolyticus</i> A facultative gram-negative bacillus
Reservoir	Marine water, Seafood, Fish
Vector	None
Vehicle	Seafood
Incubation Period	10h - 20h (range 2h - 4d)
Diagnostic Tests	Stool culture - alert laboratory when this organism is suspected.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Vomiting and explosive diarrhea Onset 4 to 24 hours following ingestion of seafood (often steamed crabs) Diarrhea may persist for 7 to 10 days Case fatality rate is 0.1%
Synonyms	Vibrio parahaemolyticus. ICD9: 005.4 ICD10: A05.3

West Nile fever

Agent	VIRUS - RNA. Flaviviridae, Flavivirus: West Nile virus A subtype of West Nile virus, Kunjin virus, is associated with human disease in Oceania and Asia
Reservoir	Bird, Horse, Bat, Tick
Vector	Mosquito (<i>Culex univittatus</i> , <i>Cx. pipiens</i> , <i>Cx. vishnui</i> , <i>Cx. naevei</i> , <i>Coquillettidia</i> , <i>Aedes</i> and <i>Anopheles</i> spp.)
Vehicle	Blood, Breastfeeding
Incubation Period	3d - 6d (range 1d - 14d)
Diagnostic Tests	Viral culture (blood, CSF). Serology. Nucleic acid amplification. Biosafety level 3.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Myalgia, arthralgia, lymphadenopathy, headache, conjunctivitis and a macular rash Sporadic instances of encephalitis, meningitis and myocarditis are reported Kunjin virus is similar, but often associated with arthralgia, myalgia and rash Illness resolves within one week in most cases
Synonyms	Bagaza, Fiebre del Oeste del Nilo, Kunjin, Lourdige, Near Eastern equine encephalitis, Ntaya, Usutu, WNF. ICD9: 066.4 ICD10: A92.3

Although West Nile fever is not endemic to Haiti, imported, expatriate or other presentations of the disease have been associated with this country.

West Nile fever in Haiti

The first cases of West Nile fever in Haiti were reported following a hurricane in 2004. ¹

Seroprevalence surveys

Years	Region	Study Group	%	Notes
2016*	multiple locations	general population	1	seroprevalence in Ouest and Sud-Est Departments ²

* indicates publication year (not necessarily year of survey)

References

1. [Emerg Infect Dis 2007 Feb ;13\(2\):308-10.](#)
2. [Am J Trop Med Hyg 2016 Nov 22;](#)

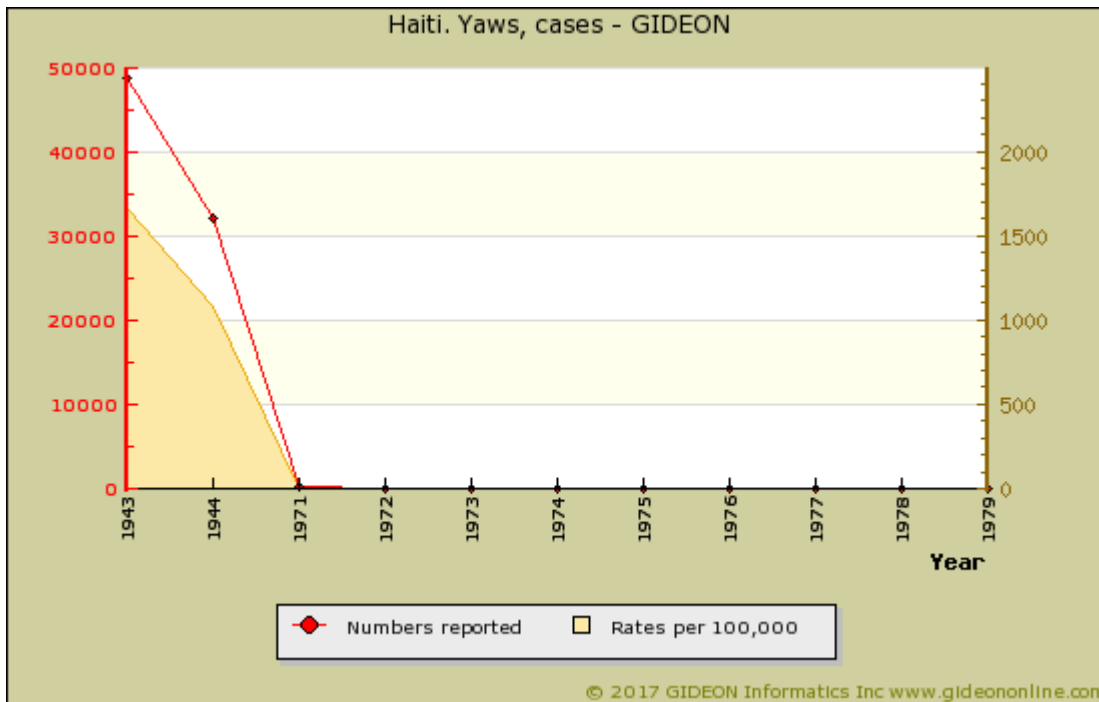
Whipple's disease

Agent	BACTERIUM. Actinomycetes, <i>Tropheryma whipplei</i> A gram positive bacillus
Reservoir	Unknown
Vector	None
Vehicle	None
Incubation Period	Unknown
Diagnostic Tests	Identification of inclusions in lamina propria (other tissues). Tissue culture. Nucleic acid amplification.
Typical Adult Therapy	Ceftriaxone 2.0 g IV daily X 14 days. OR Penicillin G 12 million u + Streptomycin 1 g daily X 14d. Then, Sulfamethoxazole / Trimethoprim X 1 year OR: Doxycycline 100 mg PO BID + Hydroxychloroquine X 1 year, followed by Doxycycline for life
Typical Pediatric Therapy	Disease is rarely, if ever, encountered in children
Clinical Hints	Chronic multisystem disorder characterized by weight loss, diarrhea, abdominal and joint pain Dermal hyperpigmentation, fever and lymphadenopathy are often present <i>Tropheryma whipplei</i> has recently been recovered from the blood of patients with fever, headache or cough.
Synonyms	Intestinal lipodystrophy, Lipophagic granulomatosis, Mesenteric chyladenectasis, Steatorrhea arthropericarditica, <i>Tropheryma whipplei</i> . ICD9: 040.2 ICD10: K90.8

Yaws

Agent	BACTERIUM. <i>Treponema pallidum</i> subsp. <i>pertenue</i> : microaerophilic gram-negative spirochete
Reservoir	Human, Non-human primate
Vector	None
Vehicle	Contact, Insect bite, Fomite
Incubation Period	3w - 5w (range 10d - 12w)
Diagnostic Tests	VDRL and antitreponemal tests (FTA, MHTP) positive as in syphilis.
Typical Adult Therapy	Azithromycin 30 mg/kg p.o. as single dose OR Benzathine Penicillin G 1.2 million units IM as single dose.
Typical Pediatric Therapy	Azithromycin 30 mg/kg p.o. as single dose OR Benzathine Penicillin G : Weight <14kg: 300,000u IM Weight 14 to 28kg: 600,000u IM Weight >28kg - 1.2 million u IM
Clinical Hints	Dermal papillomata, periostitis and soft tissue suppuration Regional lymphadenopathy is common Relapses often seen during the initial 5 years of illness Gummata and hyperkeratotic plaques appear in advanced stages of the infection
Synonyms	Anakhre, Bouba, Breda's disease, Charlouis' Disease, Frambesia, Gangosa, Goundou, Granuloma tropicum, Gundo, Henpue, Henpuye, Ogo Mutilans, Parangi, Patek, Pian, <i>Treponema pallidum</i> subsp <i>pertenue</i> . ICD9: 102 ICD10: A66

Yaws in Haiti



Graph: Haiti. Yaws, cases

Notes:

Individual years:

1952 - The prevalence rate of yaws was 4,982 per 100,000. ¹

1993 - 11 cases were identified in Grande-Anse Department.

Prevalence surveys

Years	Study Group	%	Notes
1954 - 1955	general population	0.57	0.57% nationwide, following a mass treatment campaign (1954 to 1955) ²

An anti-yaws treatment campaign was initiated in 1950. ³

References

1. Bull World Health Organ 1956 ;15(6):897-910.
2. Bull World Health Organ 1956 ;15(6):897-910.
3. Bull World Health Organ 1953 ;8(1-3):261-71; discussion 293-5.

Yellow fever

Agent	VIRUS - RNA. Flaviviridae, Flavivirus: Yellow fever virus
Reservoir	Human, Mosquito, Monkey, Marsupial
Vector	Mosquito (<i>Stegomyia (Aedes)</i> , <i>Haemagogus</i> , <i>Sabethes</i>)
Vehicle	None
Incubation Period	3d - 6d (range 2.5d - 14d)
Diagnostic Tests	Viral culture (blood, liver). Serology. Nucleic acid amplification. Biosafety level 3.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Vaccine	Yellow fever vaccine
Clinical Hints	Headache, backache, vomiting, myalgias, jaundice and hemorrhagic diathesis Relative bradycardia and leukopenia are present Illness is often biphasic Case fatality rate is 10% to 60%, within 7 days of onset
Synonyms	Bulan fever, Febbre gialla, Febre amarela, Fever of Fernando Po, Fever of the blight of Benin, Fiebre amarilla, Fievre jaune, Gelbfieber, Gele koorts, Gul feber, Gula febern, Inflammatory fever, Kendal's disease, Magdalena fever, Maladie de Siam, Pest of Havana, Stranger's fever. ICD9: 060 ICD10: A95

Although Yellow fever is not endemic to Haiti, imported, expatriate or other presentations of the disease have been associated with this country.

Yellow fever in Haiti

Yellow fever does not occur in Haiti.

Proof of vaccination is **NOT** required for travelers arriving from a country with risk of yellow fever transmission

Notable outbreaks

Years	Population	Notes
1802	military personnel	Outbreak among French soldiers in Haiti ¹

References

1. [J Public Health Manag Pract 2013 Jan-Feb;19\(1\):77-82.](#)

Yersiniosis

Agent	BACTERIUM. <i>Yersinia enterocolitica</i> and <i>Yersinia pseudotuberculosis</i> A facultative gram-negative bacillus
Reservoir	Pig, Rodent, Rabbit, Sheep, Goat, Cattle, Horse, Dog, Cat, Bat
Vector	None
Vehicle	Food, Water, Meat, Dairy products, Vegetables, Fecal-oral, Blood
Incubation Period	4d - 7d (range 1d - 11d)
Diagnostic Tests	Culture stool, blood. Alert laboratory when these organisms are suspected.
Typical Adult Therapy	Stool precautions; diarrhea is self-limited. If severe disease - Ciprofloxacin 500 mg BID X 5 to 7d. OR Sulfamethoxazole / Trimethoprim
Typical Pediatric Therapy	Stool precautions; diarrhea is self-limited. If severe disease - Sulfamethoxazole / Trimethoprim 20 mg-4 mg/kg BID X 5 to 7d
Clinical Hints	Fever, diarrhea, and right lower quadrant pain Fecal leucocytes present May be associated with rheumatologic manifestations such as erythema multiforme, Reiter's syndrome and chronic arthritis
Synonyms	Far East scarlet-like fever, FESLF, <i>Yersinia enterocolitica</i> , <i>Yersinia pseudotuberculosis</i> , Yersiniose. ICD9: 008.44 ICD10: A04.6,A28.2

Zika

Agent	VIRUS - RNA. Flaviviridae, Flavivirus: Zika virus
Reservoir	Human, Mosquito, Monkey
Vector	Mosquito (<i>Aedes</i> spp)
Vehicle	Sexual contact, Saliva, Blood transfusion
Incubation Period	5d - 8d (range 2d - 15d)
Diagnostic Tests	Viral isolation (blood). Serology. Nucleic acid amplification.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	A mild dengue-like illness with conjunctivitis and a pruritic maculopapular rash that starts on the face and spreads to the rest of the body; Joint pain is common Myalgia, retroorbital pain and leg edema may occur May be associated with Guillain-Barre syndrome and congenital neurological defects
Synonyms	Zika fever. ICD9: 078.89 ICD10: A92.8

Zika in Haiti

2014 - Cases of Zika virus infection were documented. ^{1 2}

2015 - A German worker acquired Zika virus infection in Haiti. ³

2016 - Two cases of Zika virus infection in Germany ⁴, one in Italy ⁵ and one in the United States ⁶ originated in Haiti. At least one case of sexually-transmitted Zika virus infection was reported in Chile, acquired from a traveler who had arrived from Haiti. ⁷

2016 - One case of microcephaly or other CNS malformation associated with Zika virus infection was reported to September 1. ⁸

Prevalence surveys

Years	Study Group	%	Notes
2014	children	1.7	1.7% of school children with undifferentiated febrile illness (2014) ^{9 10}

Notable outbreaks

Years	Cases	Notes
2016	2,955	Case numbers to November, 2016. Reports included 11 cases of resultant Guillain-Barre syndrome and 1 case of congenital syndrome. ^{11 12 13 14 15 16}

References

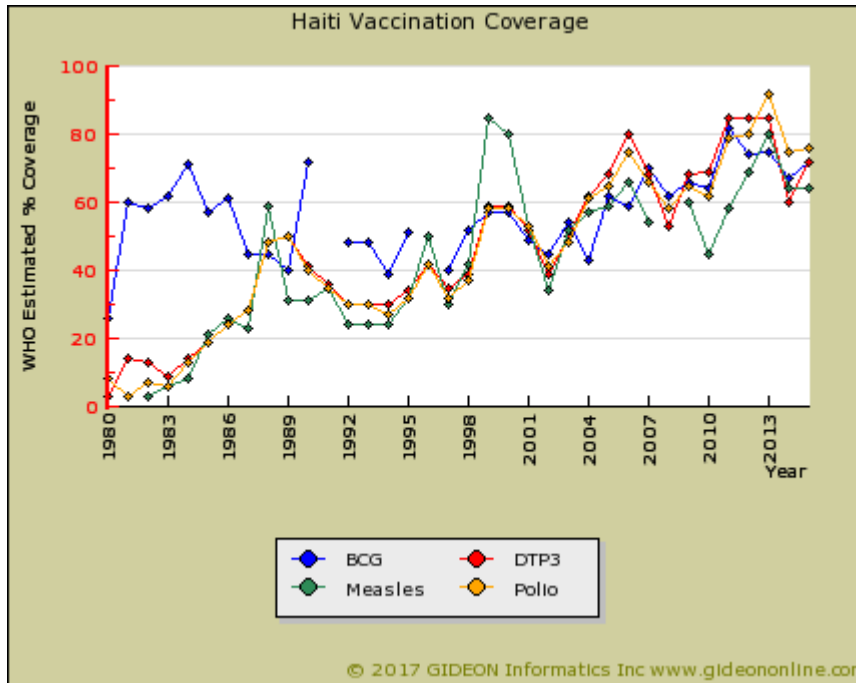
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Zygomycosis

Agent	FUNGUS. Zygomycota, Zygomycetes, Mucorales: <i>Mucor</i> spp., <i>Rhizopus</i> spp., <i>Lichtheimia</i> (formerly <i>Absidia</i>) spp, <i>Saksenaea</i> spp, et al
Reservoir	Saprophytes
Vector	None
Vehicle	Air, Bandages, Contact, Respiratory or pharyngeal acquisition
Incubation Period	Variable
Diagnostic Tests	Fungal smear and culture.
Typical Adult Therapy	Amphotericin B to maximum dose 0.8 mg/kg/d; and to total dose of 3g. Excision as indicated
Typical Pediatric Therapy	Amphotericin B max dose 0.8 mg/kg/d; and to total dose of 40 mg/kg. Excision as indicated
Clinical Hints	Periorbital pain, sinusitis, and palatal, nasal or cerebral infarcts Occurs in the setting of preexisting acidosis (diabetes, uremia) Pulmonary infection may complicate leukemia
Synonyms	Absidia, Actinomucor, Apophysomyces, Cokeromyces, Cunninghamella, Hormographiella, Lichtheimia, Lichtheimia, Mucor, Mucormycosis, Mycocladus, Phycomycosis, Rhizomucor, Rhizopus, Saksenaea, Syncephalastrum. ICD9: 117.7 ICD10: B46

Vaccine Schedule and coverage for Haiti

BCG - birth
 DTwPHibHepB - 6,10,14 weeks
 HepB - >= 12 years
 IPV - 6 weeks
 MMR - 12, 24 months
 MR - 9 months
 OPV - 6,10,14 weeks
 Rotavirus - 6,10 weeks
 Td - 1st contact; +4 weeks; +6 months; +1, +1 years pregnant women



A given generic vaccine may have multiple designations in this list due to variations in terminology used by individual countries. Vaccination policies evolve rapidly in response to changes in disease occurrence and the introduction of new vaccines. Every effort has been made to update these lists accordingly.

Vaccine Abbreviations

aP - Attenuated pertussis
 ap - Attenuated pertussis
 BCG - Bacillus Calmette Guerin
 CBAW - Childbearing age women
 D - Diphtheria
 HCW - Health-care workers
 Hep - Hepatitis B
 HEP - Hepatitis B
 HepA - Hepatitis A
 HepB - Hepatitis B
 Hib - Haemophilus influenzae type B
 HPV - Human papillomavirus
 IPV - Injectable polio vaccine
 MenACWY - Meningococcus types A,C,Y and W
 MenC-conj - Meningococcus type C conjugate
 MR - Measles, Rubella
 MMR - Measles, Mumps, Rubella
 MMRV - Measles, Mumps, Rubella, Varicella
 NA - Details not available
 OPV - Oral polio vaccine
 P - Pertussis
 Pneumo - Pneumococcal vaccine
 Pneumo conj - Pneumococcal conjugate
 Pneumo ps - Pneumococcal polysaccharide
 T - Tetanus

TBE - Tick-borne encephalitis
Td - Tetanus lower dose diphtheria
TT - Tetanus toxoid
wP - Whole-cell pertussis
YF - Yellow fever
Zoster - Herpes zoster

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