INFECTIOUS DISEASES OF HONDURAS

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Infectious Diseases of Honduras - 2017 edition
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Scope of Content

Disease designations may reflect a specific pathogen (ie, Adenovirus infection), generic pathology (Pneumonia - bacterial) or etiologic grouping (Coltiviruses - 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 Honduras 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 Honduras
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 Honduras follows the diseases chapters.

Content
There are 357 generic infectious diseases in the world today. 220 of these are endemic, or potentially endemic, to Honduras. A number of other diseases are not relevant to Honduras 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 Honduras.

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 Honduras.

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
1990	Alberta					
1999	Alberta		12		pet food	infantis
2004	Alberta	restaurant	31			Heidelberg
2010 to 2011	Alberta		91		food	enteritidis
1960	British Columbia		65			
1985 to 1986	British Columbia		13		chocolate	nima
1995 to 1996	British Columbia		133		sprouts	Newport
2000	British Columbia		47		baked goods	enteritidis
2000	British Columbia		62		eggs	
2005*	British Columbia				baked goods	
2008	British Columbia		64			
2011	British Columbia		8			agbeni

Years	Region	Setting	Cases	Deaths	Source	Pathogen
2013*		airplane			eggs	Heidelberg
1966		bar mitzvah	34		fish	Java
1984	Ontario	day nursery	22			typhimurium
1992*	Ontario	hospital				enteritidis
1997*	Montreal	hotel				enteritidis PT 8
1982	Quebec	nursery			milk	typhimurium
1983 to 1986	Halifax	nursing home	51			Newport
2011	New Brunswick	nursing home	7	1		
1999	Edmonton	restaurant	27			typhimurium
2001	multiple sites	restaurant	12		sprouts	enteritidis PT 11b
2004	Alberta	restaurant	31			Heidelberg
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: *Moniliformis moniliformis*, Oligocanthorhynchida: *Maracanthorhynchus hirudinaceus*.
Reservoir	Pig (*Maracanthorhynchus*), rat and fox (*Moniliformis*),
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 Moniliformis moniliformis - 11 mg/kg PO - repeat once in 2 weeks
Typical Pediatric Therapy	Infection is usually self-limited. Pyrantel pamoate has been used against Moniliformis moniliformis - 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, *Actinomyces* 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

Adenovirus infection in Honduras

Prevalence surveys

Years	Study Group	%	Notes
2006 - 2009	patients	3.6	pharyngeal swabs from inpatients and outpatients in El Salvador, Honduras and Nicaragua [1]

References

1. Influenza Other Respir Viruses 2011 Mar ;5(2):123-34.

Aeromonas and marine Vibrio infx.

Agent	BACTERIUM. *Aeromonas hydrophila*, *Vibrio vulnificus*, 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

Amoeba - free living

Agent	PARASITE - Protozoa. Centramoebida, Acanthamoebidae: *Acanthamoeba* and *Balamuthia* Schizopyrenida, Vahkampfidae: *Naegleria*
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 *Naegleria*: 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 *Acanthamoeba*: Sulfonamides + Flucytosine Miltefosine some cases of *Acanthamoeba* / *Balamuthia*
Typical Pediatric Therapy	CNS Naegleria: 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 Acanthamoeba: Sulfonamides + Flucytosine Miltefosine successful in some cases of Acanth. / Balamuthia enceph.
Clinical Hints	Severe, progressive meningoencephalitis (*Naegleria*, *Acanthamoeba* or *Balamuthia*) following swimming or diving in fresh water Keratitis (*Acanthamoeba*), associated with contaminated solutions used to clean contact lenses.
Synonyms	Acanthamoben, Acanthamoeba, Allovahlkampfia, Amebic keratitis, Balamuthia, Balmuthia, Dictyostelium, Free-living ameba, Leptomyxid ameba, Naegleria, Paravahlkampfia, Primary amebic meningoencephalitis, Sappinia, Vahlkampfia. ICD9: 136.2 ICD10: B60.1,B60.2

Amoebiasis

Agent	PARASITE - Protozoa. Sarcomastigota, Entamoebidea: *Entamoeba histolytica* (must be distinguished from non-invasive, *Entamoeba dispar*)
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 Honduras

The annual rate of amebiasis is approximately 300 per 100,000.

Amoebic abscess

Agent	PARASITE - Protozoa. Sarcomastigota, Entamoebidea: *Entamoeba histolytica* (must be distinguished from non-invasive, *Entamoeba dispar*)
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 Honduras

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

Angiostrongyliasis - abdominal

Agent	PARASITE - Nematoda. *Parastrongylus* (*Angiostrongylus*, *Morerastrongylus*) *costaricensis*
Reservoir	Cotton rat (Sigmodon), Slug
Vector	None
Vehicle	Slug, Slug excretions
Incubation Period	10d - 14d
Diagnostic Tests	Identification of ova or adults in surgical material. Serology. Nucleic acid amplification.
Typical Adult Therapy	Mebendazole 200 to 400 mg PO tid X 10 days. OR Thiabendazole 25 mg/kg TID (max 3g/d) X 3d. Surgery for complications
Typical Pediatric Therapy	As for adult
Clinical Hints	Mimics acute appendicitis, including presence of a right lower quadrant mass Eosinophilia (uncommon in appendicitis) is prominent Patient may recall recent ingestion of slugs or vegetation (contaminated by slugs)
Synonyms	Angiostrongylus costaricensis, Parastrongylus costaricensis. ICD9: 128.9 ICD10: B81.3

Angiostrongyliasis - abdominal in Honduras

13 cases were reported in 1985.

Animal bite-associated infection

Agent	BACTERIUM. *Pasteurella multocida*, 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, Coryebacterium 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: *Anisakis simplex* and *Pseudoterranova decipiens*
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, Contracaecum, Eustrongylides, Herring worm disease, Hysterothylacium, Pseudoterranova, Whaleworm. ICD9: 127.1 ICD10: B81.0

Anthrax

Agent	BACTERIUM. *Bacillus anthracis* 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 Honduras

Anthrax, cases: None reported between 2002 and 2003

Seven outbreaks of bovine anthrax (30 cases) were reported in 1994.

Ascariasis

Agent	PARASITE - Nematoda. Secernentea: *Ascaris lumbricoides*
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, Ascaris lumbricoides, Askariasis. ICD9: 127.0 ICD10: B77

Ascariasis in Honduras

Prevalence surveys

Years	Study Group	%	Notes
2011	children	30.3	30.3% of rural school children [1]
2011	children	20	20% of rural school-age children [2]
2014*	children	22.3	22.3% of 3rd to 5th grade school children [3]
1998	general population	45	45% of the rural population [4]
2004*	patients - HIV/AIDS	24	[5]

* indicates publication year (not necessarily year of survey)

Prevalence rates exceed 20% in 47.8% of municipalities (1930 to 2012) [6]

References

1. Parasit Vectors 2014 Aug 04;7:354.
2. PLoS Negl Trop Dis 2013 ;7(8):e2378.
3. PLoS Negl Trop Dis 2014 Oct ;8(10):e3248.
4. Mem Inst Oswaldo Cruz 2001 Apr ;96(3):303-14.
5. Mem Inst Oswaldo Cruz 2004 Nov ;99(7):773-8.
6. PLoS Negl Trop Dis 2014 ;8(1):e2653.

Aspergillosis

Agent	FUNGUS. Ascomycota, Euascomycetes, Eurotiales: *Aspergillus*. 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. *Bartonella henselae* or *Bartonella quintana*. *Rickettsia*-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	Hemangiomatous 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. *Bacillus cereus* (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. *Gardnerella vaginalis* (facultative gram-negative bacillus), *Mobiluncus curtisii*, *Mobiluncus mulieris*, *Prevotella*, 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

Balantidiasis

Agent	PARASITE - Protozoa. Ciliate (Ciliophora), Litostomatea: *Balantidium coli*
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 pay 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. *Afipia felis*, *Bartonella henselae*, *Bartonella clarridgeiae*, *Bartonella grahamii*, et al. A facultative gram-negative coccobacillus
Reservoir	Cat, Possibly tick
Vector	Cat flea (*Ctenocephalides*)
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	Afipia felis, Bartonella clarridgeiae, Bartonella grahamii, Bartonella henselae, Bartonella koehlerae, 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. *Bartonella quintana*, *B. koehlerae*, *B. elizabethae*, *B. tamiae*, *B. washoensis*, etc A fastidious gram-negative coccobacillus
Reservoir	Human, Louse, Rat Cat Dog Sheep
Vector	Louse (*Pediculus*) Flea (*Ctenocephalides*, *Pulex*), Mite (*Dermanyssus*)
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, Trovafloxacin, 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	Bartonella alsatica, Bartonella bovis, Bartonella capreoli, Bartonella doshiae, Bartonella elizabethae, Bartonella melophagi, Bartonella quintana, Bartonella rochalimae, Bartonella schoenbuchensis, Bartonella tamiae, Bartonella tribocorum, Bartonella vinsonii, Bartonella vinsonii berkhoffii, Bartonella volans, Bartonella washoensis, Candidatus Bartonella mayotimonensis, Candidatus Bartonella merieuxii, Candidatus Bartonella rochalimae, 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: *Blastocystis hominis*. (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 Honduras

Blastocystis hominis was the most common parasite acquired by U.S. military personnel serving in Honduras (2004 publication). [1]

References

1. Mil Med 2004 Nov ;169(11):903-8.

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. *Clostridium botulinum*. 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

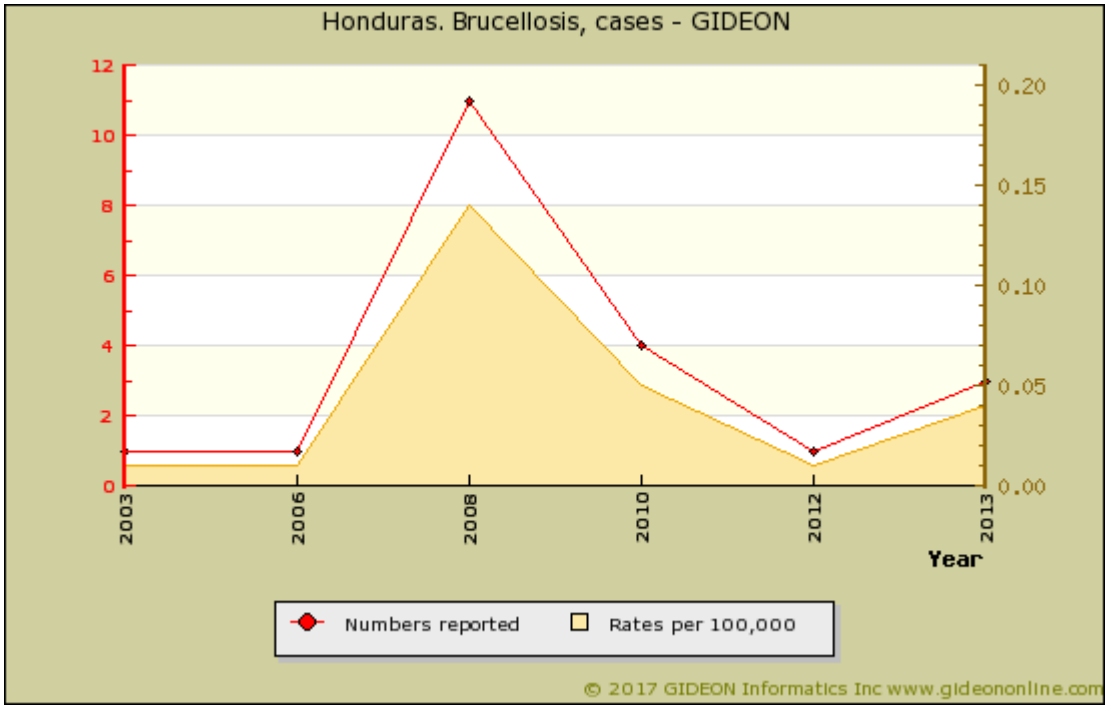
Agent	BACTERIUM OR FUNGUS. Mixed oral anaerobes / streptococci, *Staphylococcus aureus* (from endocarditis), etc.
Reservoir	Human
Vector	None
Vehicle	None
Incubation Period	Variable
Diagnostic Tests	Imaging techniques (CT, scan, etc).
Typical Adult Therapy	Antibiotic(s) appropriate to likely pathogens + 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. *Brucella abortus*, *Brucella melitensis*, *Brucella suis*, *Brucella canis* 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 Honduras

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



Graph: Honduras. Brucellosis, cases

Notable outbreaks

Years	Region	Population	Notes
2013	Northwestern Region	cattle	1

References

1. ProMED <promedmail.org> archive: 20130911.1936137

Bunyaviridae infections - misc.

Agent	VIRUS - RNA. Bunyaviridae, Orthobunyavirus. Over 30 strains have been associated with human disease (see Synonyms)
Reservoir	Rat, Bird, Marsupial, Chipmunk, Cattle, Sheep, Horse, Bat
Vector	Mosquito (exceptions: Shuni is transmitted by culicoid flies; Bhanja, Tamdy, Wanowrie and Zirqa by ticks)
Vehicle	None
Incubation Period	3d - 12d
Diagnostic Tests	Serology and virus isolation. Nucleic acid amplification. Biosafety level 2 or 3.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Abrupt onset of fever, chills, headache; photophobia, rash arthralgia or myalgia Vomiting, diarrhea or cough may be present Meningitis or myocarditis may occur with Bwamba virus Illness resolves within two-to-seven days
Synonyms	Avalon, Bangui, Batai, Bhanja, Bunyamwera, Bwamba, Cache Valley, Calovo, Catu, Fort Sherman, Garissa, Germiston, Guama, Hartland virus, Ilesha, Ingwavuma, Issyk-Kul, Kairi, Lumbo, Ngari, Northway, Nyando, Pongola, Shokwe, Shuni, Tacaiuma, Tamdy, Tataguine, Tensaw, Wanowrie, Wyeomyia, Zirqa. ICD9: 066.3 ICD10: A93.8

Campylobacteriosis

Agent	BACTERIUM. *Campylobacter jejuni* subsp *jejuni*, 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. *Candida albicans*, 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

Chancroid

Agent	BACTERIUM. *Haemophilus ducreyi*. 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

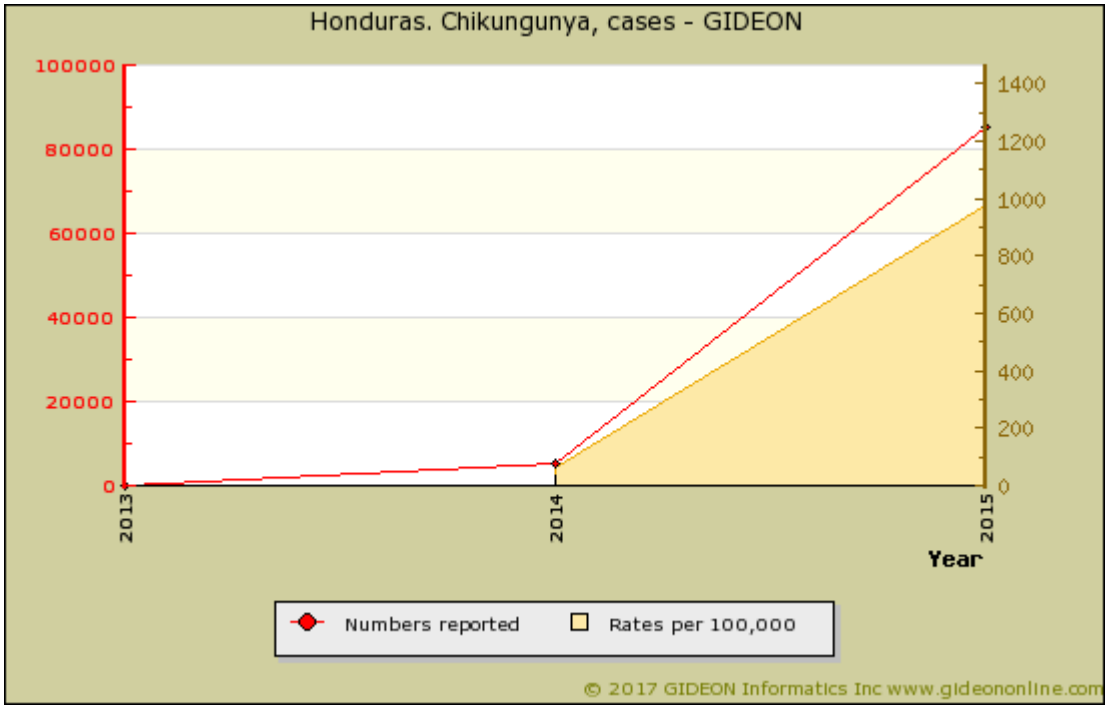
Chandipura and Vesicular stomatitis viruses

Agent	VIRUS - RNA. Mononegavirales Rhabdoviridae, Vesiculovirus: Chandipura virus Vesicular stomatitis virus
Reservoir	Horse, Cattle, Pig
Vector	Sandfly
Vehicle	Aerosol from animal, Contact, Respiratory or pharyngeal acquisition
Incubation Period	2d - 6d (range 1d - 8d)
Diagnostic Tests	Viral culture (blood). Serology. Nucleic acid amplification. Biosafety level 3.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Vesicular stomatitis: - Myalgia, headache, conjunctivitis, oral and digital - Often follows animal contact - Infection resolves within one week - No fatality or residua Chandipura virus: - Fever, myalgia, arthralgia, vomiting and diarrhea - Severe encephalitis, often in the setting of outbreaks - Reported case-fatality rate is 47%
Synonyms	Alagoas, Calchaqui, Chandipura, Cocal, Epidemic stroke, Indiana, Isfahan, LeDantec, Ledantevirus, Piry, Vesicular stomatitis. ICD9: 066.8 ICD10: A93.8

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 (*Aedes* spp.; *Ae. furcifer-taylori* 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 Honduras



Graph: Honduras. Chikungunya, cases

Notable outbreaks

Years	Cases	Deaths	Notes
2014	5,343		5,338 suspect autochthonous and 5 imported cases [1] [2] [3] [4] [5] [6] [7] [8] [9]
2015	82,003	1	82,003 case numbers to October) [10] [11] [12] [13] [14] [15] [16] [17] [18]
2016	14,325	0	Cases to September [19] [20] [21] [22] [23] [24]

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3. ProMED <promedmail.org> archive: 20141207.3016589
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Chlamydia infections, misc.

Agent	BACTERIUM. Chlamydiaceae, Chlamydiae, *Chlamydia trachomatis*; *Simkania negevensis*; *Waddlia chondrophila*
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	Doxycycline 100 mg BID X 7d. OR Azithromycin 1g as single dose OR Levofloxacin 500 mg daily X 7 days OR Ofloxacin 300 mg BID X 7 days
Typical Pediatric Therapy	Weight <45 kg: Erythromycin 12.5 mg/kg QID X 14d Weight >=45 kg, but age <8 years: Azithromycin 1 g as single dose Age >= 8 years: Azithromycin 1 g as single dose OR Doxycycline 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, Chlamydien-Urethritis, Chlamydien-Zervizitis, Chlamydophila, Inclusion blenorrhea, Non-gonococccal 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 Honduras

Prevalence surveys

Years	Region	Study Group	%	Notes
2009*		indigenous peoples	6.8	6.8% of Garifuna people (urine specimens) [1]
1991*	Tegucigalpa	sex workers	25	[2]
2006		sex workers	6.1	6.1% of urban CSW [3]
2008		sex workers	3.3	[4]
2005*	Tegucigalpa	students	6	[5]

* indicates publication year (not necessarily year of survey)

References

1. J Acquir Immune Defic Syndr 2009 May 01;51 Suppl 1:S26-34.
2. Int J STD AIDS 1991 May-Jun;2(3):195-9.
3. Int J STD AIDS 2012 Feb ;23(2):88-93.
4. Int J STD AIDS 2012 Feb ;23(2):88-93.
5. Am J Trop Med Hyg 2005 Jul ;73(1):50-3.

Chlamydophila pneumoniae infection

Agent	BACTERIUM. Chlamydiaceae, Chlamydiae, *Chlamydophila* (*Chlamydia*) *pneumoniae*
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. *Escherichia coli*, *Klebsiella pneumoniae*, 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

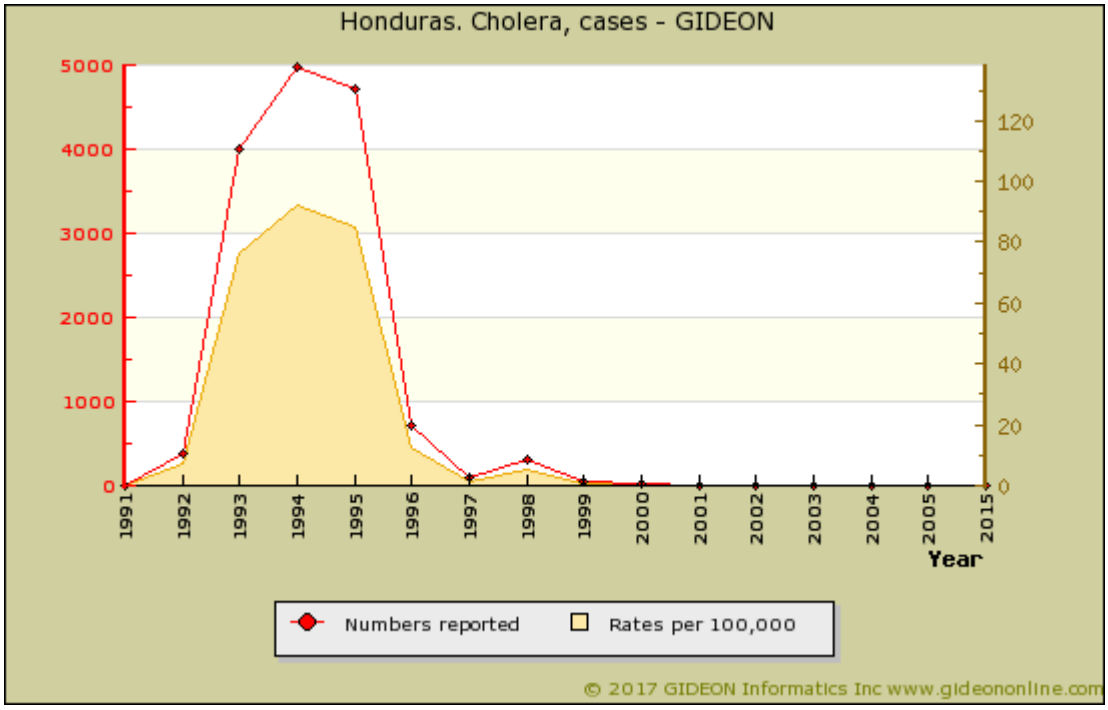
Agent	BACTERIUM. *Vibrio cholerae* A facultative gram-negative bacillus
Reservoir	Human
Vector	None
Vehicle	Water, Fecal-oral, Seafood (oyster, ceviche), Vegetables, Fly
Incubation Period	1d - 5d (range 9h - 6d)
Diagnostic Tests	Stool culture. Advise laboratory when this organism is suspected.
Typical Adult Therapy	Stool precautions. Doxycycline 100 mg BID X 5d, or Fluoroquinolone (Levofloxacin, Trovafloxacin, 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 Honduras

In recent years cholera has been reported from: [1] [2]
Camayagua State
Choluteca Department
Cortes Department
El Paraiso Department
Francisco Morazan
Gracias a Dios Department:
  La Mosquita
Omoa State
Santa Barbara Department
Valle Department
Yoro Department

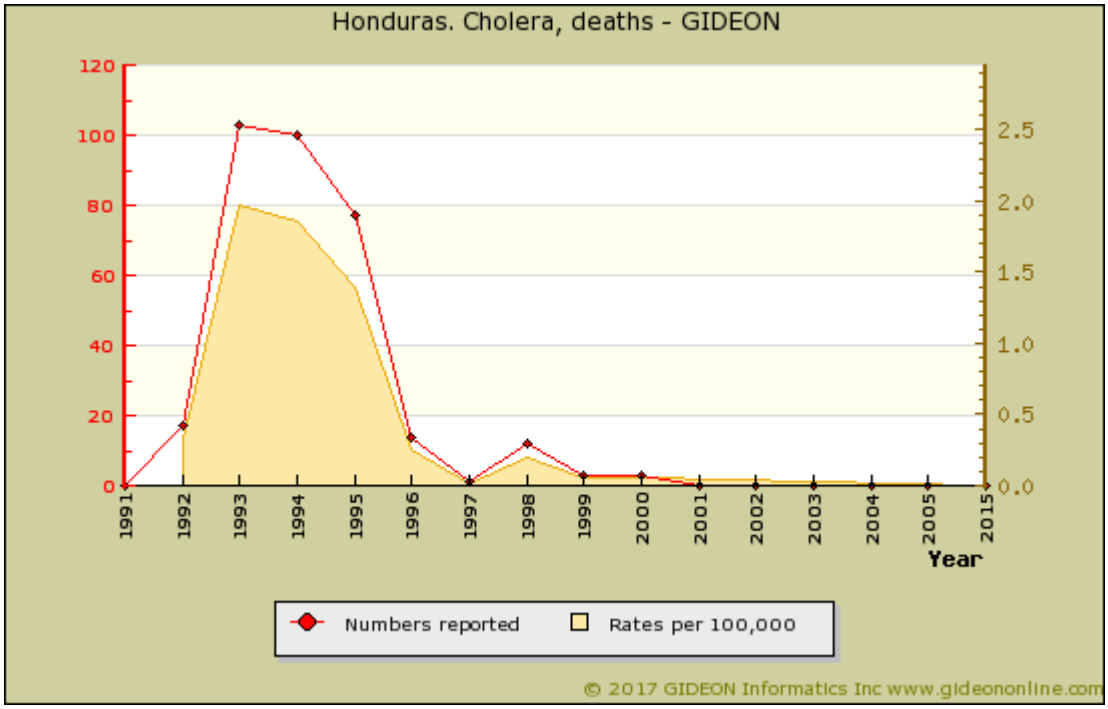
Honduras was removed from the WHO "Infected areas list" as of June 2001.

Non-01 strains may be present



Graph: Honduras. Cholera, cases

Notes:
Individual years:
1998 - Included 289 in La Mosquita (Gracias a Dios Department).
1999 - 56 cases were reported to WHO (most in La Mosquita area); however, 127 cases were reported by the Honduran Health Ministry.



Graph: Honduras. Cholera, deaths

Notable outbreaks

Years	Region	Cases	Deaths	Notes
1998	Gracias a Dios Province	189	7	[3]

References

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Chromomycosis

Agent	FUNGUS. Ascomycota, Euascomycetes, Chaetothyriales. Dematiaceous molds: *Phialophora*, *Cladiophialophora*, *Fonsecaea*, *Rhinocladiella*
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

Chronic meningococcemia

Agent	BACTERIUM. *Neisseria meningitidis* 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	Meningococcemia, chronic. ICD9: 036.2 ICD10: A39.3

Clostridial food poisoning

Agent	BACTERIUM. *Clostridium perfringens* 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 C. perfringens.
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. *Clostridium perfringens* 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. *Clostridium difficile* 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 Mucoid 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

Coccidioidomycosis

Agent	FUNGUS. Ascomycota, Euascomyces, Onygenales: *Coccidioides immitis* (also *Coccidioides posadasii*) A dimorphic fungus
Reservoir	Soil
Vector	None
Vehicle	Air, Respiratory or pharyngeal acquisition
Incubation Period	10d - 14d (range 7d - 28d)
Diagnostic Tests	Culture of sputum, CSF, biopsy etc for fungi. Nucleic acid amplification.
Typical Adult Therapy	(Non-meningitic) Fluconazole 500 mg PO daily. OR Itraconazole 200 mg PO BID X 1y. OR Amphotericin B 0.4 mg/kg/d X 6w, then 0.8 mg/kg qod
Typical Pediatric Therapy	(Non-meningitic) Fluconazole 8 mg/kg/day PO or IV OR Ketoconazole 5 mg/kg/d X 1y, OR Amphotericin B 0.4 mg/kg/d X 6w, then 0.8 mg/kg qod
Clinical Hints	Cough, chest pain and myalgia Eosinophilia, erythema nodosum or headache in many cases Extrapulmonary infection (bone, skin, genitourinary, etc) is occasionally encountered
Synonyms	California disease, Coccidioides immitis, Coccidioides posadasii, Coccidioidomykose, Desert rheumatism, Posada's disease, Valley fever. ICD9: 114 ICD10: B38

Coccidioidomycosis in Honduras

The disease is common in the Comayagua Valley. [1]

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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, *Chlamydia trachomatis*
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, Hymenomycetes, Sporidiales: *Cryptococcus neoformans* 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: *Cryptosporidium hominis* and *C. parvum* (rarely *C. muris*, *C. felis*, *C. meleagridis*, 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	Cryptosporidium, Cryptosporidium andersoni, Cryptosporidium chipmunk genotype, Cryptosporidium cunulicus, Cryptosporidium fayeri, Cryptosporidium felis, Cryptosporidium hedgehog genotype, Cryptosporidium hominis, Cryptosporidium meleagridis, Cryptosporidium parvum, Cryptosporidium pestis, Cryptosporidium suis, Cryptosporidium tyzzeri, Cryptosporidium ubiquitum, Cryptosporidium viatorum, Kryptosporidiose. ICD9: 007.4 ICD10: A07.2

Cryptosporidiosis in Honduras

Prevalence surveys

Years	Study Group	%	Notes
1991*	children	6.7	6.7% of rural children with diarrhea [1]

* indicates publication year (not necessarily year of survey)

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Cutaneous larva migrans

Agent	PARASITE - Nematoda. Secernentea: *Ancylostoma braziliense*, *A. caninum*, *Bunostomum phlebotomum*, *Strongyloides myopotami*
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: *Cyclospora cayetanensis*
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 Honduras

83.3% of cases are diagnosed during May to August (2002 to 2011) [1]

Prevalence surveys

Years	Study Group	%	Notes
2002 - 2011	patients	1.3	1.3% of patients consulting at a University hospital [2]

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Cysticercosis

Agent	PARASITE - Platyhelminthes, Cestoda. Cyclophyllidea, Taeniidae: *Taenia solium*
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	Taenia crassiceps, Taenia martis. ICD9: 123.1 ICD10: B69

Cysticercosis in Honduras

Cysticercosis is present in 0.16% of hospital patients, and 2.9% of neurosurgical patients.

Cysticercosis accounts for 37% of symptomatic epilepsy (Salama). [1]

As many as 25% of the population are seropositive (22% in rural Tegucigalpa; 15% in urban Tegucigalpa). [2]

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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

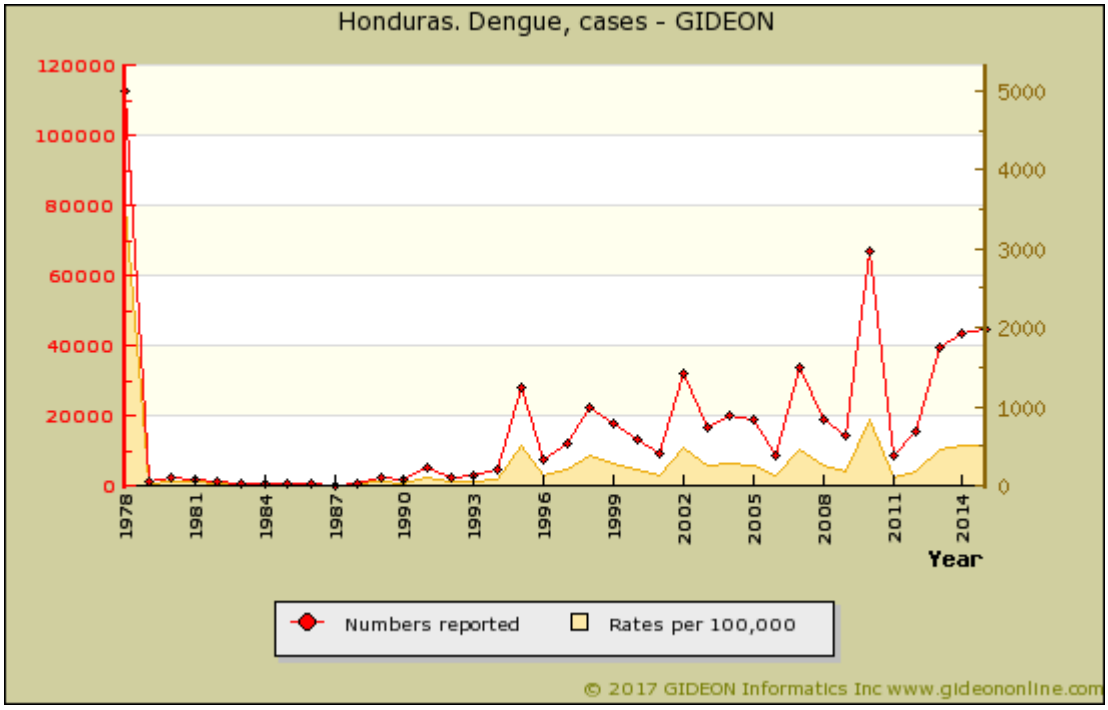
Dengue

Agent	VIRUS - RNA. Flaviviridae, Flavivirus: Dengue virus
Reservoir	Human, Mosquito, Monkey (in Malaysia and Africa)
Vector	Mosquito - *Stegomyia* (*Aedes*) aegypti, *S. albopictus*, *S. polynesiensis*, *S. scutellaris*
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 Honduras

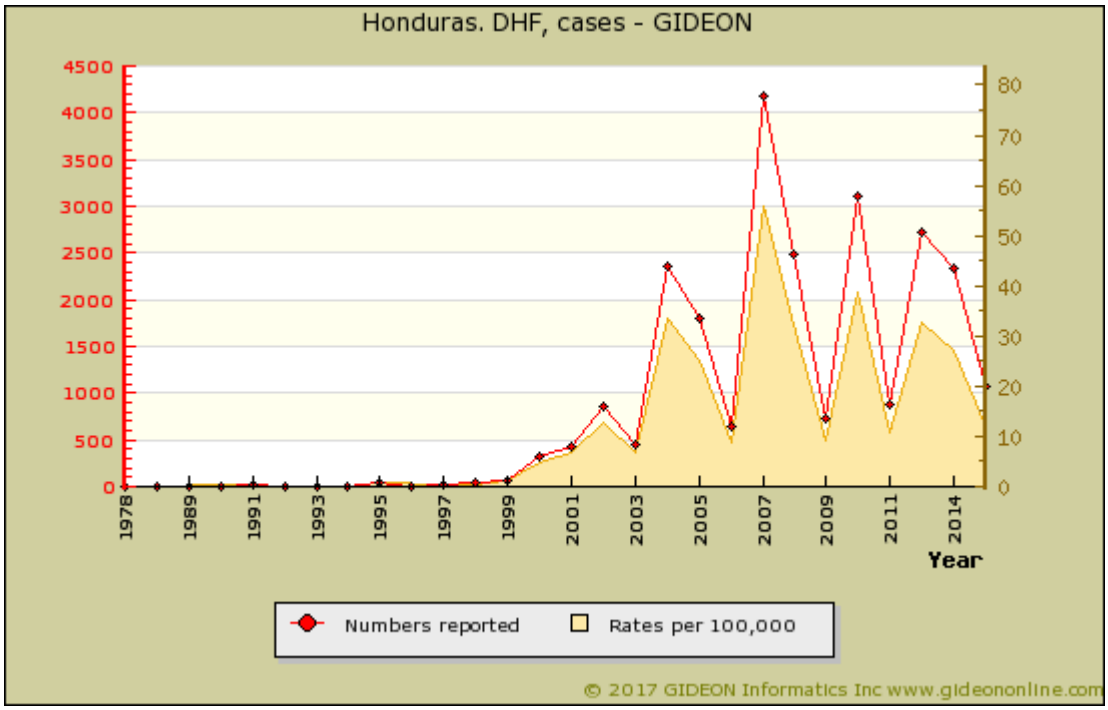
Time and Place:
Dengue was first reported in Honduras in 1977.

- The disease is most common during August to November, among women and in the North and Central areas of the country.

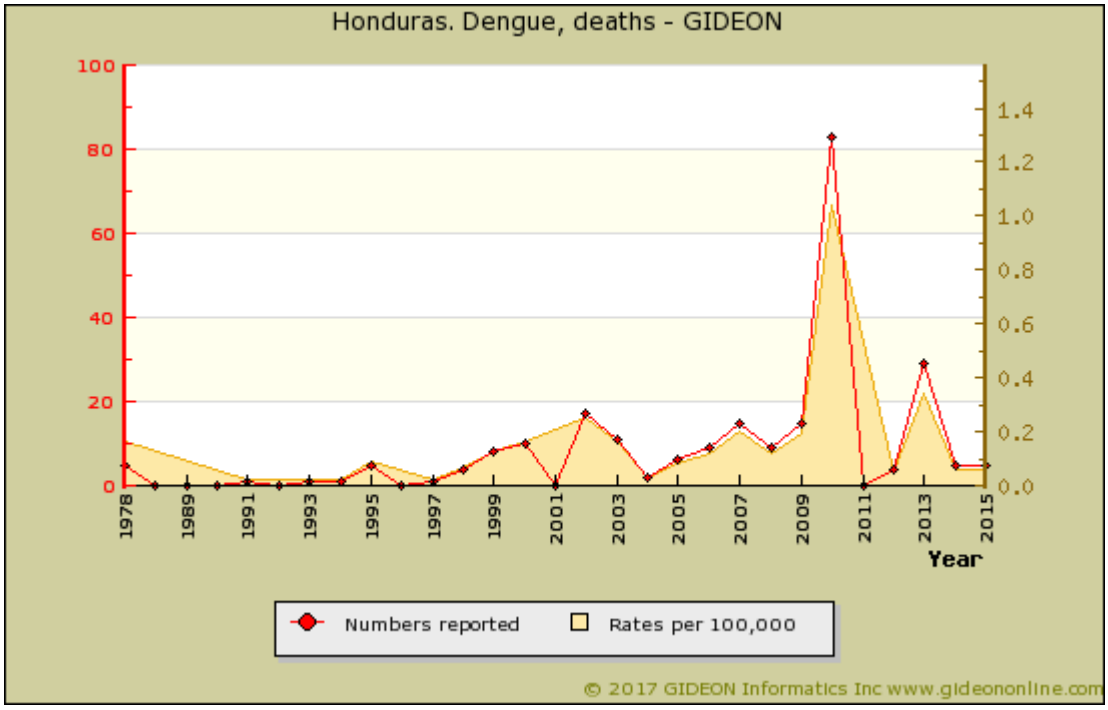


Graph: Honduras. Dengue, cases

Notes:
Individual years:
1987 - 261 cases were officially reported, but approximately 9,500 cases were registered during an outbreak in Choluteca that year.
2000 - Most cases in Tegulcigalpa, Juticalpa and Comayagua.
2002 - Most cases in Francisco, Morazan, La Paz, Cortes, Olancho, Comayagua, Choluteca, El Paraiso, Yoro, Santa Barbara and Copan.



Graph: Honduras. DHF, cases



Graph: Honduras. Dengue, deaths

Prevalence surveys

Years	Study Group	%	Notes
2004 - 2005	blood donors	0.3	0.30% of donated blood units [1]

Vectors:

- Intensive *Stegomyia (Aedes) aegypti* eradication campaigns were conducted during the 1950's. Reinfestation was documented in 1968.
- The presence of *Aedes albopictus* was confirmed in Honduras in 1995. [2]

Notable outbreaks

Years	Cases	Deaths	Notes
1978	112,492		Included the country's first cases (5) of DHF [3]
2010	66,646	81	[4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] [17] [18] [19] [20] [21]
2011	680		[22]
2012	15,419	2	[23] [24] [25] [26] [27] [28] [29] [30] [31] [32] [33] [34] [35] [36] [37] [38] [39]
2013	37,666	27	[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]
2014	42,902		[73] [74] [75] [76] [77] [78] [79] [80] [81] [82] [83] [84] [85] [86] [87] [88] [89]
2015	44,834	5	[90] [91] [92] [93] [94] [95] [96] [97] [98] [99] [100] [101] [102] [103] [104] [105] [106] [107] [108] [109]
2016	20,034	2	Cases to September [110] [111] [112] [113] [114] [115] [116] [117]

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Dermatophytosis

Agent	FUNGUS. Ascomycota, Euascomyces, Onygenales: *Epidermophyton*, *Microsporum*, *Trichophyton*, *Trichosporon* spp., *Arthroderma*, 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, Nattrassia, 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

Dientamoeba fragilis infection

Agent	PARASITE - Protozoa. Metamonada, Parabasala, Trichomonadea. Flagellate: *Dientamoeba fragilis*
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	

Dientamoeba fragilis infection in Honduras

Dientamoeba fragilis has been identified in children with diarrhea. [1]

References

1. Trans R Soc Trop Med Hyg 1991 Jan-Feb;85(1):70-3.

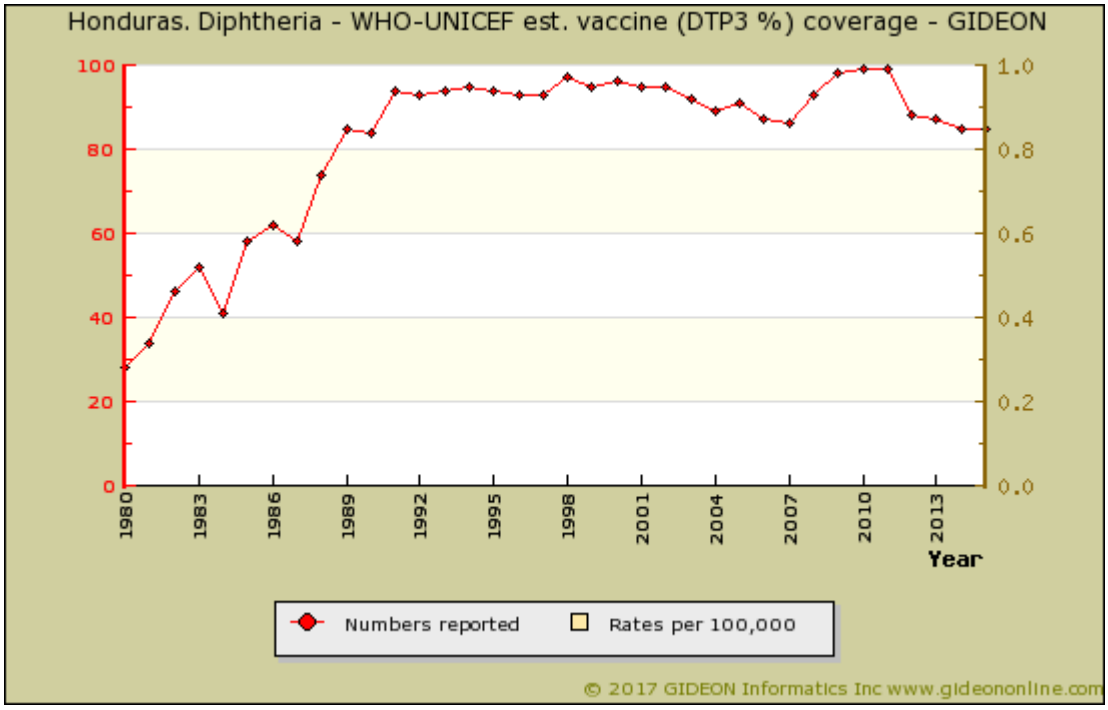
Diphtheria

Agent	BACTERIUM. *Corynebacterium diphtheriae* 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	Corynebacterium diphtheriae, Difteri, Difteria, Difterie, Difterite, Diphterie. ICD9: 032 ICD10: A36

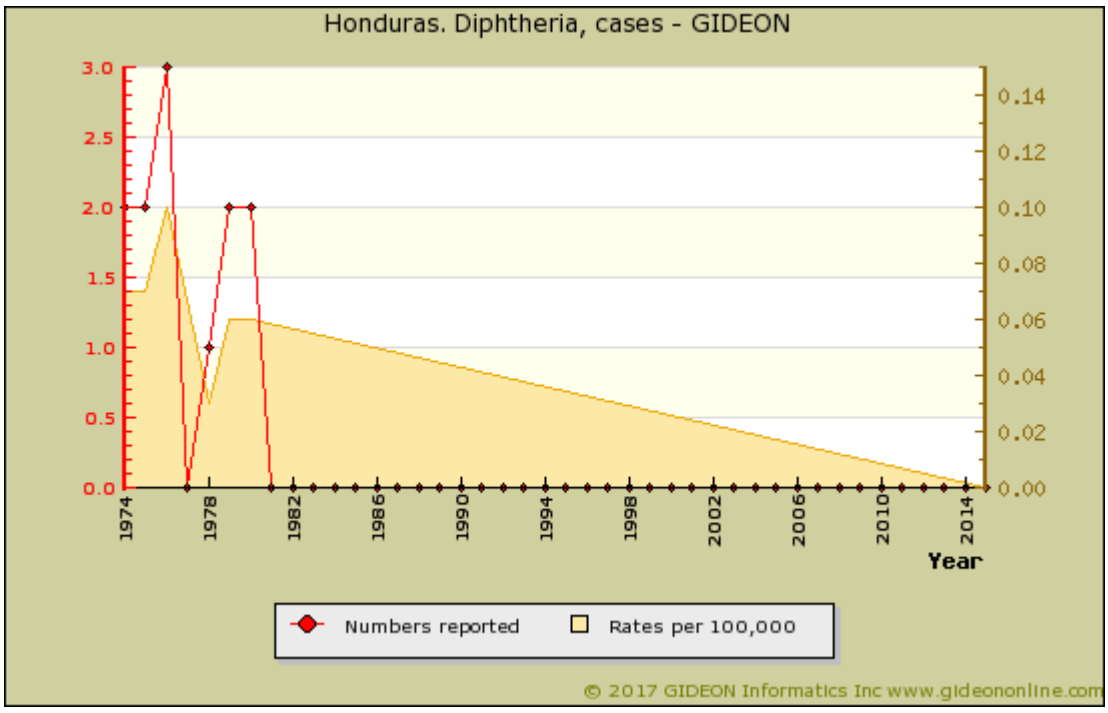
Diphtheria in Honduras

Vaccine Schedule:

BCG - birth
DT - 4,6,18 months; 4 years risk groups
DTwP - 18 months; 4 years
DTwPHibHepB - 2,4,6 months
HepB - birth 1st contact, +1, +6 months for risk groups
HPV - 11 years
IPV - 2,4,6 months (risk groups)
MMR - 12 months
OPV - 2,4,6,18 months
Pneumo conj - 2,4,6 months
Rotavirus - 2,4 months
Td - 11, 21 years and 3 doses for pregnant women not yet vaccinated



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



Graph: Honduras. Diphtheria, cases

Notes:
Individual years:
1999 - One case of "diphtheria under the age of 5" was reported to the Honduran Health Ministry.

Diphyllobothriasis

Agent	PARASITE - Platyhelminthes, Cestoda. Pseudophyllidea, Diphyllobothriidae: *Diphyllobothrium latum*, et al
Reservoir	Human, Dog, Bear, Fish-eating mammal
Vector	None
Vehicle	Fresh-water fish - notably (for *D. latum*) 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, Bandwurmer [Diphyllobothrium], Bothriocephalus acheilongnathi, 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: *Dipylidium caninum*
Reservoir	Dog, Cat
Vector	None
Vehicle	Ingested flea (*Ctenocephalides* 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, Dipylidium caninum, Dog tapeworm, Double-pored dog tapeworm. ICD9: 123.8 ICD10: B71.1

Dirofilariasis

Agent	PARASITE - Nematoda. Secernentea: *Dirofilaria* (*Nochtiella*) *immitis* (pulmonary); *D. tenuis* & *D. repens* (subcutaneous infection) & *D. ursi*
Reservoir	Mammal, Dog, Wild carnivore (*D. tenuis* in raccoons; *D. ursi* 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 Dirofilaria hongkongensis, Dirofilariosis, Dirofiliaria, Dog heartworm, Filaria conjunctivae, Loaina. ICD9: 125.6 ICD10: B74.8

Eastern equine encephalitis

Agent	VIRUS - RNA. Togaviridae, Alphavirus: Eastern equine encephalitis virus
Reservoir	Wild bird, Horse, Cattle, Pig
Vector	Mosquito (*Aedes*, *Culiseta*)
Vehicle	None
Incubation Period	7d - 10d (range 5d - 15d)
Diagnostic Tests	Viral culture (brain tissue, CSF, serum). Serology. Nucleic acid amplification. Biosafety level 2.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Vaccine	Eastern equine encephalitis vaccine
Clinical Hints	infection is most common during summer in temperate areas. Headache, fever, seizures, coma and leukocytosis Neurological sequelae in 40% Case-fatality rates may approach 70%
Synonyms	EEE, Madariaga virus. ICD9: 062.2 ICD10: A83.2

Echinococcosis - unilocular

Agent	PARASITE - Platyhelminthes, Cestoda. Cyclophyllidea, Taeniidae: *Echinococcus granulosus*, *Echinococcus canadensis*
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	Echinococcus canadensis, Echinococcus granulosus, Echinococcus ortleppi, 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

Ehrlichiosis - human monocytic

Agent	BACTERIUM. Anaplasmataceae *Ehrlichia chaffeensis* *Ehrlichia canis* *Neoehrlichia mikurensis*, et al. Intracellular *Rickettsia*-like bacteria
Reservoir	Dog, Tick, Deer, Coyote
Vector	Tick (*Dermacentor variabilis* or *Amblyomma americanum*)
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 Neoehrlichia mikurensis, Cowdria ruminantium, Ehrlichia canis, Ehrlichia chaffeensis, Ehrlichia muris, Ehrlichia runinantium, Ehrlichia sp. Panola Mountain, Human monocytic ehrlichiosis, Human monocytotropic ehrlichiosis, Neoehrlichia mikurensis, Panola Mountain Ehrlichia. ICD9: 082.41 ICD10: B28.8

Endocarditis - infectious

Agent	BACTERIUM OR FUNGUS. viridans streptococci, *Staphylococcus aureus*, enterococci, *Candida albicans*, 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

Enterobiasis

Agent	PARASITE - Nematoda. Secernentea: *Enterobius vermicularis*
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, Pinwom, 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 [Caxsackie. 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

Epidural abscess

Agent	BACTERIUM. *Staphylococcus aureus*, 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: *Streptococcus pyogenes* Cellulitis: *Staphylococcus aureus*, *Streptococcus pyogenes*, 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. *Erysipelothrix rhusiopathiae* 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. *Corynebacterium minutissimum* 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	Corynebacterium minutissimum, Eritrasma. ICD9: 039.0 ICD10: L08.1

Escherichia coli diarrhea

Agent	BACTERIUM. *Escherichia coli* 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 (Enterotoxic E. coli), Hamolytisch-uramisches Syndrom, Hemolytic Uremic Syndrome, HUS. ICD9: 008.0 ICD10: A04.0,A04.1,A04.2,A04.3,A04.4

Fascioliasis

Agent	PARASITE - Platyhelminthes, Trematoda. Echinostomatida, Fasciolidae: *Fasciola hepatica* or *Fasciola gigantica*
Reservoir	Sheep, Cattle, Snail (*Lymnaea*, *Galba*, *Fossaria*)
Vector	None
Vehicle	Food, Aquatic plants, Watercress (*Nasturtium officinale*)
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.

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, Mycocentrospora, 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, Rhytidhysteron, Saccharomyces, Saprochaete, Sarcopodium, Sarocladium, Scedosporium, Septicemia - fungal, Taeniolella, Thielavia, Trichoderma, Truncatella, Ulocladium, Veronacea, Verruconis, Wallemia. 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

GB virus C infection in Honduras

Prevalence surveys

Years	Study Group	%	Notes
1998*	various	2-20	2% of university students, 20% of multi-transfused patients and 12% of hemophiliacs [1]

* indicates publication year (not necessarily year of survey)

References

1. J Clin Microbiol 1998 Jan ;36(1):255-7.

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	History of recent viral illness or vaccination Generalized skin eruption involving the extremities, face and buttocks Lymphadenopathy of the axillae and inguinal region Anicteric hepatitis may occur Illness resolves in 15 to 42 days Rare outbreaks have been reported
Synonyms	Acrodermatitis papulosa infantilis, Papular acrodermititis of childhood, Papulovesicular acrolocated syndrome. ICD9: 693.0 ICD10: L27.8

Giardiasis

Agent	PARASITE - Protozoa. Sarcomastigophora, Metamonada, Trepomonadea. Flagellate: *Giardia lamblia* (*G. intestinalis*, *G. duodenalis*)
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, Giardia duodenalis, Giardia intestinalis, Giardia lamblia, Lambliasis. ICD9: 007.1 ICD10: A07.1

Giardiasis in Honduras

Prevalence surveys

Years	Study Group	%	Notes
1991*	children	61	61% of rural children - accounting for 29% of childhood diarrhea in this population [1]

* indicates publication year (not necessarily year of survey)

References

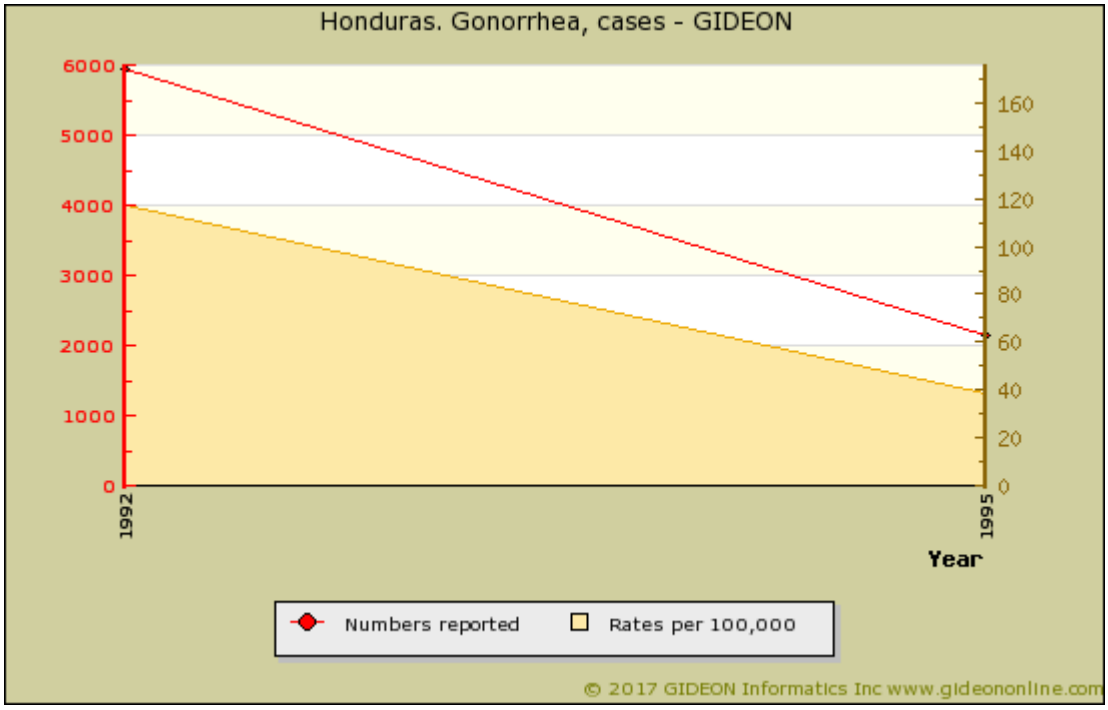
1. Trans R Soc Trop Med Hyg 1991 Jan-Feb;85(1):70-3.

Gonococcal infection

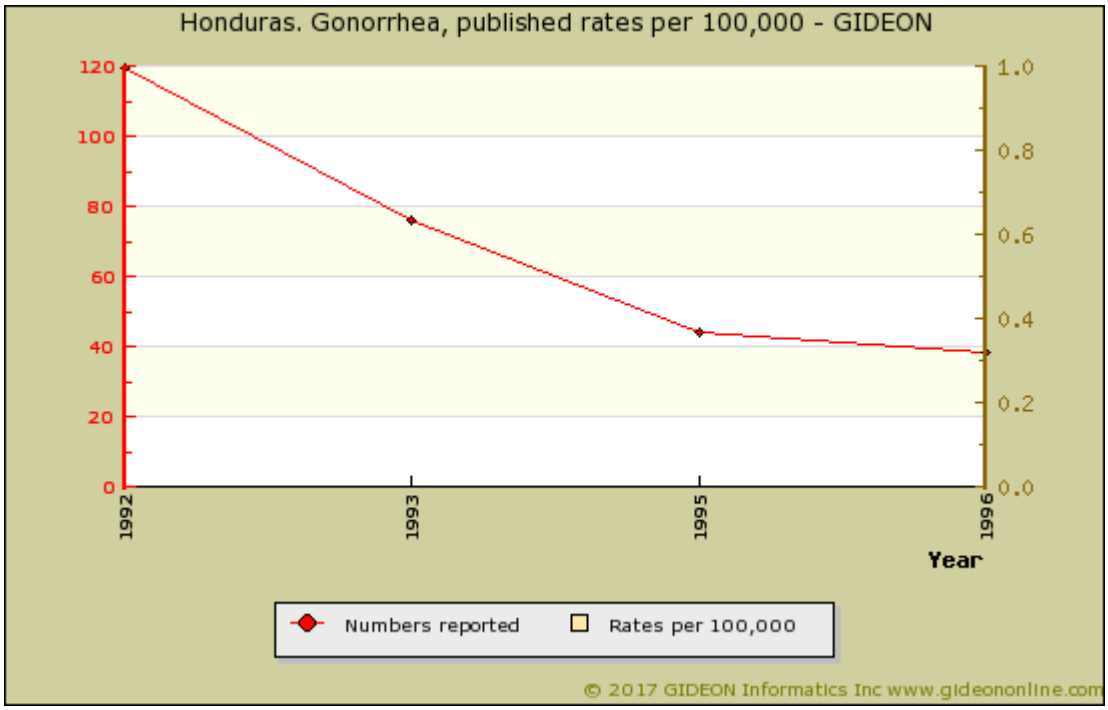
Agent	BACTERIUM. *Neisseria gonorrhoeae* An aerobic gram-negative coccus
Reservoir	Human
Vector	None
Vehicle	Sexual, contact, Childbirth, Exudates, Respiratory or pharyngeal acquisition
Incubation Period	2d - 7d
Diagnostic Tests	Smear (male), culture. Consult laboratory for proper acquisition & transport. 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	Blennorragie, Blenorragia, Gonococcemia, Gonore, Gonorre, Gonorrea, Gonorrhea, Gonorrhee, Gonorrho, Gonorrhoe, Infeccion gonococica, Infeccoes gonococicas, Neisseria gonorrhoeae. ICD9: 098 ICD10: A54

Gonococcal infection in Honduras

Gonorrhea is the fifth most common communicable disease in Honduras.



Graph: Honduras. Gonorrhea, cases



Graph: Honduras. Gonorrhea, published rates per 100,000

Prevalence surveys

Years	Region	Study Group	%	Notes
2009*		indigenous peoples	1.1	1.1% of Garifuna people (urine specimens) [1]
1991*	Tegucigalpa	sex workers	34	25% of CSW in Tegucigalpa have gonorrhea, 31% *Chlamydia*, and 9% both [2]

* indicates publication year (not necessarily year of survey)

References

1. J Acquir Immune Defic Syndr 2009 May 01;51 Suppl 1:S26-34.
2. Int J STD AIDS 1991 May-Jun;2(3):195-9.

Granuloma inguinale

Agent	BACTERIUM. *Klebsiella granulomatis* (formerly *Calymmatobacterium granulomatis*) 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 Doxycyeline
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 A in Honduras

Notable outbreaks

Years	Region	Setting	Cases	Population	Notes
2012	Tegucigalpa	school	16	students	[1]

References

1. ProMED <promedmail.org> archive: 20120828.1268317

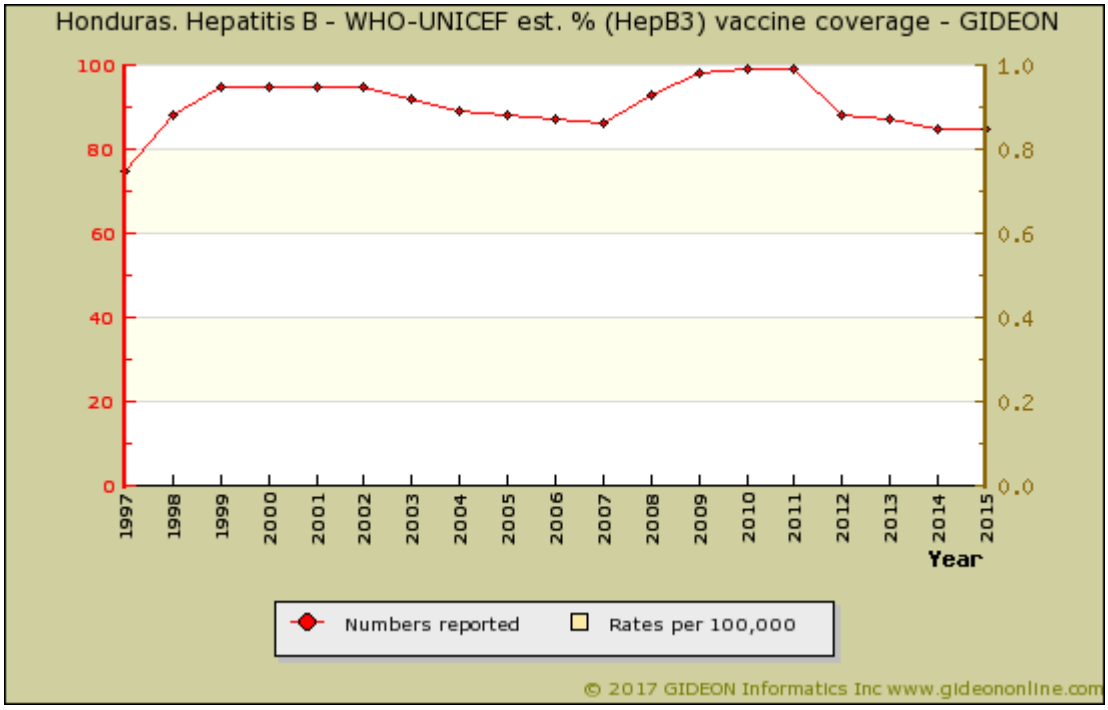
Hepatitis B

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

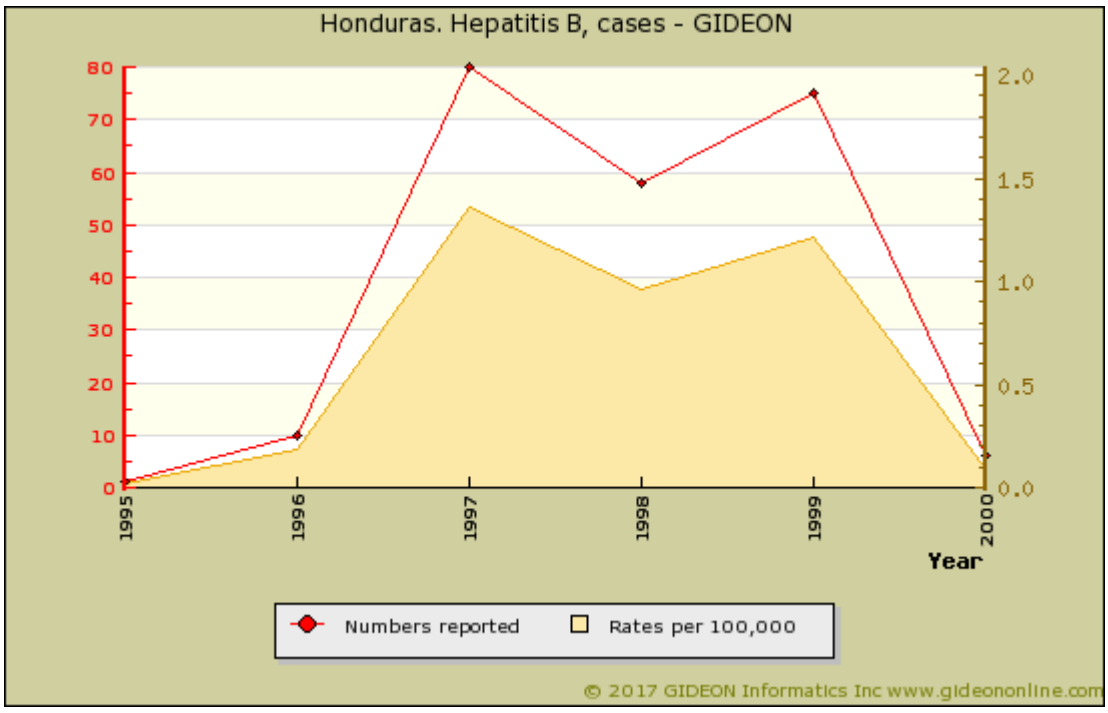
Hepatitis B in Honduras

Vaccine Schedule:

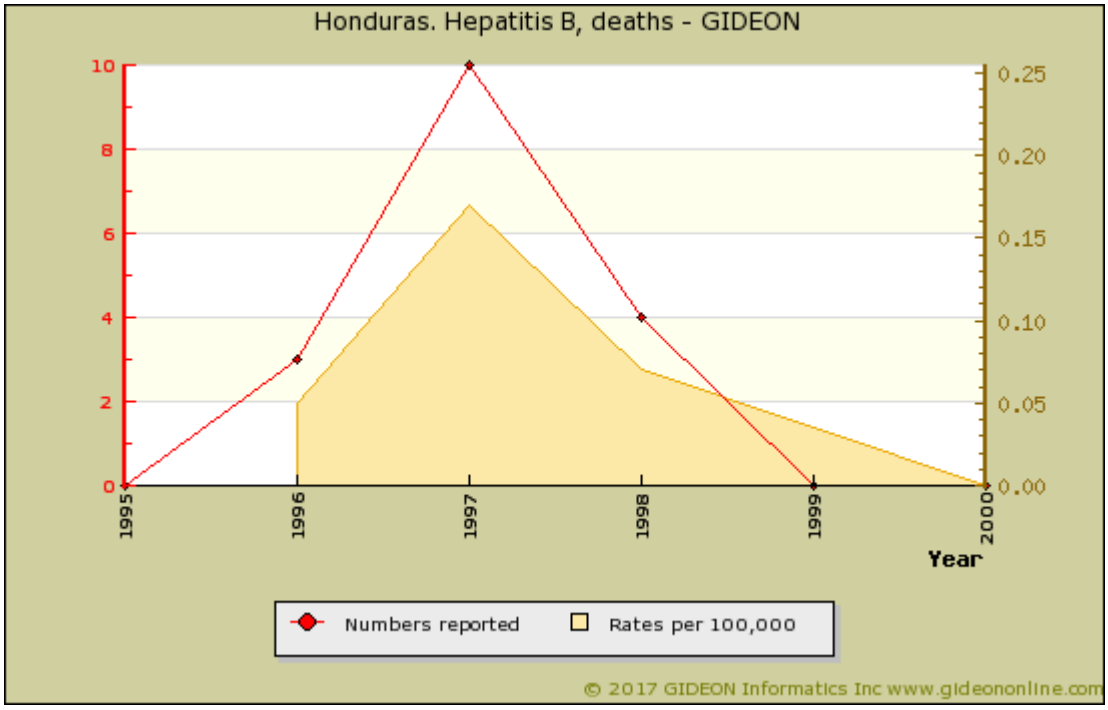
BCG - birth
DT - 4,6,18 months; 4 years risk groups
DTwP - 18 months; 4 years
DTwPHibHepB - 2,4,6 months
HepB - birth 1st contact, +1, +6 months for risk groups
HPV - 11 years
IPV - 2,4,6 months (risk groups)
MMR - 12 months
OPV - 2,4,6,18 months
Pneumo conj - 2,4,6 months
Rotavirus - 2,4 months
Td - 11, 21 years and 3 doses for pregnant women not yet vaccinated



Graph: Honduras. Hepatitis B - WHO-UNICEF est. % (HepB3) vaccine coverage



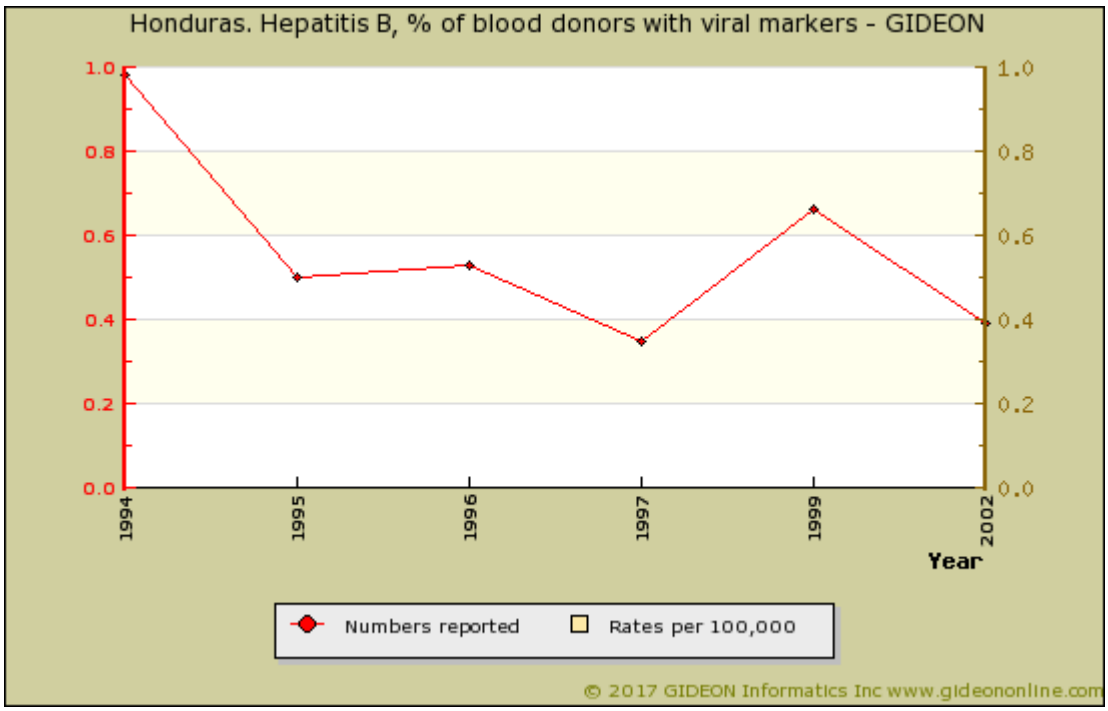
Graph: Honduras. Hepatitis B, cases



Graph: Honduras. Hepatitis B, deaths

HBsAg-positivity surveys

Years	Study Group	%	Notes
	adults	3	3% of adults
1993	blood donors	0.27	0.27% of blood donors in 1993
2000 - 2001	blood donors	0.41	0.41% during 2000 to 2001



Graph: Honduras. Hepatitis B, % of blood donors with viral markers

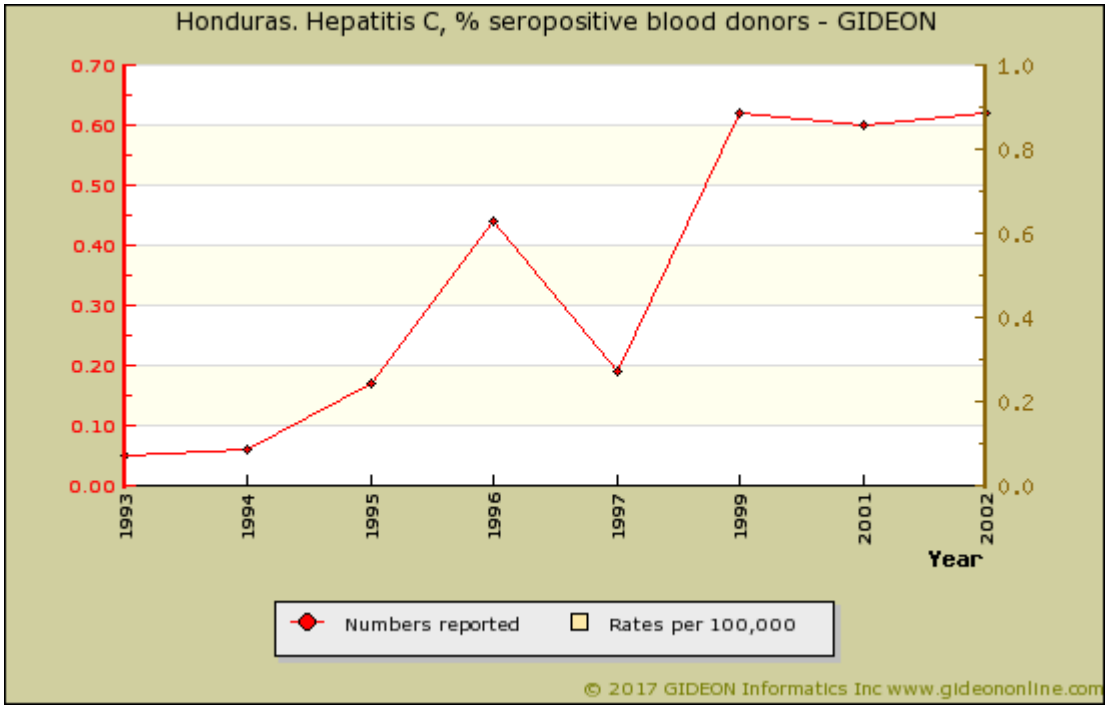
Notes:
1. Nine cases of transfusion-acquired infection were estimated for 1993.

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 Honduras

The nationwide carriage rate in 1997 was estimated at 0.09%.



Graph: Honduras. Hepatitis C, % seropositive blood donors

Ten cases of transfusion-acquired infection were estimated for 1993. [1]

References

1. Emerg Infect Dis 1998 Jan-Mar;4(1):5-11.

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 Honduras

Seroprevalence surveys

Years	Study Group	%	Notes
1998*	military personnel	6	6% of United Nations peacekeepers (1998 publication) [1]

* indicates publication year (not necessarily year of survey)

References

1. 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 (*Macaca species* and *Cynomolgus*)
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 Honduras

Seroprevalence surveys

Years	Study Group	%	Notes
2009*	indigenous peoples	51.1	51.1% of Garifuna people (HSV-2, 2009 publication) [1]

* indicates publication year (not necessarily year of survey)

References

1. J Acquir Immune Defic Syndr 2009 May 01;51 Suppl 1:S26-34.

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: *Histoplasma capsulatum* var. *capsulatum* 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, Histoplasma capsulatum, Histoplasmose, Ohio River Valley Fever, Ohio Valley disease, Reticuloendothelial cytomycosis. ICD9: 115.0 ICD10: B39.0,B39.1,B39.2,B39.3,B39.4

Histoplasmosis in Honduras

Sporadic case reports of histoplasmosis are encountered. [1]

References

1. Ned Tijdschr Geneeskd 1995 Jul 15;139(28):1454-6.

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 Honduras

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

References

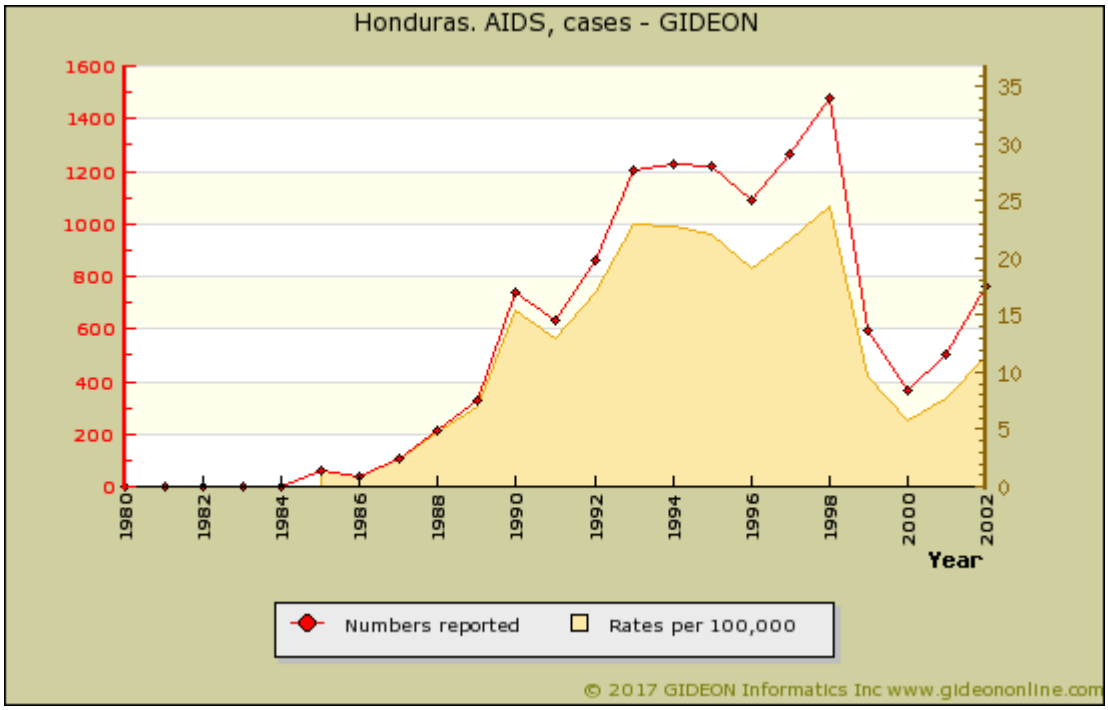
1. Emerg Infect Dis 1998 Jan-Mar;4(1):5-11.
2. J Acquir Immune Defic Syndr 2009 May 01;51 Suppl 1:S26-34.
3. Int J STD AIDS 1991 Mar-Apr;2(2):110-3.
4. PMID 17667337
5. J Acquir Immune Defic Syndr 2007 Sep 01;46(1):101-11.

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

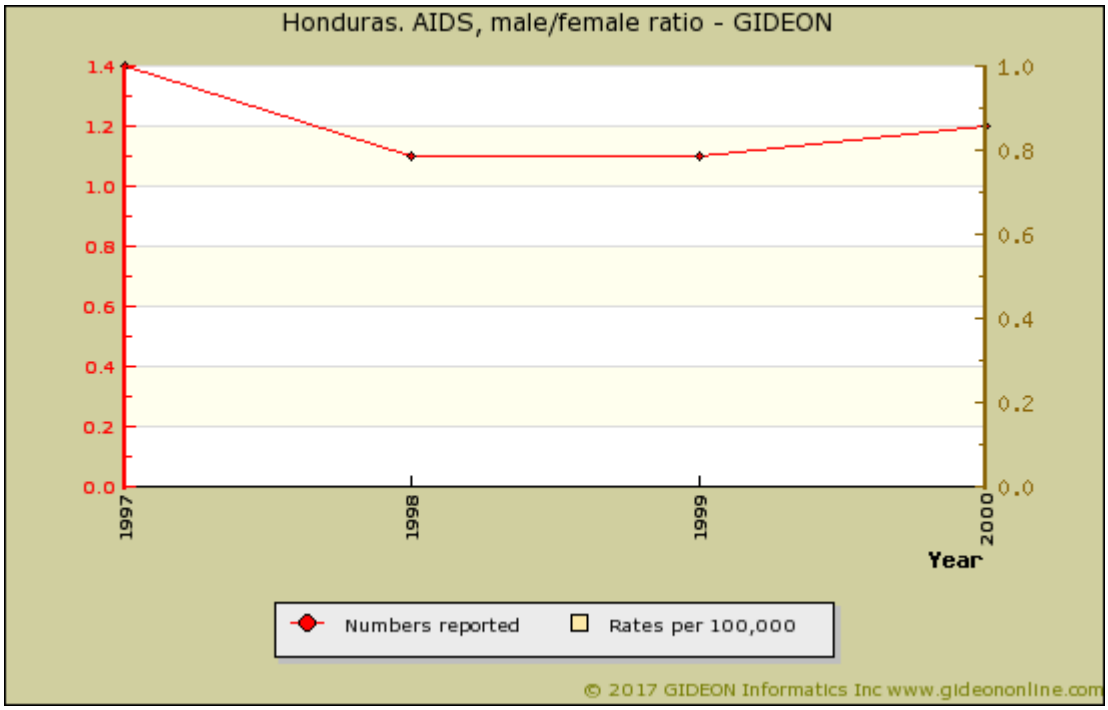
HIV/AIDS in Honduras

The first cases of AIDS were reported in 1985.

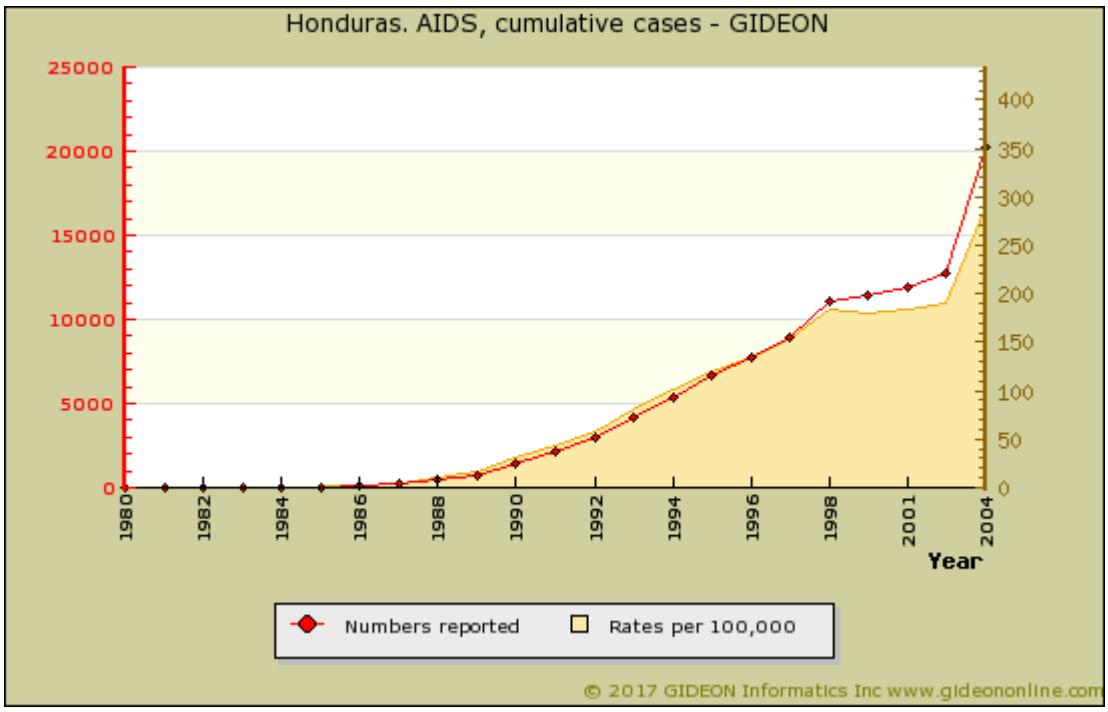


Graph: Honduras. AIDS, cases

Notes:
1. Honduras accounts for approximately 50% of AIDS cases in Central American.



Graph: Honduras. AIDS, male/female ratio

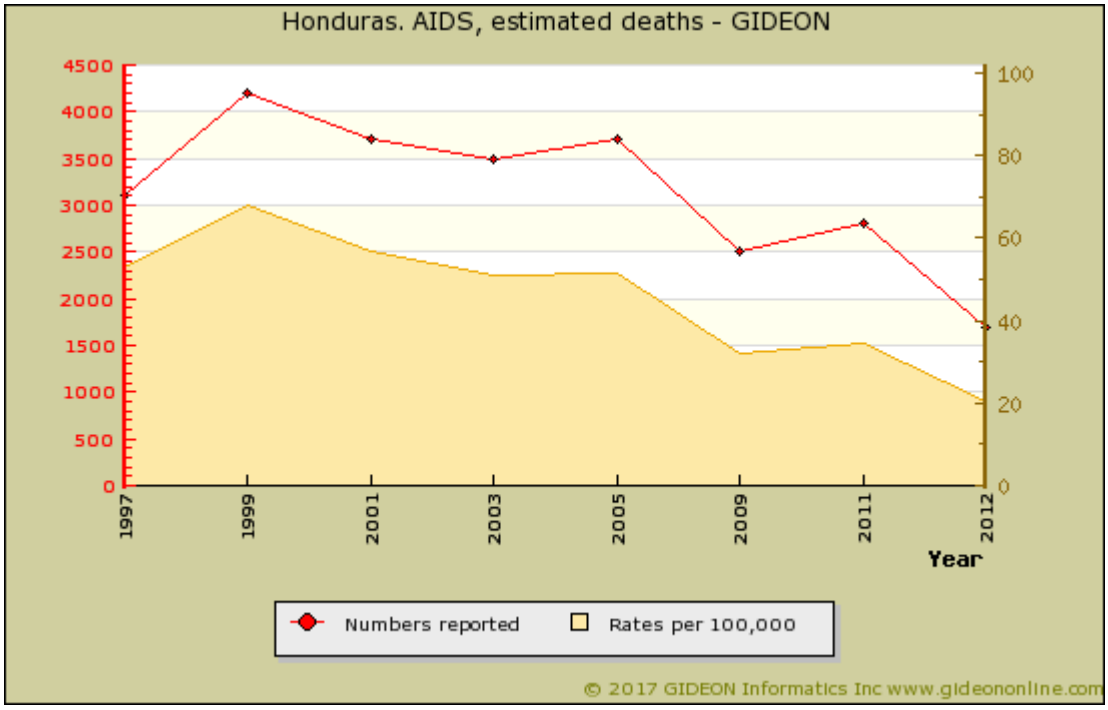


Graph: Honduras. AIDS, cumulative cases

Notes:
1. The true number of AIDS cases to December 1997 was estimated at 16,000.
2. The true number of AIDS cases to June 2004 was estimated at 30,000.

Demography and risk factors:

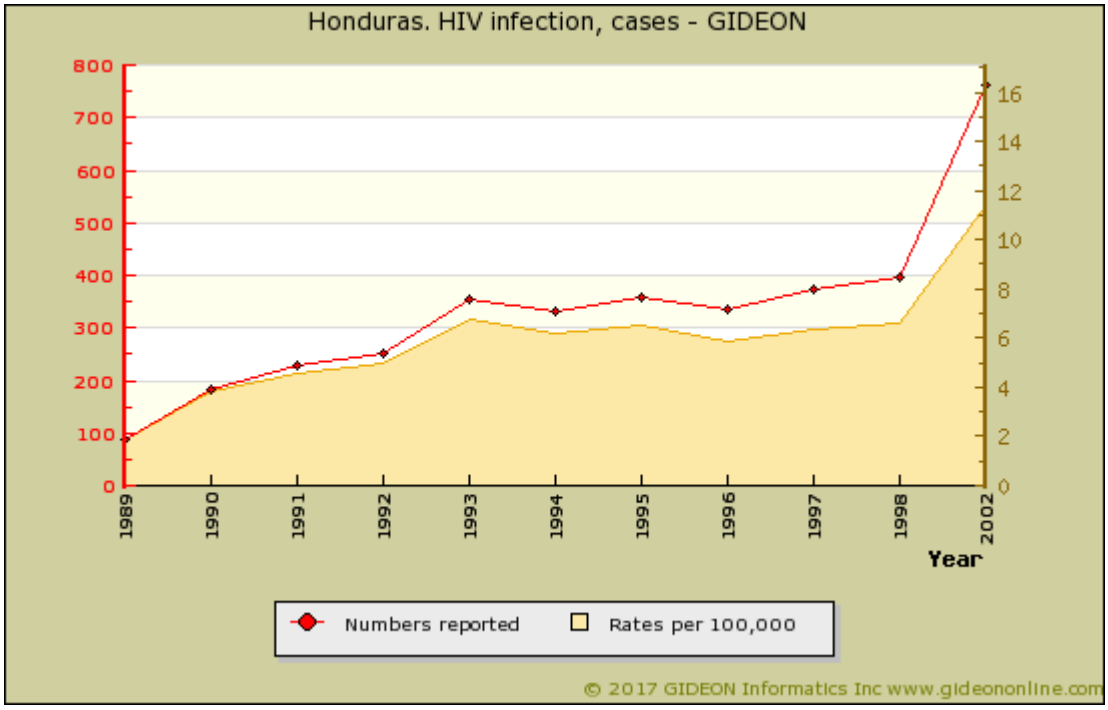
- Cases reported to January 1998: 86% ages 15 to 49; 42% males; 80% heterosexual; 11% men who have sex with men; 8% mother to infant.
- Cases reported during 1996 to 1997: 85% ages 15 to 49; 63% males. During 1995 to 1997: 74% heterosexual; 13% men who have sex with men; 0% IDU; 1% transfusion/hemophilia; 12% mother to infant.
- Cases during 1997 to 2000: 86% ages 15 to 49; 55% males; 72% heterosexual; 18% men who have sex with men; 0% IDU; 0% transfusion/hemophilia; 7% mother to infant.



Graph: Honduras. AIDS, estimated deaths

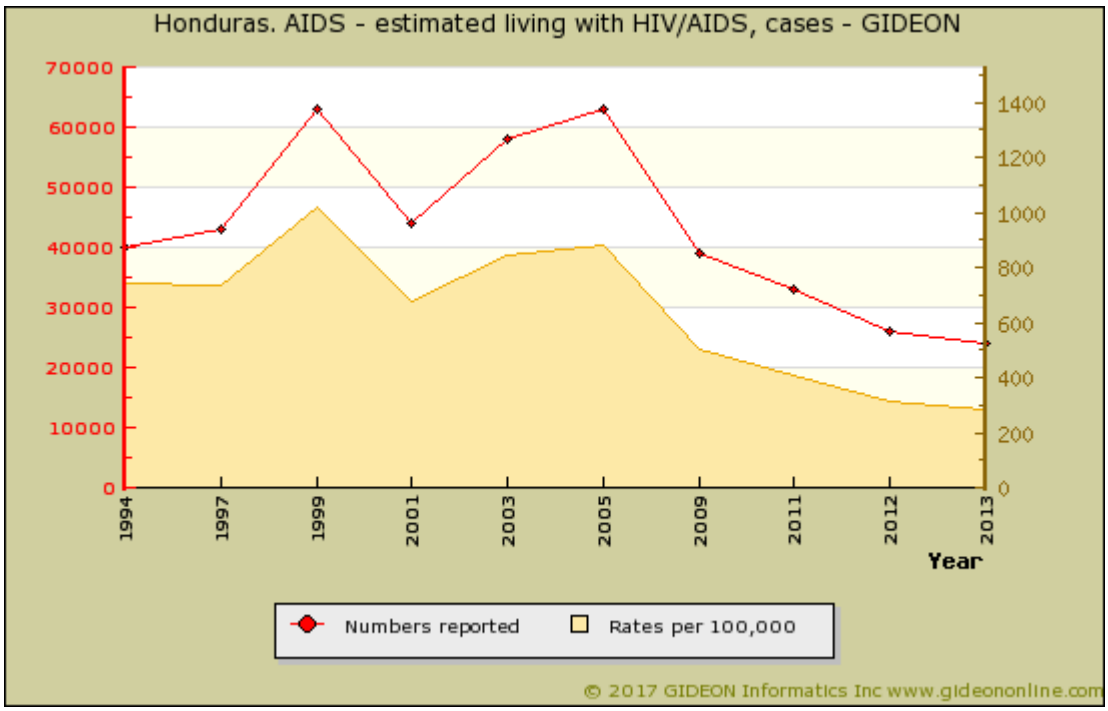
Notes:
1. 1,081 AIDS deaths were officially reported to December 2000.
2. The true number of AIDS deaths to December 1997 is estimated at 15,000.
3. 1,041 AIDS deaths were reported to 1996.
4. 19,000 AIDS orphans were estimated to December 1999; 14,000 in 2001.

55.6% of cases are reported from San Pedro Sula and 15.9% from Tegucigalpa.



Graph: Honduras. HIV infection, cases

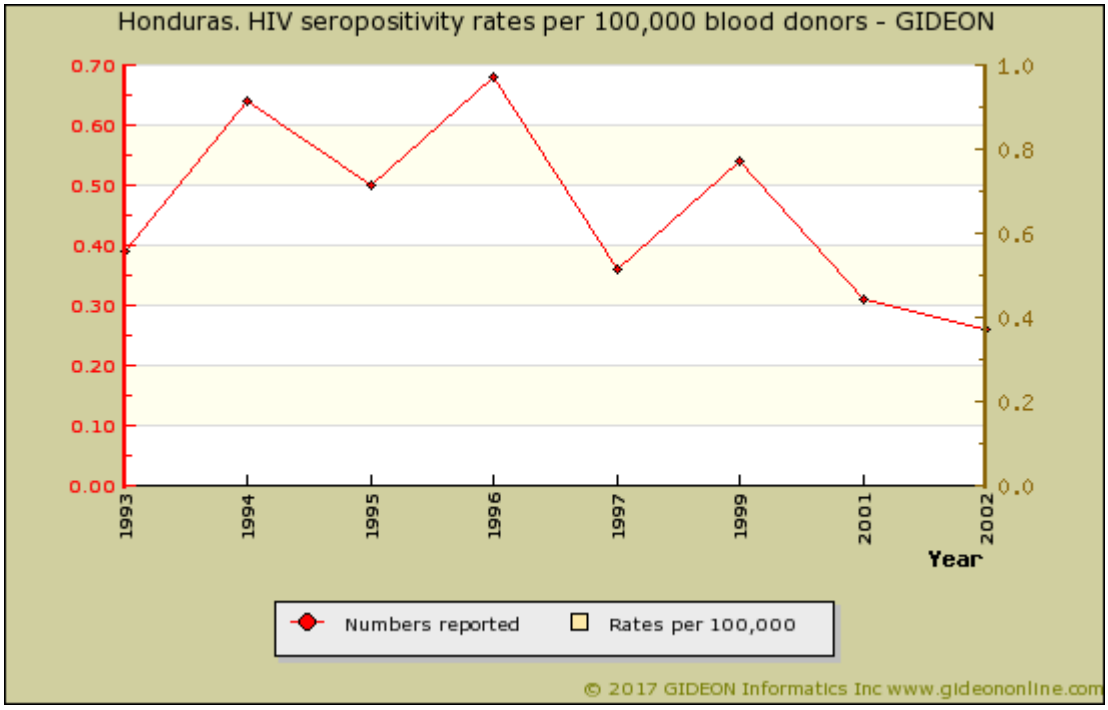
Notes:
1. A total of 11,789 seropositives were reported to December 2000.



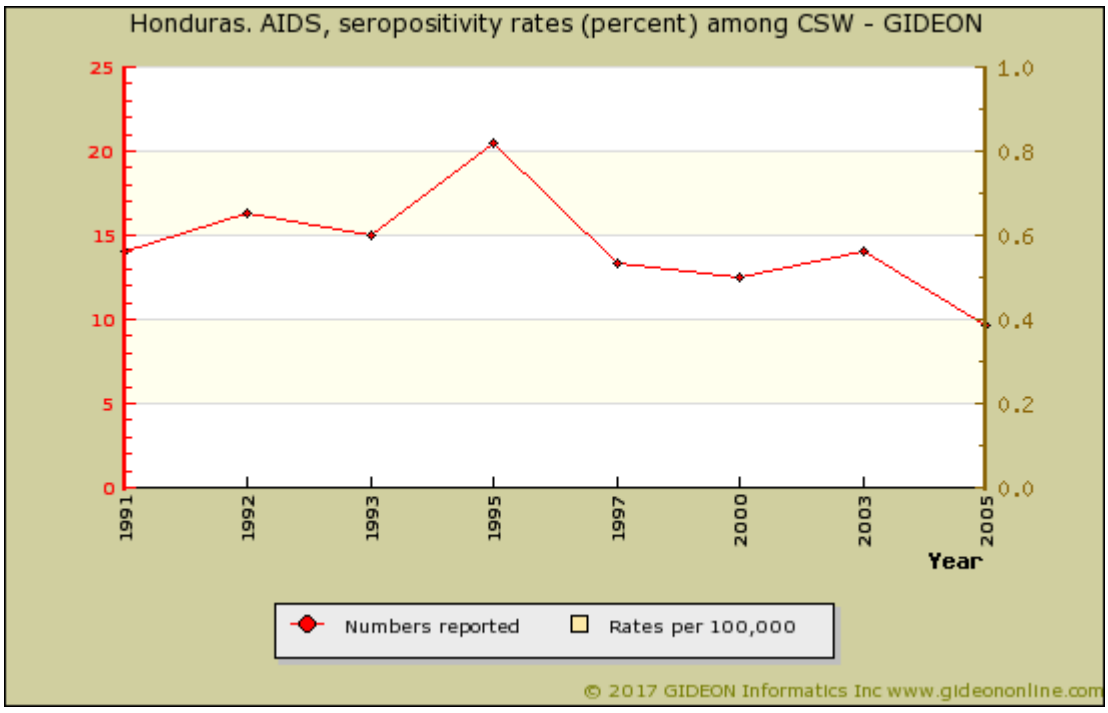
Graph: Honduras. AIDS - estimated living with HIV/AIDS, cases

Notes:
1. Figure for 1997 represented 1.46% of adults ages 15 to 49; 1.6% in 2001; 1.8% in 2003

The risk for HIV infection through blood transfusion was 9 per 10,000 in 1993. [1]



Graph: Honduras. HIV seropositivity rates per 100,000 blood donors



Graph: Honduras. AIDS, seropositivity rates (percent) among CSW

Seroprevalence surveys

Years	Region	Study Group	%	Notes
2008		general population	0.68	
2009*		general population	4.5	4.5% of Garifuna people [2]
2001		MSM	8.2	
2005		MSM	13	

Years	Region	Study Group	%	Notes
2006	Tegulcigalpa	MSM	6.6	
2001		patients - tuberculosis	8	
1993	multiple locations	pregnant women	0.3-2.5	0.3% (Tegulcigalpa) to 2.5% (San Pedro Sula)
1995		pregnant women	4.1	urban pregnant women
1998		pregnant women	3	rural pregnant women
1998		pregnant women	2.9	urban pregnant women
1998		prisoners	7	
1991*		sex workers	4	3
2000		sex workers	12.5	
2005		sex workers	9.7	
2006		sex workers	2.3	
2007*		sex workers	9.6	4
2007*		sex workers	9.6	5

* indicates publication year (not necessarily year of survey)

46% of syphilitic men who have sex with men are HIV-positive (2002 to 2003).

References

1. Emerg Infect Dis 1998 Jan-Mar;4(1):5-11.
2. J Acquir Immune Defic Syndr 2009 May 01;51 Suppl 1:S26-34.
3. Int J STD AIDS 1991 Mar-Apr;2(2):110-3.
4. J Acquir Immune Defic Syndr 2007 Sep 01;46(1):101-11.
5. J Acquir Immune Defic Syndr 2007 Sep 01;46(1):101-11.

Hookworm

Agent	PARASITE - Nematoda. Secernentea: *Necator americanus*, *Ancylostoma duodenale*, *A. ceylonicum* (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 Honduras

Prevalence surveys

Years	Region	Study Group	%	Notes
2011		children	15.9	15.9% of rural school children (2011) [1]
2011		children	16	16% of rural school-age children (2011) [2]
2014*		children	0.9	0.9% of 3rd to 5th grade school children (2014 publication) [3]
2009 - 2011	Tegucigalpa	patients	5	5% of patients at a hospital in Tegucigalpa (2009 to 2011) [4]
2004*		patients - HIV/AIDS	12	12% of HIV-positive patients (2004 publication) [5]

* indicates publication year (not necessarily year of survey)

Prevalence rates exceed 20% in 7.2% of municipalities (1930 to 2012) [6]

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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 Honduras

Seroprevalence surveys

Years	Study Group	%	Notes
1995*	general population	0.5-8.1	8.1% of non-mestizo and 0.5% of mestizo communities along the Atlantic coast (1995 publication) [1]

* indicates publication year (not necessarily year of survey)

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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: *Hymenolepis diminuta*
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: *Hymenolepis* (*Rodentolepis*) *nana*
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, Hymenolepis nana, Rodentolepis microstoma, Rodentolepis nana, Rodentolepsiasis, Vampirolepis nana. ICD9: 123.6 ICD10: B71.0

Hymenolepis nana infection in Honduras

Prevalence surveys

Years	Study Group	%	Notes
1991*	children	8	8% of rural children with diarrhea (1991 publication) [1]

* indicates publication year (not necessarily year of survey)

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Ilheus and Bussuquara

Agent	VIRUS - RNA. Flaviviridae, Flavivirus. Ilheus virus and Bussuquara virus
Reservoir	Wild bird
Vector	Mosquito (*Aedes*, *Culex*, *Coquillettidia*, *Haemagogus*, *Psorophora*, *Sabethes*, *Trichoprosopon* and *Wyeomyia* spp.)
Vehicle	None
Incubation Period	Unknown
Diagnostic Tests	Viral culture (blood). Serology. Biosafety level 4.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Fever, headache, arthralgia and myalgia Encephalitis occasionally encountered No fatalities or complications reported to date
Synonyms	Bussuquara, Cacipacore, Ilheus. ICD9: 062.8 ICD10: A83.8

Infection of wound, puncture, IV line, etc

Agent	BACTERIUM. *Staphylococcus aureus*, 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 *Streptococcus* or *Cl. perfringens* 2 to 7 days = *S. aureus* 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 Honduras

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.

Notable outbreaks

Years	Deaths	Pathogen	Notes
2009 - 2010	18	H1N1	An outbreak was reported. For comprehensive analyses of the H1N1 pdm09 pandemic see the Worldwide note.

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Intestinal spirochetosis

Agent	BACTERIUM. *Brachyspira pilosicoli* and *B. aalborgi* 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 Brachyspira 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, *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, 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 thromobosis, Transverse sinus thrombosis. ICD9: 325 ICD10: G08

Isosporiasis

Agent	PARASITE - Protozoa. Apicomplexa, Eimeriida: *Isospora* (*Cystoisospora*) *belli*
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

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	Angiolymphoid hyperplasia, Angiolymphoid hyperplasia-eosinophia, Eosinophilic follicular lymphadenitis, Histiocytic necrotizing lymphadenitis, Kikuchi's disease, Kikuchi-Fujimoto disease, Kimura disease. ICD9: 289.3 ICD10: I89.8

Kingella infection

Agent	BACTERIUM. *Kingella kingae*, 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, *Mycoplasma*, 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

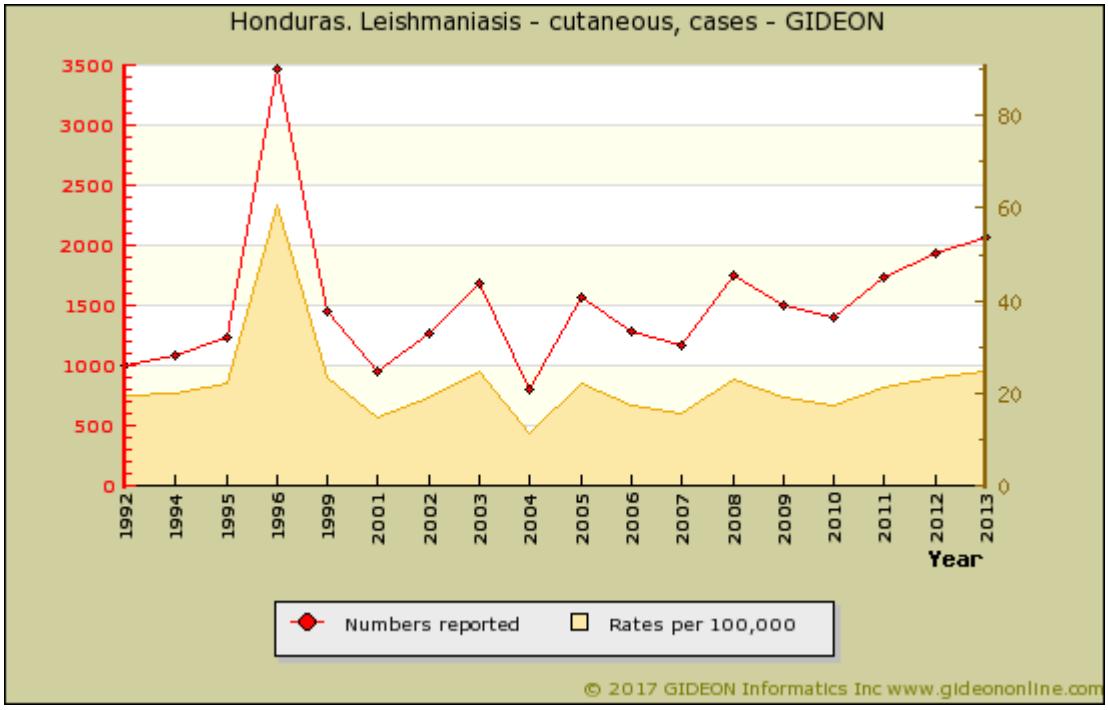
Agent	BACTERIUM. *Legionella pneumophila*, et al An aerobic gram-negative bacillus
Reservoir	Water
Vector	None
Vehicle	Water, Aerosols, Droplet, Respiratory or pharyngeal acquisition
Incubation Period	5- 6d (range 2-12d); Pontiac fever = 1-2d
Diagnostic Tests	Serology. Culture. Urine antigen (certain types). Nucleic acid amplification. Alert lab if organism suspected.
Typical Adult Therapy	Fluoroquinolone (Levofloxacin, Trovafloxacin, 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

Leishmaniasis - cutaneous

Agent	PARASITE - Protozoa. Euglenozoa, Kinetoplastea. Flagellate: *Leishmania tropica*, et al
Reservoir	Human, Hyrax, Rodent, Marsupial, Dog, Sloth, Anteater, Armadillo, Bat
Vector	Sandfly (*Phlebotomus* for Old-world; *Lutzomyia* or *Psychodopygus* for New-world)
Vehicle	None
Incubation Period	2w - 8w (range 1w - months)
Diagnostic Tests	Identification of organism on smear or specialized culture. Nucleic acid amplification
Typical Adult Therapy	Pentavalent antimonials 20 mg/kg/d IV or IM X 21d & / or topical paromomycin. Alternatives: L. major - Fluconazole or Azithromycin, PO L. mexicana or L. panamensis - Ketoconazole, PO L. braziliensis - Azithromycin, PO
Typical Pediatric Therapy	As for adult
Clinical Hints	Chronic ulcerating skin nodule May be painless (*Leishmania tropica*) or painful (*L. major*) Diffuse infection or regional lymphadenopathy are occasionally encountered
Synonyms	Aleppo button, Antep boil, Baghdad boil, Bay sore, Bejuco, Biskra boil, Boessie-Yassi, Bolho, Boschyaws, Bosjaws, Bush yaws, Busi-yasi, Chiclero ulcer, Cutaneous leishmaniasis, Delhi ulcer, Domal, El-Mohtafura, Forest yaws, Gafsa boil, Granuloma endemicum, Hashara, Jericho boil, Kaal Daana, Kandahar sore, Leishmania enriettii, Leishmania major, Leishmania martiniquensis, Leishmania tropica, Leishmania waltoni, Leishmaniasis, Leishmaniose: Kutane, Leishmaniosi cutanea, Lepra de montana, Liana, Okhet, One-year boil, Oriental sore, Pendjeh sore, Pian bois, Saldana, Ulcera de Bejuco, Urfa boil, Uta, Yatevi, Year boil. ICD9: 085.1,085.2,085.3,085.4 ICD10: B55.1

Leishmaniasis - cutaneous in Honduras

Time and Place:
- Leishmaniasis is most common in El Paraiso, Olancho, Santa Barbara and Yoro.



Graph: Honduras. Leishmaniasis - cutaneous, cases

Notes:

1. 1,159 cases per year were reported during 2006 to 2008 (true number estimated at 3,200 to 5,300 per year). [1]
   Individual years:
   1995 - 70% from Olancho Department.
   1996 - 1,678 ulcerated cutaneous and 1,781 non-ulcerated cutaneous.
   2015 - Over 200 cases were reported in Cortes Department. [2]

Infecting species:

- The predominant species is *Leishmania panamensis*; however, sporadic cases are due to *L. braziliensis*, *L. mexicana* and *Leishmania chagasi/infantum*. [3] [4]

Vectors:

- The local vector is *Lutzomyia longipalpis*. [5]

References

1. PLoS One 2012 ;7(5):e35671.
2. ProMED <promedmail.org> archive: 20151003.3688613
3. Exp Parasitol 2005 Apr ;109(4):209-19.
4. Exp Parasitol 1997 Mar ;85(3):264-73.
5. Ann Trop Med Parasitol 1998 Dec ;92(8):869-76.

Leishmaniasis - mucocutaneous

Agent	PARASITE - Protozoa. Euglenozoa, Kinetoplastea. Flagellate: *Leishmania braziliensis*, et al
Reservoir	Rodent, Human, Sloth, Marsupial
Vector	Sandfly (*Lutzomyia* or *Psychodopygus*)
Vehicle	None
Incubation Period	2w - 8w (range 1w - 6m)
Diagnostic Tests	Microscopy (culture in specialized laboratories). Serology. Nucleic acid amplification.
Typical Adult Therapy	Pentavalent antimonials (Stibogluconate) 20 mg/kg/d IV/IM X 28d. OR Amphotericin B 0.5 mg/kg/d X 4 to 8w High dose (8 mg/kg/day) Fluconazole has been used against Leishmania braziliensis
Typical Pediatric Therapy	As for adult
Clinical Hints	Skin ulceration or nasopharyngitis associated with purulent, mucoid exudate The process may extend to underlying soft tissues Metastatic lesions often involve the palate and pharynx
Synonyms	Agla, Espundia, Mucocutaneous leishmaniasis. ICD9: 085.5 ICD10: B55.2

Leishmaniasis - mucocutaneous in Honduras

The disease is most common in Olancho, El Paraiso, Santa Barbara and Yoro.

238 cases were reported in 1996.

1,454 cases of "leishmaniasis" (? all forms) were reported in 1999.

Leishmaniasis - visceral

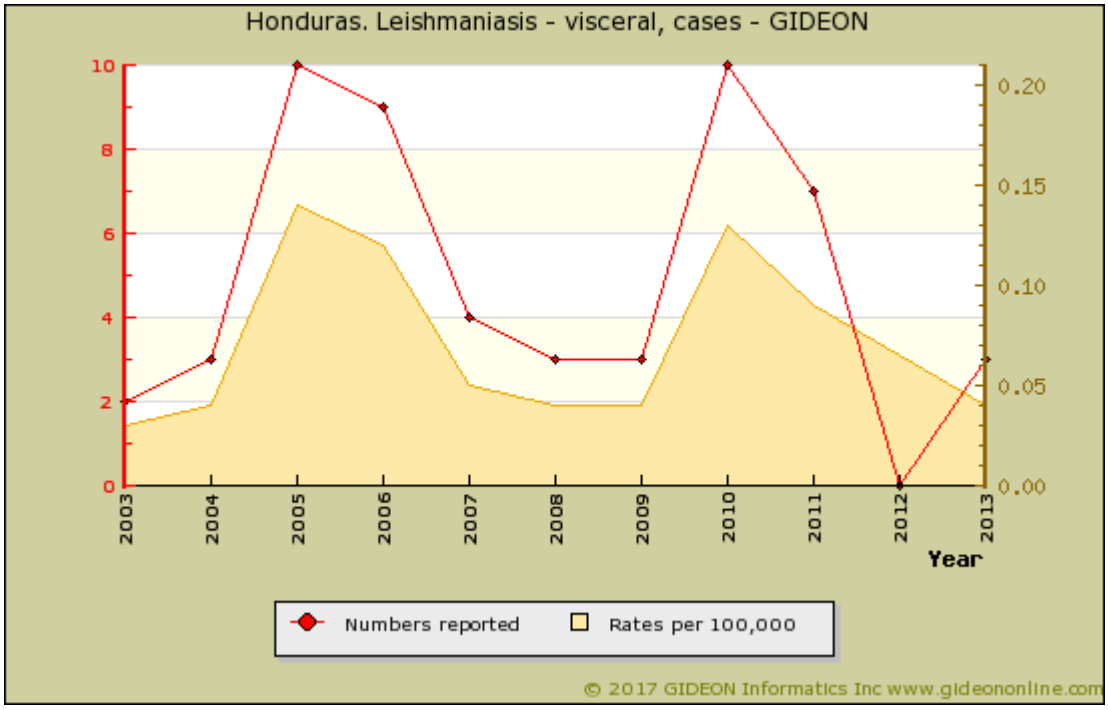
Agent	PARASITE - Protozoa. Euglenozoa, Kinetoplastea. Flagellate: *Leishmania donovani*, *L. infantum*, *L. cruzi*; rarely, *L. tropica*
Reservoir	Human, Rodent, Dog, Fox, Hares
Vector	Sandfly (*Phlebotomus* for Old-world; *Lutzomyia* for New-world)
Vehicle	Blood
Incubation Period	2m - 6m (10d - 12m)
Diagnostic Tests	Smear / culture of bone marrow, splenic aspirate, lymph nodes. Serology. Nucleic acid amplification.
Typical Adult Therapy	Pentavalent antimonials (Stibogluconate) 20 mg/kg/d X 28d. OR Amphotericin B 1 mg/kg/QOD X 8w (or lipid complex 3 mg/kg/d X 5d) OR Paromomycin 11 mg/kg IM QD X 21 days OR Miltefosine 50 to 150 mg PO daily X 4 to 6 weeks.
Typical Pediatric Therapy	Pentavalent antimonials (Stibogluconate) 20 mg/kg/d X 28d. OR Amphotericin B 1 mg/kg/QOD X 8w (or lipid complex 3 mg/kg/d X 5d) OR Paromomycin 11 mg/kg IM QD X 21 days OR Miltefosine 2.5 mg/kg daily (maximum 150 mg) X 28d
Clinical Hints	Chronic fever, weight loss, diaphoresis, hepatosplenomegaly, lymphadenopathy and pancytopenia Grey pigmentation (Kala Azar = "black disease') may appear late in severe illness Case-fatality rates vary from 5% (treated) to 90% (untreated)
Synonyms	Burdwan fever, Cachectic fever, Dum Dum fever, Kala azar, Leishmania donovani, Leishmania infantum, Leishmania siamensis, Leishmania tarentolae, Leishmaniose: Viszerale, Leishmaniosi viscerale, Ponos, Visceral leishmaniasis. ICD9: 085.0 ICD10: B55.0

Leishmaniasis - visceral in Honduras

Time and Place:

Most cases of visceral leishmaniasis are reported from the southern region, in Choluteca, Valle and El Paraiso Departments. [1]

- 210 proven cases were reported from the southern region during 1974 to 1990; 169 nationwide in 1996.
- 53 proven cases and 16 suspected cases were reported during 1975 to 1983 - including 16 in 1978 and 4 in 1982. [2]
- 6 cases per year were reported during 2004 to 2008 (true number estimated at 7 to 10 per year). [3]
- 1,454 cases of "leishmaniasis" (? all forms) were reported in 1999.



Graph: Honduras. Leishmaniasis - visceral, cases

Local disease is due to *Leishmania chagasi*. [4]

- *L. chagasi* causes both cutaneous and visceral disease in Honduras. [5] [6]

The local vector is *Lutzomyia longipalpis*. [7]

References

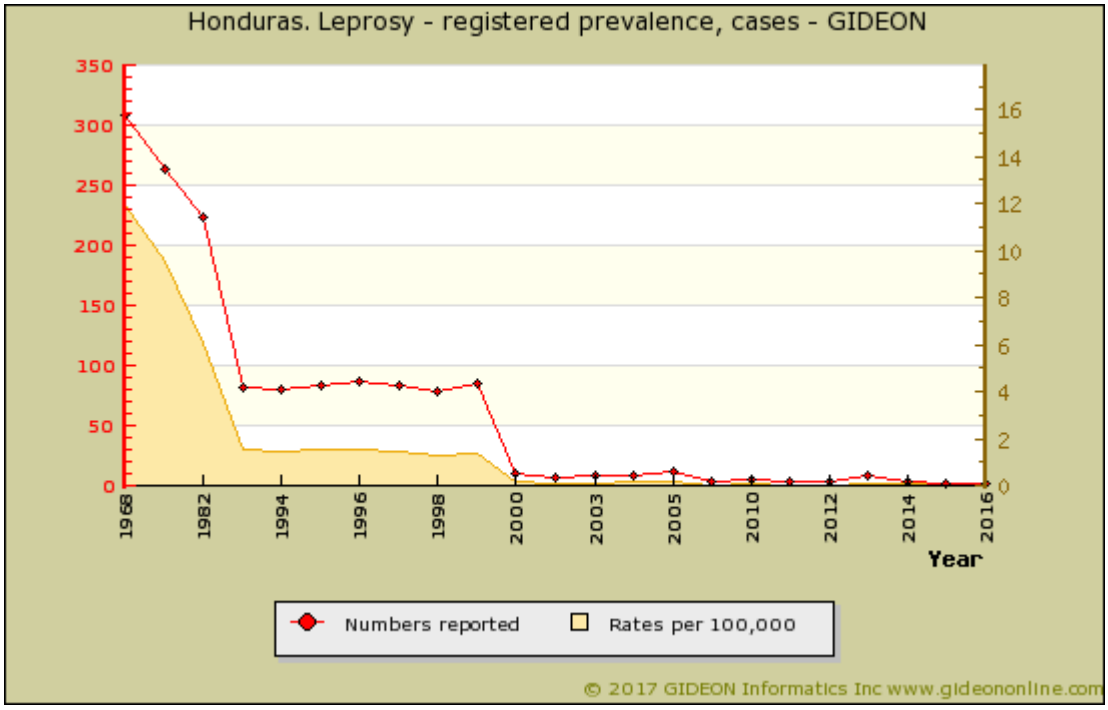
1. ProMED <promedmail.org> archive: 20151003.3688613
2. Am J Trop Med Hyg 1985 Nov ;34(6):1069-75.
3. PLoS One 2012 ;7(5):e35671.
4. Exp Parasitol 2005 Apr ;109(4):209-19.
5. Exp Parasitol 1997 Mar ;85(3):264-73.
6. Lancet 1991 Jan 12;337(8733):67-70.
7. Ann Trop Med Parasitol 1996 Oct ;90(5):533-41.

Leprosy

Agent	BACTERIUM. *Mycobacterium leprae* *Mycobacterium lepromatosis* 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, Mycobacterium leprae, Mycobacterium lepromatosis. ICD9: 030 ICD10: A30

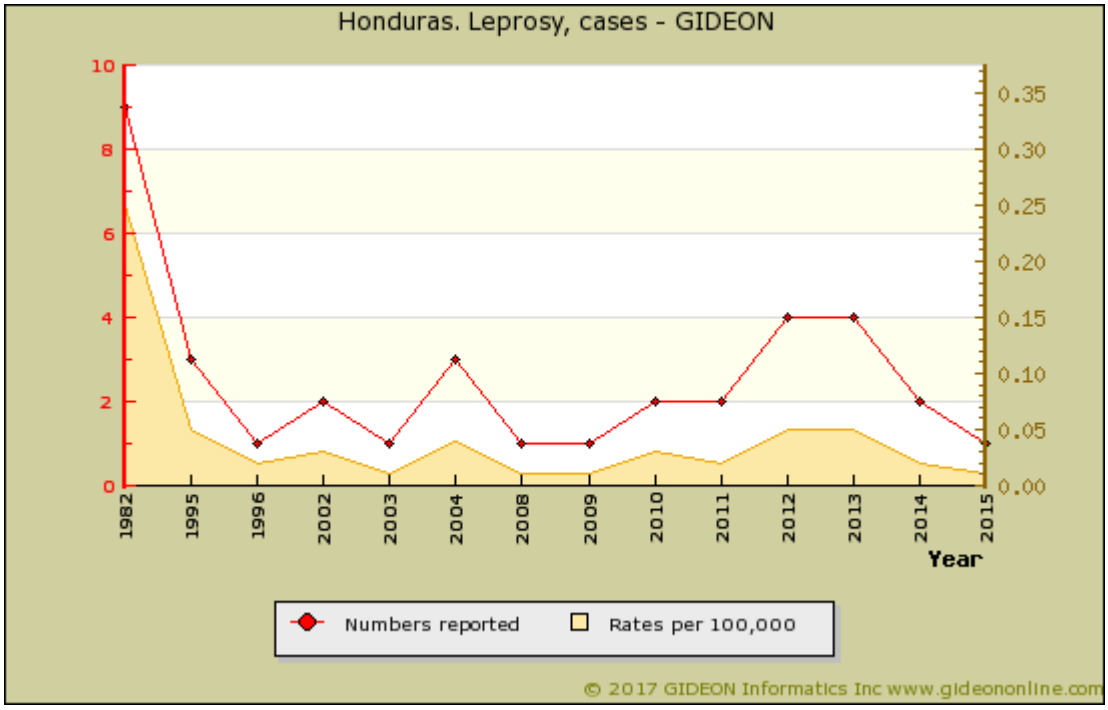
Leprosy in Honduras

Highest prevalence rates of leprosy are found in Choluteca and Valle Departments.



Graph: Honduras. Leprosy - registered prevalence, cases

Notes:
Individual years:
1974 - True number estimated at 526 cases.
1982 - True number estimated at 446 cases (10 per 100,000).

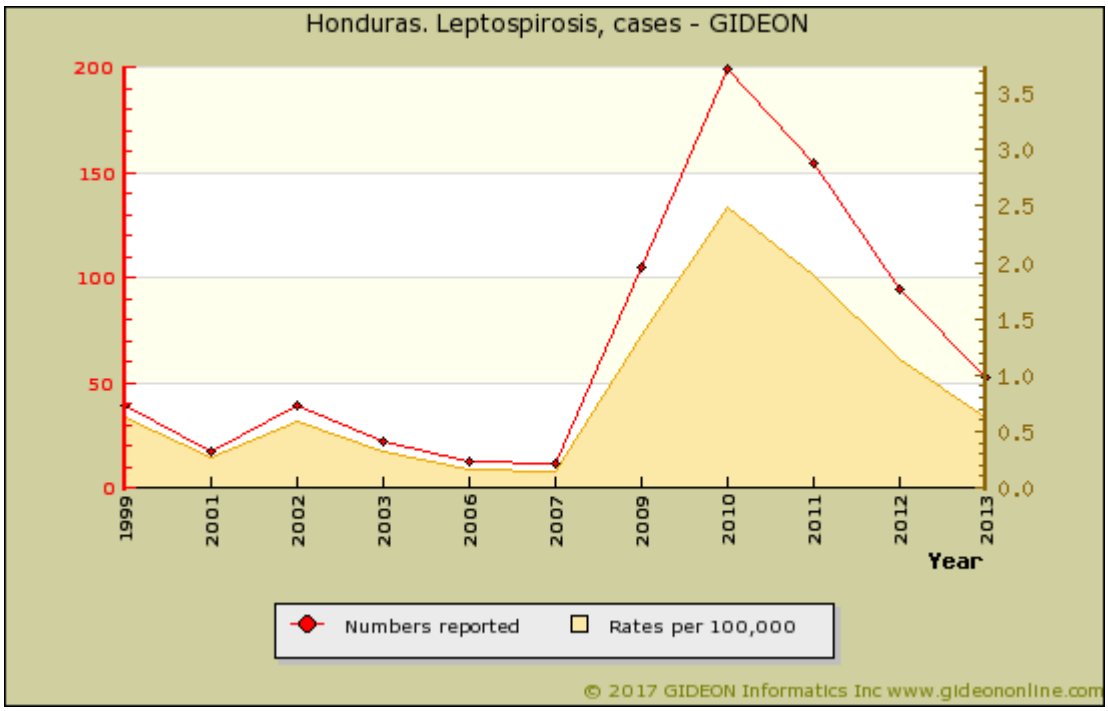


Graph: Honduras. Leprosy, cases

Leptospirosis

Agent	BACTERIUM. *Leptospira interrogans*, 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 Honduras



Graph: Honduras. Leptospirosis, cases

Notable outbreaks

Years	Region	Setting	Cases	Deaths	Source	Notes
1998		flooding	68	4	water	Outbreak followed a hurricane. [1]
2011*	Southern Region		5			

* indicates publication year (not necessarily year of outbreak)

References

1. MEDICC Rev 2008 Jul ;10(3):38-42.

Listeriosis

Agent	BACTERIUM. *Listeria monocytogenes* 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

Liver abscess - bacterial

Agent	BACTERIUM. Various species from portal (Bacteroides, mixed aerobe-anaerobe) or biliary (*Escherichia coli*, etc) source
Reservoir	Human
Vector	None
Vehicle	Endogenous
Incubation Period	Variable
Diagnostic Tests	Ultrasonography, CT or radionucleotide 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

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, *Chlamydia trachomatis*, 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 lymfogranulom. ICD9: 099.1 ICD10: A55

Malaria

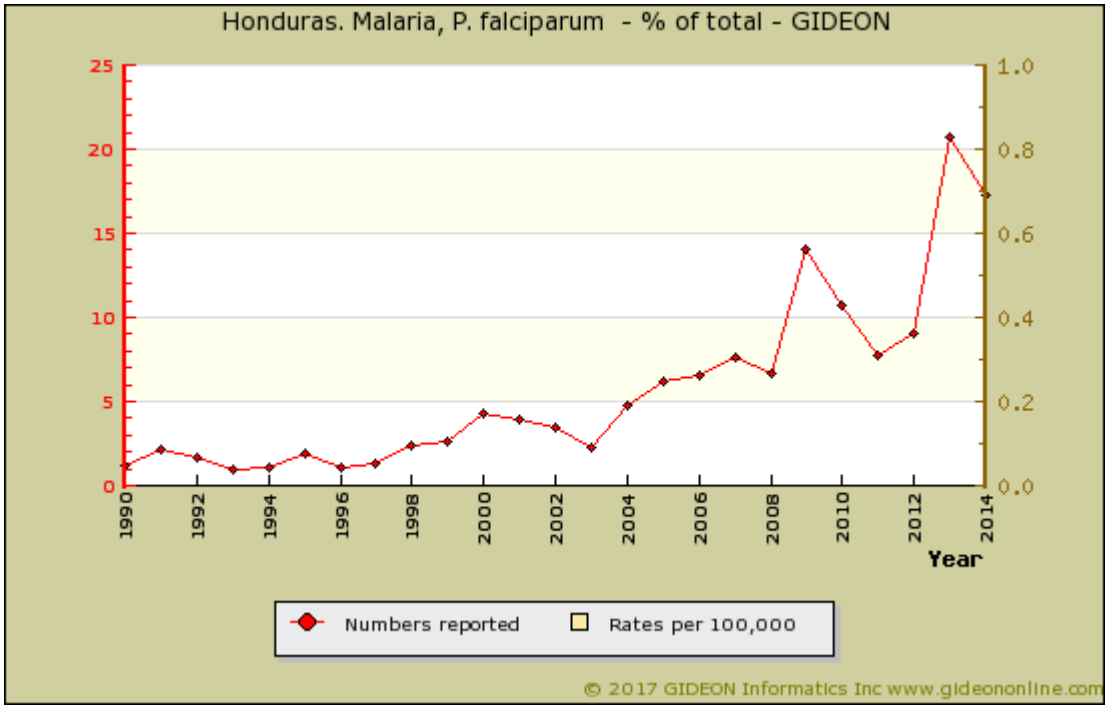
Agent	PARASITE - Protozoa. Apicomplexa, Haemosporida: *Plasmodium* spp.
Reservoir	Human Primate (*Plasmodium knowlesi*)
Vector	Mosquito (Anopheles)
Vehicle	Blood
Incubation Period	7d -30d
Diagnostic Tests	Examination of blood smear. Serology, antigen & microscopic techniques. Nucleic acid amplification.
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 P. ovale or P. vivax - 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 P. ovale or P. vivax - 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 (*ovale* and *vivax*) to 40 (*malariae*) 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 Honduras

Time and Place:
Risk exists year-round.
Malaria is endemic to 91% of land area, but not found in urban centers.
- Most cases are reported from Yoro, Choluteca, Colon, Cortes, El Paraiso, Gracias a Dios, Atlantida and Valle Departments.
- There is no risk in Tegucigalpa and San Pedro Sula.
- Risk exists in Roatan and other Bay Islands.

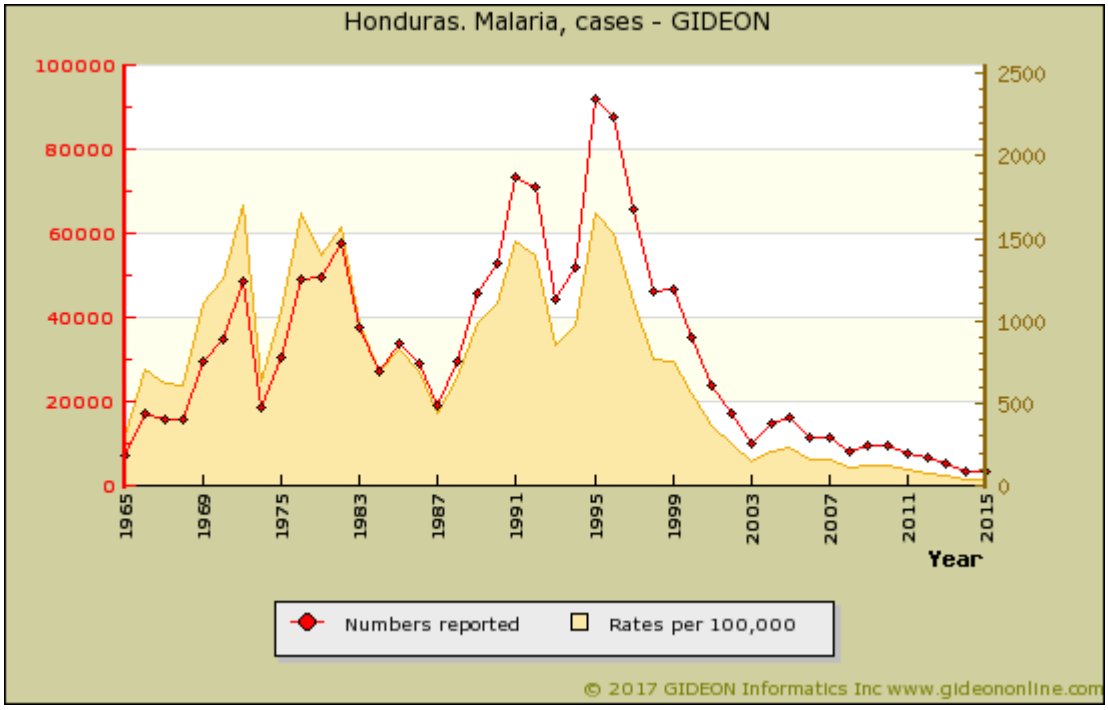
Infecting species:
Chloroquine-resistant *P. falciparum* is **NOT** reported. [1] [2] [3]
- As of 1997, an increasing percentage of rural cases (Colon region) has been ascribed to *P. falciparum*. [4]



Graph: Honduras. Malaria - *P. falciparum*, % of total

The age-specific mortality rate is approximately 0.5 per 100,000 per year.

Females ages 15 to 19 accounted for 51% to 62% of all cases during 1993 to 1995.



Graph: Honduras. Malaria, cases

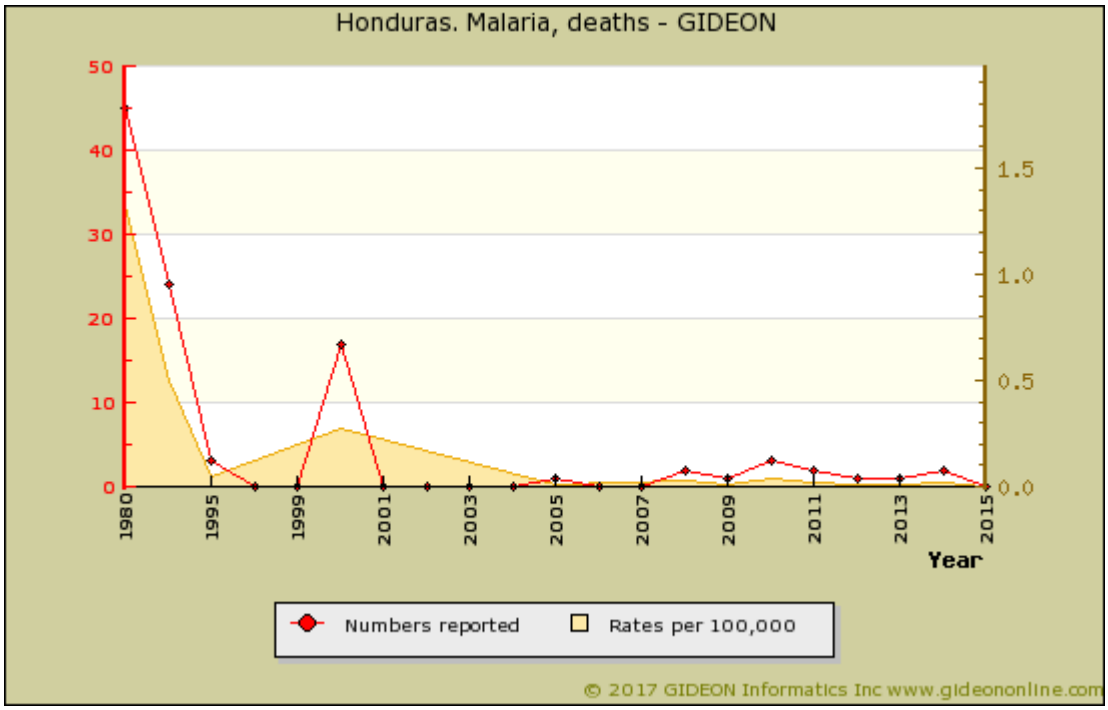
Notes:
Individual years:
2000 - Included 13,795 in Tegulcigalpa.
2005 - Included 385 cases in San Esteban Municipality. [5]
2010 - Gracias a Dios, Colon, Olancho, and Islas de la Bahia Departments accounted for 80% of cases.

2012 - Increasing incidence was reported in Colon Province. [6]

Prevalence surveys

Years	Study Group	%	Notes
2014*	children	0.2	0.2% of 3rd to 5th grade school children (*P. vivax*, 2014 publication) [7]

* indicates publication year (not necessarily year of survey)



Graph: Honduras. Malaria, deaths

Notes:

1. Figures for 1980, 1990, 2000 and 2010 are based on estimates of true mortality. [8] 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.

Vectors:

- The principal vectors are *Anopheles darlingi* in the north; *An. albimanus* [9] and *An. pseudopunctipennis* in the south.

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8. Lancet 2012 Feb 4;379(9814):413-31.
9. Rev Cubana Med Trop 2002 May-Aug;54(2):134-41.

Malignant otitis externa

Agent	BACTERIUM. *Pseudomonas aeruginosa*: 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	

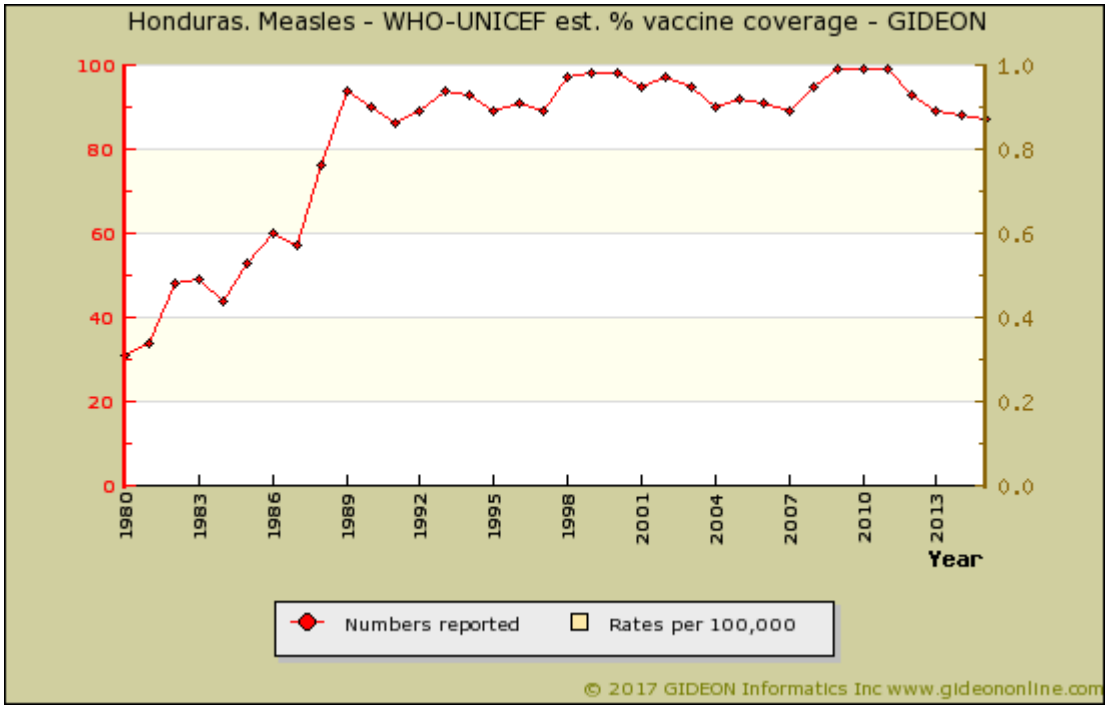
Measles

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

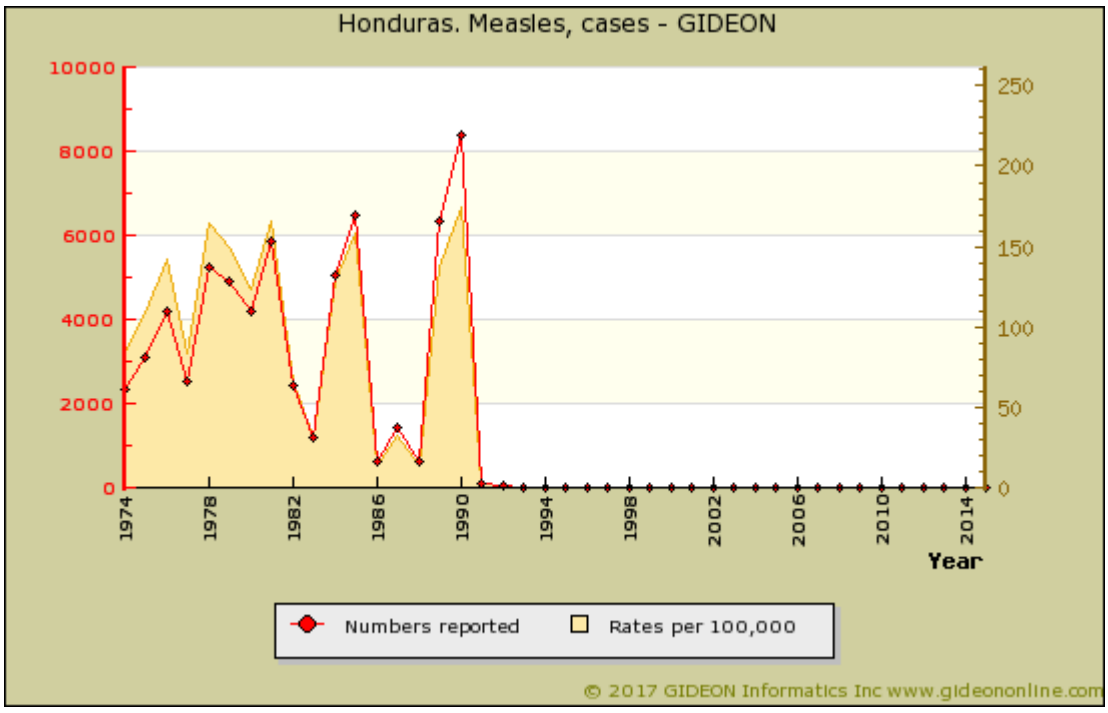
Measles in Honduras

Vaccine Schedule:

BCG - birth
DT - 4,6,18 months; 4 years risk groups
DTwP - 18 months; 4 years
DTwPHibHepB - 2,4,6 months
HepB - birth 1st contact, +1, +6 months for risk groups
HPV - 11 years
IPV - 2,4,6 months (risk groups)
MMR - 12 months
OPV - 2,4,6,18 months
Pneumo conj - 2,4,6 months
Rotavirus - 2,4 months
Td - 11, 21 years and 3 doses for pregnant women not yet vaccinated



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



Graph: Honduras. Measles, cases

Notes:
1. During the 1990's, the age-specific mortality rate for ages 5 to 9 years was 6.5 per 100,000 per year.

Notable outbreaks

Years	Region	Setting	Cases	Notes
1981	foreign country	American university	20	Outbreak (20 cases) in an American university was traced to two index patients who had returned from Honduras [1]

References

1. Am J Public Health 1985 Apr ;75(4):397-8.

Melioidosis

Agent	BACTERIUM. *Burkholderia pseudomallei* 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	Burkholderia pseudomallei, Burkholderia thailandensis, Melioidose, Nightcliff Gardeners' Disease, Whitmore disease. ICD9: 025 ICD10: A24.1,A24.2,A24.3,A24.4

Melioidosis in Honduras

2005 - Two cases of melioidosis imported from Honduras were reported in the United States. [1]

References

1. ProMED <promedmail.org> archive: 20060820.2334

Meningitis - aseptic (viral)

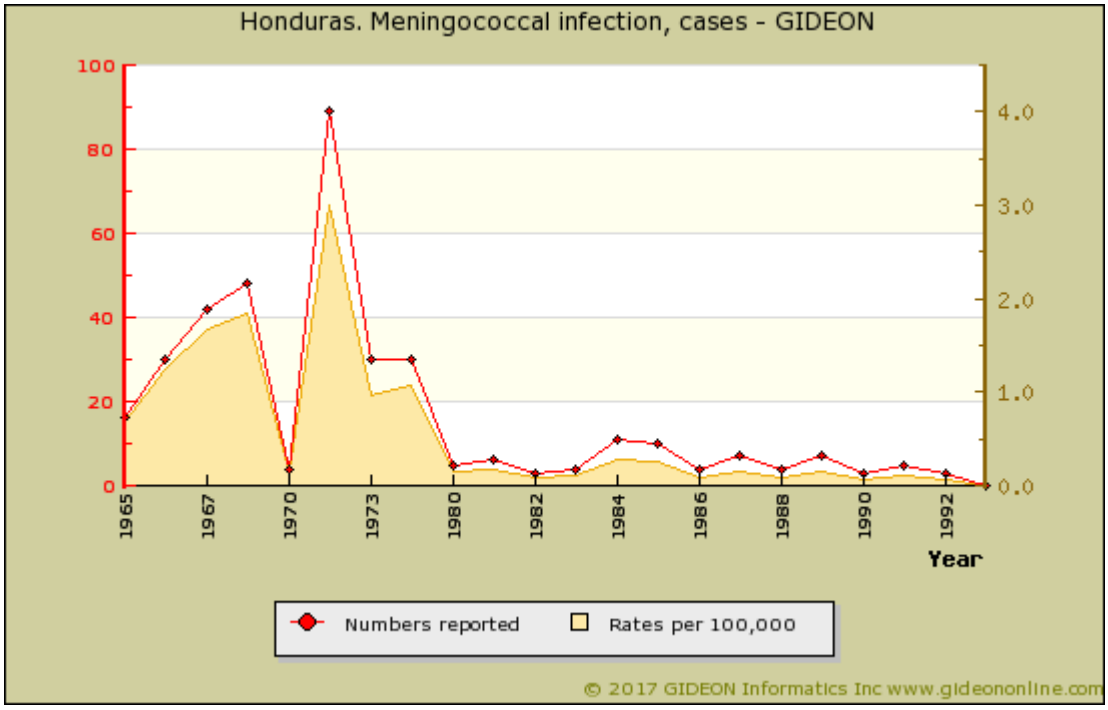
Agent	VIRUS - RNA. Picornaviridae, enteroviruses
Reservoir	Human
Vector	None
Vehicle	Fecal-oral, Droplet
Incubation Period	Variable
Diagnostic Tests	Viral isolation (stool, CSF, throat). Serology.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Clinical Hints	Lymphocytic meningitis, 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. *Neisseria meningitidis*, *Streptococcus pneumoniae*, *Haemophilus influenzae*, 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 Honduras

28 cases of bacterial meningitis were reported for children below age 6 during 1981 to 1985: 28% *Haemophilus influenzae*, 36% pneumococcal, 0 meningococcal.

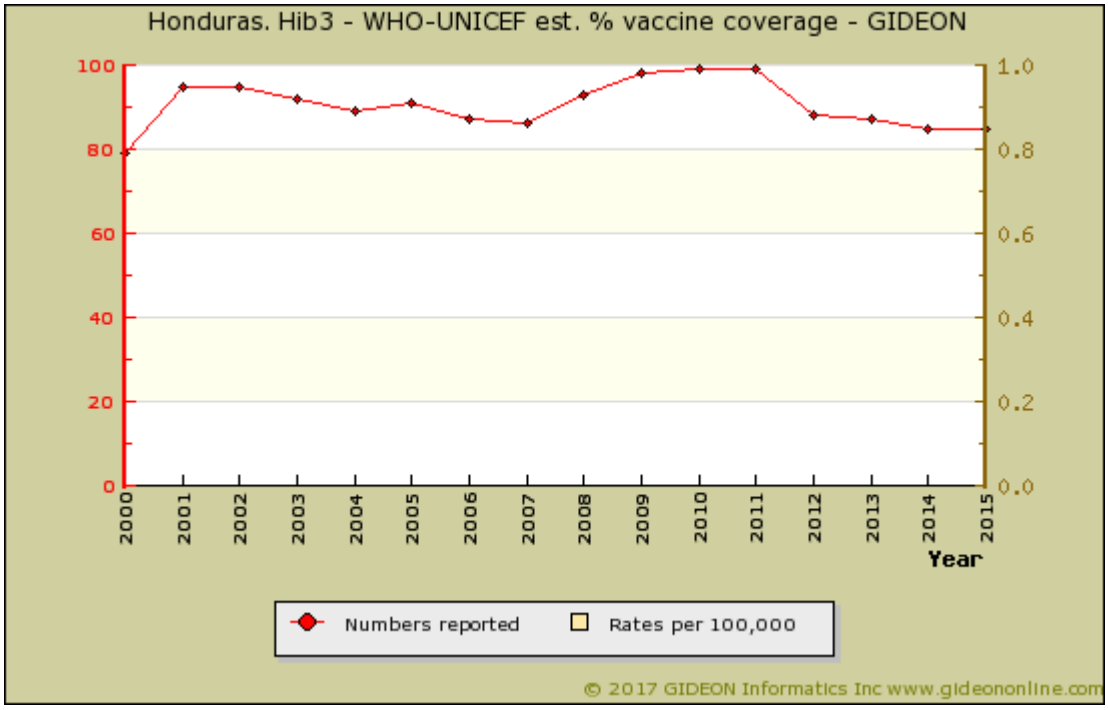


Graph: Honduras. Meningococcal infection, cases

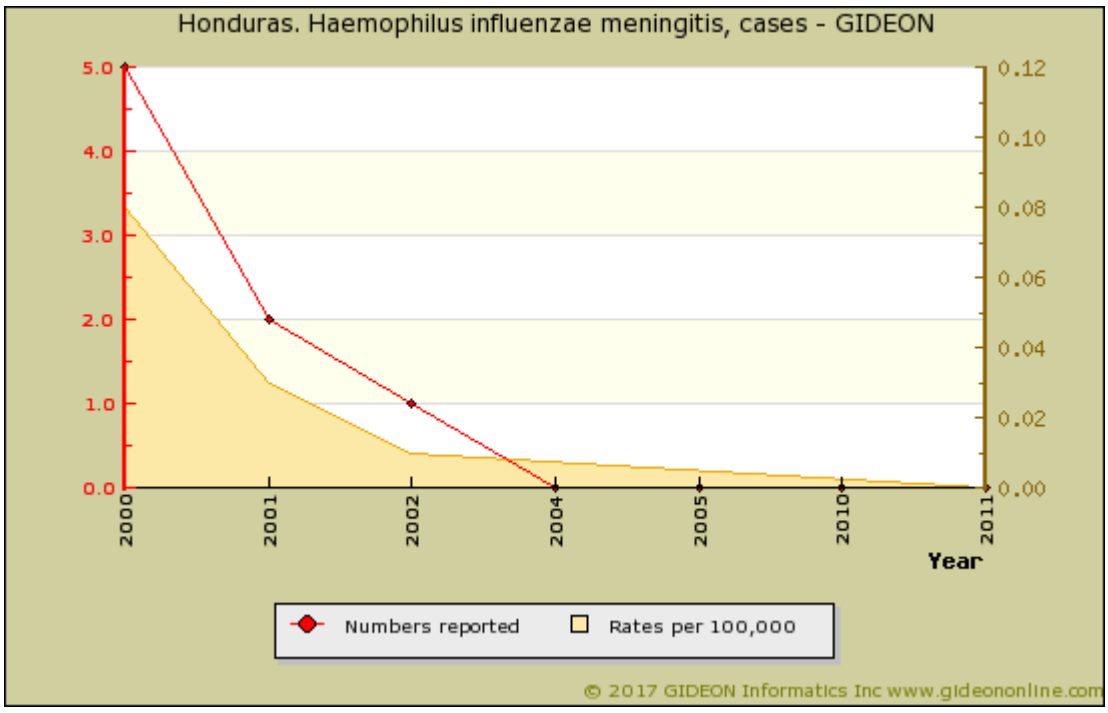
Vaccine Schedule:

BCG - birth
DT - 4,6,18 months; 4 years risk groups
DTwP - 18 months; 4 years
DTwPHibHepB - 2,4,6 months
HepB - birth 1st contact, +1, +6 months for risk groups
HPV - 11 years
IPV - 2,4,6 months (risk groups)
MMR - 12 months
OPV - 2,4,6,18 months
Pneumo conj - 2,4,6 months
Rotavirus - 2,4 months
Td - 11, 21 years and 3 doses for pregnant women not yet vaccinated

Routine vaccination against *Haemophilus influenzae* was initiated in 1999. [1]



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



Graph: Honduras. *Haemophilus influenzae* meningitis, cases

References

1. MMWR Morb Mortal Wkly Rep 2008 Feb 15;57(6):148-51.

Microsporidiosis

Agent	FUNGUS. Microsporidia: Enterocytozoon, *Encephalitozoon* (*Septata*), *Vittaforma* (*Nosema*), *Pleistophora*,*Trachipleistophora*, 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 S. intestinalis may respond to Albendazole and Fumagillin Nitazoxanide has been used for E. bieneusi.
Typical Pediatric Therapy	Albendazole 200 mg PO BID X 3 weeks. Add Fumagillin for ocular S. intestinalis may respond to Albendazole and Fumagillin Nitazoxanide has been used for E. bieneusi.
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

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

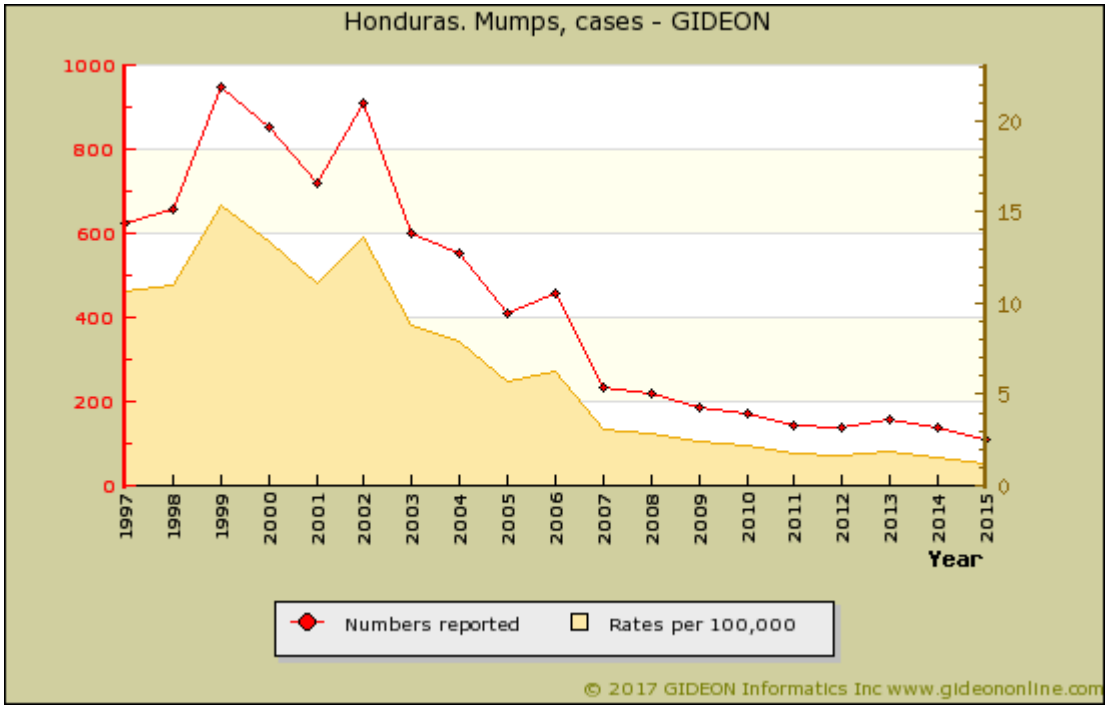
Mumps

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 Honduras

Vaccine Schedule:

BCG - birth
DT - 4,6,18 months; 4 years risk groups
DTwP - 18 months; 4 years
DTwPHibHepB - 2,4,6 months
HepB - birth 1st contact, +1, +6 months for risk groups
HPV - 11 years
IPV - 2,4,6 months (risk groups)
MMR - 12 months
OPV - 2,4,6,18 months
Pneumo conj - 2,4,6 months
Rotavirus - 2,4 months
Td - 11, 21 years and 3 doses for pregnant women not yet vaccinated



Graph: Honduras. Mumps, cases

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. *Nocardia* spp, *Madurella mycetomatis*, *Actinomadura pellitieri*, *Streptomyces somaliensis*, 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, Emarellia, 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

Mycetoma in Honduras

Ten to fifteen cases were registered each year during the 1980's.

Mycobacteriosis - M. marinum

Agent	BACTERIUM. Actinomycetes, *Mycobacterium marinum* 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, *Mycobacterium scrofulaceum* 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 (Isoniazid - Rifampin - streptomycin - Cycloserine) 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, *Mycobacterium* spp. - over 130 species as of 2016 An aerobic acid-fast bacillus
Reservoir	Water, Soil, Fish, Mammal, Bird
Vector	None
Vehicle	Air, Water, Milk (*M. bovis*), 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 *Mycobacterium avium-intracellulare* infection characterized by aggressive course and resistance to most antimycobacterial drugs
Synonyms	Mycobacterium abscessus, Mycobacterium avium, Mycobacterium avium-intracellulare, Mycobacterium chimaera, Mycobacterium franklinii, Mycobacterium immunogenum, Mycobacterium jacussii, Mycobacterium kyorinense, Mycobacterium xenopi, Segniliparus. ICD9: 031.9,031.2 ICD10: A31.0,A31.1,A31.8

Mycoplasma (miscellaneous) infection

Agent	BACTERIUM. Mycoplasmatales *Mycoplasma genitalium*, *Mycoplasma hominis*, *Mycoplasma fermentans*, *Mycoplasma penetrans*, *Mycoplasma parvum*, *Ureaplasma urealyticum*
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 g 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, Epirythrozoon, 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 primatum, Mycoplasma salivarium, Mycoplasma spermatophilum, T Mycoplasmas, T strains, Ureaplasma parvum, Ureaplasma urealyticum. ICD9: 041.81 ICD10: A49.3

Mycoplasma (miscellaneous) infection in Honduras

Prevalence surveys

Years	Study Group	%	Notes
2009*	specimens	7.1	7.1% (*Mycoplasma genitalium*) of urine specimens from Garifuna people (2009 publication) [1]

* indicates publication year (not necessarily year of survey)

References

1. J Acquir Immune Defic Syndr 2009 May 01;51 Suppl 1:S26-34.

Mycoplasma pneumoniae infection

Agent	BACTERIUM. Mollicutes. *Mycoplasma pneumoniae*
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. *Streptococcus pyogenes*, *Clostridium perfringens*, 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. *Clostridium septicum* (occasionally *Clostridium tertium*, *Clostridium sporogenes*, *Clostridium sordellii* or *Clostridium tertium*)
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 *Pseudomonas aeruginosa*; 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, *Nocardia* 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 Nocardia 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	Nocardia, Nocardiose. ICD9: 039 ICD10: A43

Onchocerciasis - zoonotic

Agent	PARASITE - Nematoda. Secernentea: *Onchocerca lupi*, et. al.
Reservoir	Cattle, Horse, Deer, Boar, Dog, Wolf
Vector	Black fly (*Simulium* 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 retuculata, Pelecitus. ICD9: 123.8 ICD10: B71.1.

Orbital and eye infection

Agent	BACTERIUM OR FUNGUS. *Streptococcus pyogenes*, oral anaerobes, *Aspergillus* 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, Panopthalmitis, 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, *Chlamydophila* (*Chlamydia*) *psittaci*
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	Chlamydophila abortus, Chlamydophila psittaci, Ornitose, Papegojsjuka, Parrot fever, Psitacosis, Psittacosis, Psittakose. ICD9: 073 ICD10: A70

Osteomyelitis

Agent	BACTERIUM OR FUNGUS. *Staphylococcus aureus*, facultative gram-negative bacilli, *Candida albicans*, 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	Osteomielite, Osteomielitis, Osteomyelite, Paravertebral abscess. ICD9: 015,730.9 ICD10: M86

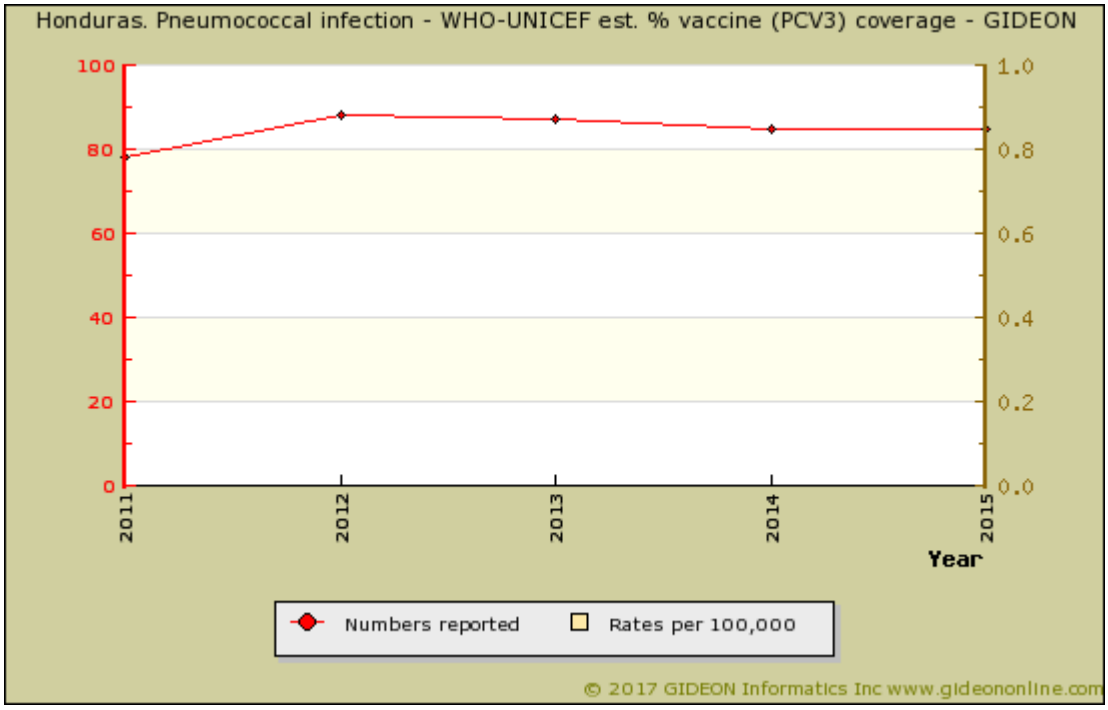
Otitis media

Agent	BACTERIUM OR VIRUS. *Haemophilus influenzae* & *Streptococcus pneumoniae* 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, Cefprozin, 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

Otitis media in Honduras

Vaccine Schedule:

BCG - birth
DT - 4,6,18 months; 4 years risk groups
DTwP - 18 months; 4 years
DTwPHibHepB - 2,4,6 months
HepB - birth 1st contact, +1, +6 months for risk groups
HPV - 11 years
IPV - 2,4,6 months (risk groups)
MMR - 12 months
OPV - 2,4,6,18 months
Pneumo conj - 2,4,6 months
Rotavirus - 2,4 months
Td - 11, 21 years and 3 doses for pregnant women not yet vaccinated



Graph: Honduras. Pneumococcal infection - WHO-UNICEF est. % vaccine (PCV3) coverage

Paragonimiasis

Agent	PARASITE - Platyhelminthes, Trematoda. *Paragonimus westermani*, *P. heterotremus*, *P. skrjabini*, *P. miyazakii*, *P. africanus*, et al.
Reservoir	Human, Dog, Cat, Pig, Wild carnivore, Deer, Snail (*Semisulcospira*, *Thiara*, etc)
Vector	None
Vehicle	Fresh-water crab (at least 8 species), Crayfish (*Cambaroides*), raw meat (venison)
Incubation Period	6w - 6m
Diagnostic Tests	Identification of ova in sputum or stool. Serologic and skin tests are available.
Typical Adult Therapy	Praziquantel 25 mg/kg TID X 2d. OR Bithionol 40 mg/kg every other day X 10 doses. OR Triclabendazole 10 mg/kg/d X 2
Typical Pediatric Therapy	As for adult
Clinical Hints	Pulmonary infection with bloody or "rusty" sputum Meningitis or seizures Eosinophilia Subcutaneous nodules in some cases Parasite may survive for decades in the human host
Synonyms	Alaria, Endemic hemoptysis, Lung fluke, Oriental lung fluke, Paragonimus, Poikilorchis, Pulmonary distomiasis. ICD9: 121.2 ICD10: B66.4

Paragonimiasis in Honduras

Two cases of human infection were reported in Honduras prior to 1983. [1]

References

1. Am J Trop Med Hyg 1983 Mar ;32(2):376-8.

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

Parainfluenza virus infection in Honduras

Prevalence surveys

Years	Region	Study Group	%	Notes
2010 - 2011		children	13.3	13.3% of rural children below age 5 years, with respiratory symptoms (2010 to 2011) [1]
2006 - 2009	El Salvador	specimens	3.2	3.2% of pharyngeal swabs from inpatients and outpatients in El Salvador, Honduras and Nicaragua (2006 to 2009) [2]

References

1. Pediatr Infect Dis J 2012 Nov ;31(11):1113-8.
2. Influenza Other Respir Viruses 2011 Mar ;5(2):123-34.

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, Erythrovirus 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: *Pediculus humanus*, *Phthirus pubis*.
Reservoir	Human
Vector	Louse
Vehicle	Contact
Incubation Period	7d
Diagnostic Tests	Identification of adults and "nits."
Typical Adult Therapy	Permethrin 1%; or malthion 0.5%; or lindane OR Ivermectin 200 mcg/kg PO
Typical Pediatric Therapy	Permethrin 1%; or malthion 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 (*Pediculus humanus* var. corporis; rarely not the head louse) transmits such diseases as epidemic typhus, trench fever and relapsing fever
Synonyms	Crab louse, Lausebefall, Pediculose, Pediculus capitus, Pediculus corporis, Pedikulose, Phthirus pubis, Pidocci. ICD9: 132 ICD10: B85

Pentastomiasis - Linguatula

Agent	PARASITE - Pentastomid worm. *Linguatula serrata*
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. *Streptococcus pneumoniae*, *Staphylococcus aureus*, 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. *Escherichia coli*, other facultative gram negative bacilli, *Candida albicans*, 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 *Pseudomonas aeruginosa*.
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

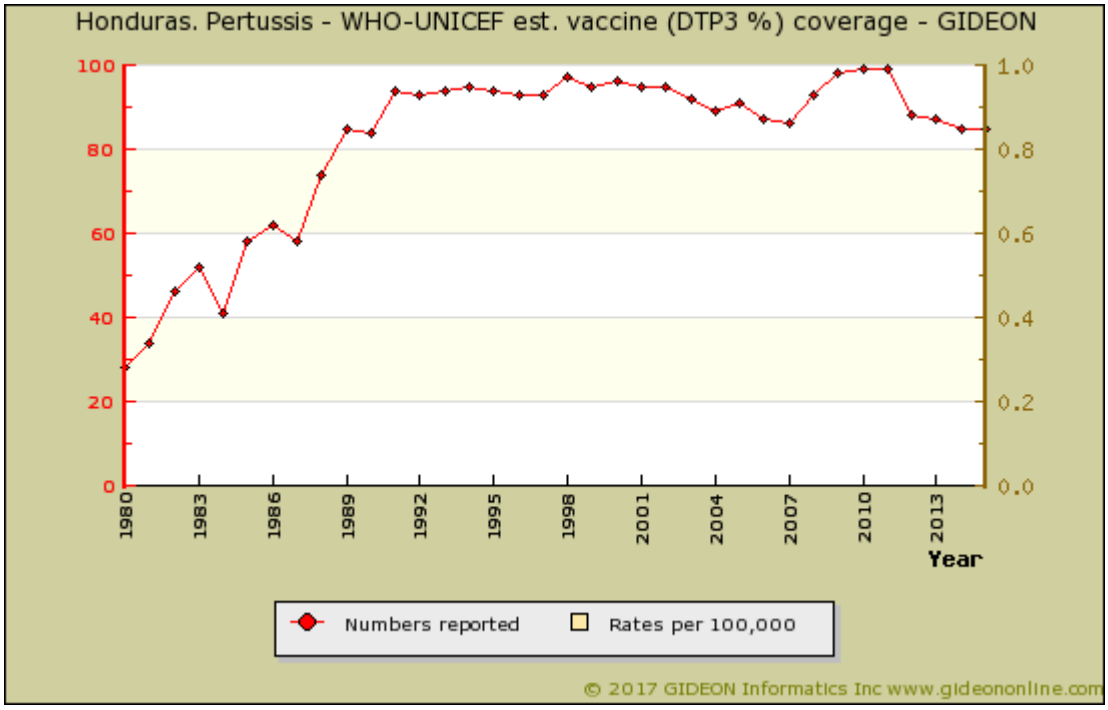
Pertussis

Agent	BACTERIUM. *Bordetella pertussis* 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. Azithromycin 500 mg po X 1, then 250 mg daily X 4 days OR Clarithromycin 500 mg po BID X 7 days OR Sulfamethoxazole / Trimethoprim
Typical Pediatric Therapy	Respiratory precautions: Azithromycin 10mg /kg po daily for 5 days OR Clarithromycin 15/mg/kg BID X 7 days OR Sulfamethoxazole / Trimethoprim
Vaccines	DTaP vaccine DTP vaccine
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	Bordetella holmesii, Bordetella parapertussis, Bordetella pertussis, Coqueluche, Keuchhusten, Kikhosta, Kikhoste, Kinkhoest, Parapertussis, Pertosse, Syndrome coqueluchoide, Tos convulsa, Tos farina, Tosse convulsa, Tussis convulsa, Whooping cough. ICD9: 033 ICD10: A37

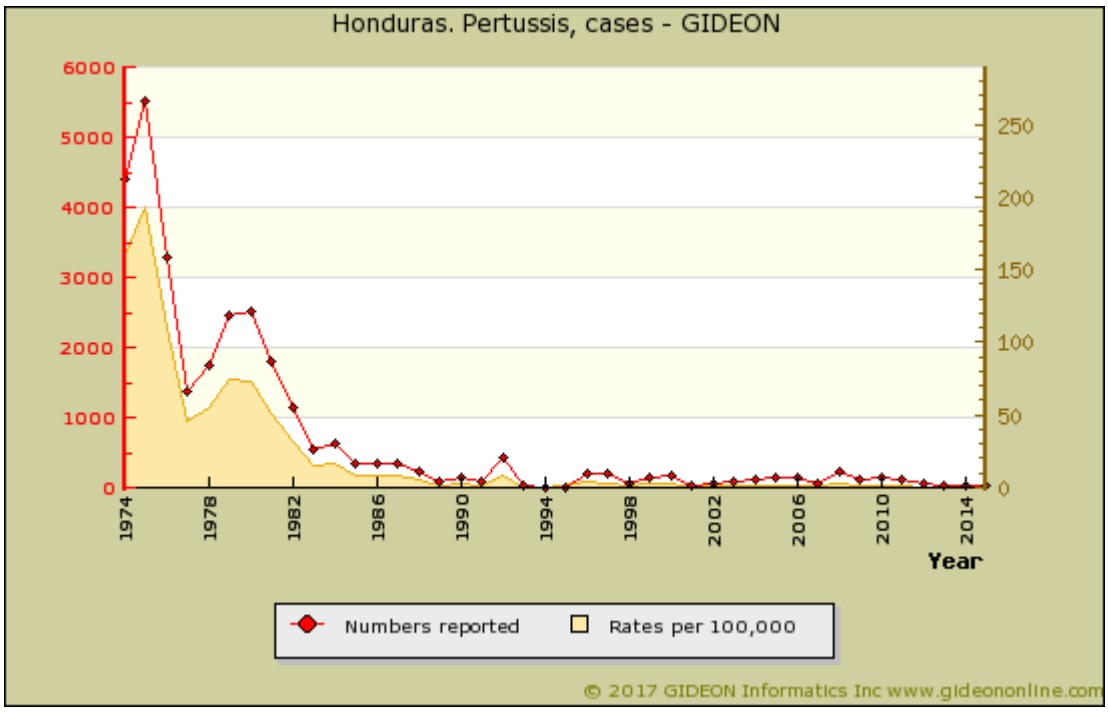
Pertussis in Honduras

Vaccine Schedule:

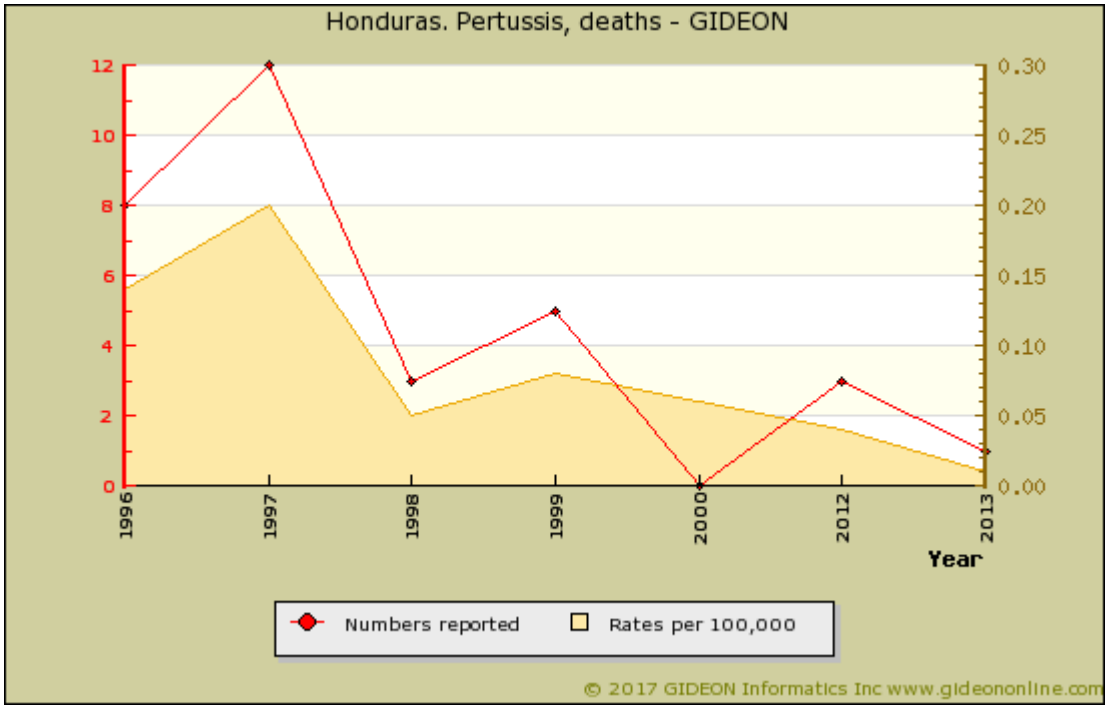
BCG - birth
DT - 4,6,18 months; 4 years risk groups
DTwP - 18 months; 4 years
DTwPHibHepB - 2,4,6 months
HepB - birth 1st contact, +1, +6 months for risk groups
HPV - 11 years
IPV - 2,4,6 months (risk groups)
MMR - 12 months
OPV - 2,4,6,18 months
Pneumo conj - 2,4,6 months
Rotavirus - 2,4 months
Td - 11, 21 years and 3 doses for pregnant women not yet vaccinated



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



Graph: Honduras. Pertussis, cases



Graph: Honduras. Pertussis, deaths

Pharyngeal and cervical space infx.

Agent	BACTERIUM. *Streptococcus pyogenes*, 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 *Streptococcus pyogenes*; *Streptooccus* 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. *Philophthalmus gralli*, *Ph. lucipetus*, *Ph. lacrimosus*
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

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. *Plesiomonas shigelloides* 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	Plesiomonas shigelloides. 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: *Pneumocystis jiroveci* (now distinct from *Pneumocystis carinii*)
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, Pneumocystis carinii, Pneumocystis jiroveci. ICD9: 136.3 ICD10: B59

Pneumonia - bacterial

Agent	BACTERIUM. *Streptococcus pneumoniae*, *Klebsiella pneumoniae* ssp *pneumoniae*, 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, Empyeem, 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

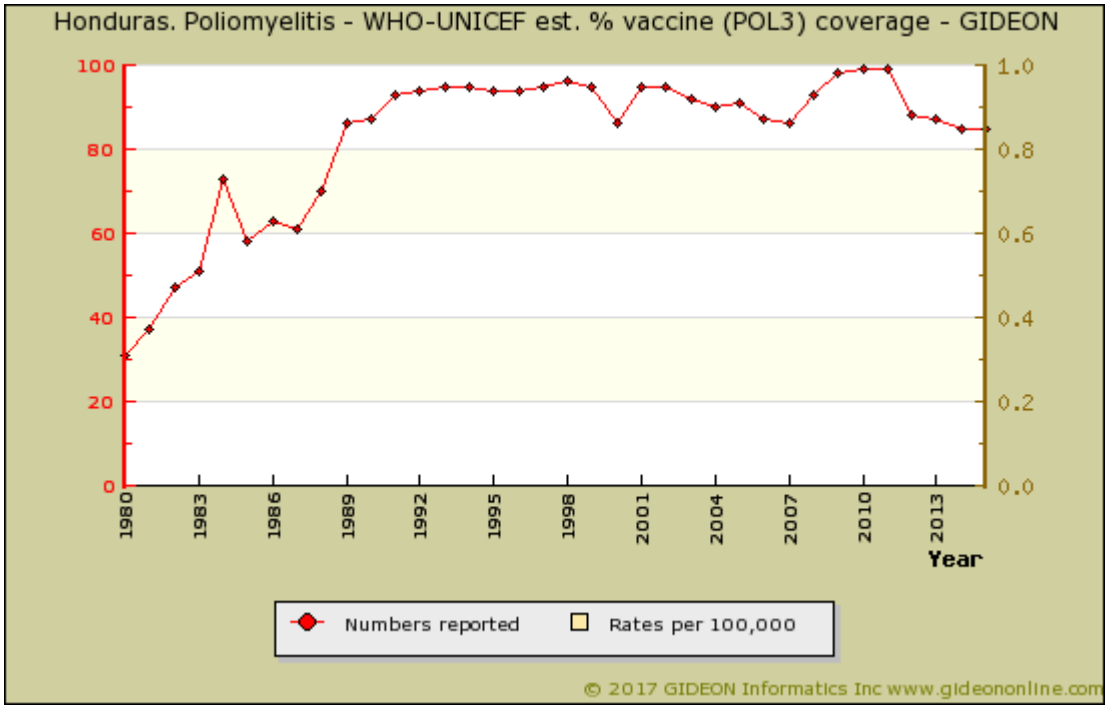
Agent	VIRUS - RNA. Picornaviridae, Picornavirus: Polio virus
Reservoir	Human
Vector	None
Vehicle	Fecal-oral, Dairy products, Food, Water, Fly, Respiratory or pharyngeal acquisition
Incubation Period	7d - 14d (range 3d - 35d)
Diagnostic Tests	Viral culture (pharynx, stool). Serology. Nucleic acid amplification.
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 Honduras, imported, expatriate or other presentations of the disease have been associated with this country.

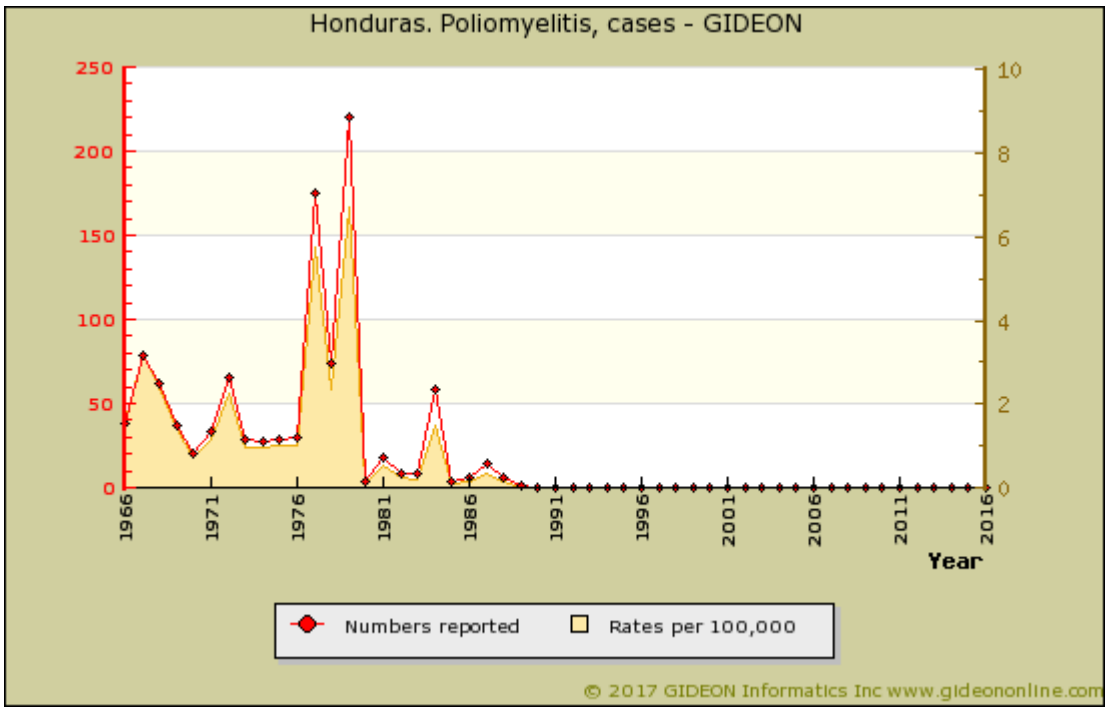
Poliomyelitis and acute flaccid paralysis in Honduras

Vaccine Schedule:

BCG - birth
DT - 4,6,18 months; 4 years risk groups
DTwP - 18 months; 4 years
DTwPHibHepB - 2,4,6 months
HepB - birth 1st contact, +1, +6 months for risk groups
HPV - 11 years
IPV - 2,4,6 months (risk groups)
MMR - 12 months
OPV - 2,4,6,18 months
Pneumo conj - 2,4,6 months
Rotavirus - 2,4 months
Td - 11, 21 years and 3 doses for pregnant women not yet vaccinated

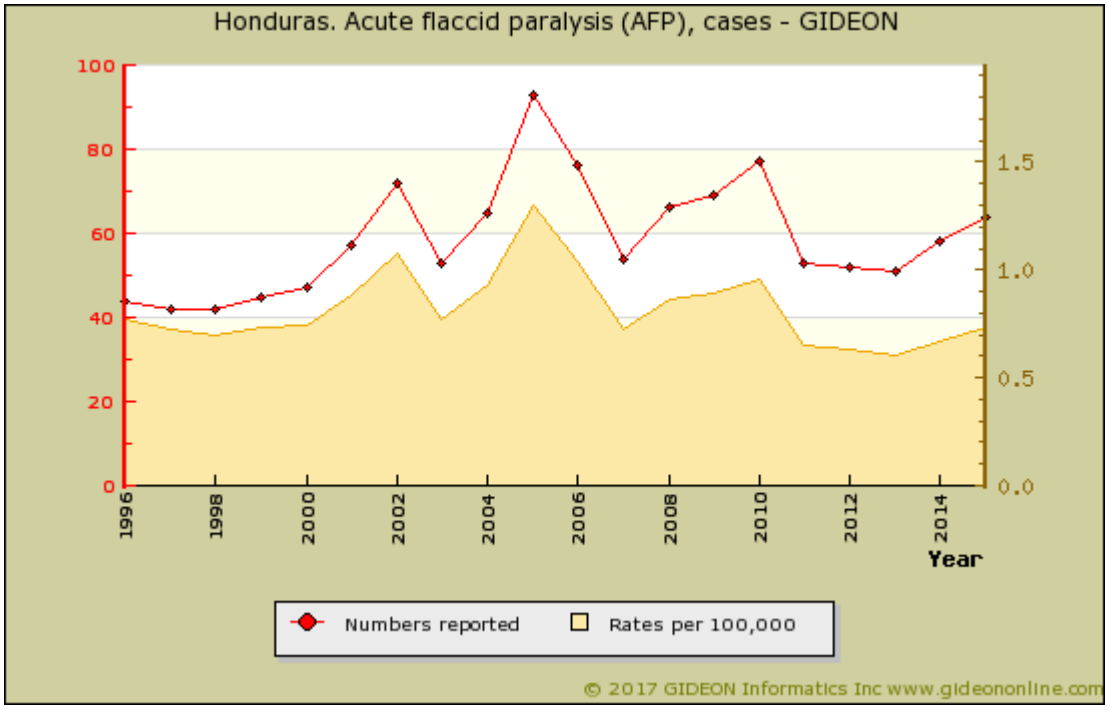


Graph: Honduras. Poliomyelitis - WHO-UNICEF est. % vaccine (POL3) coverage

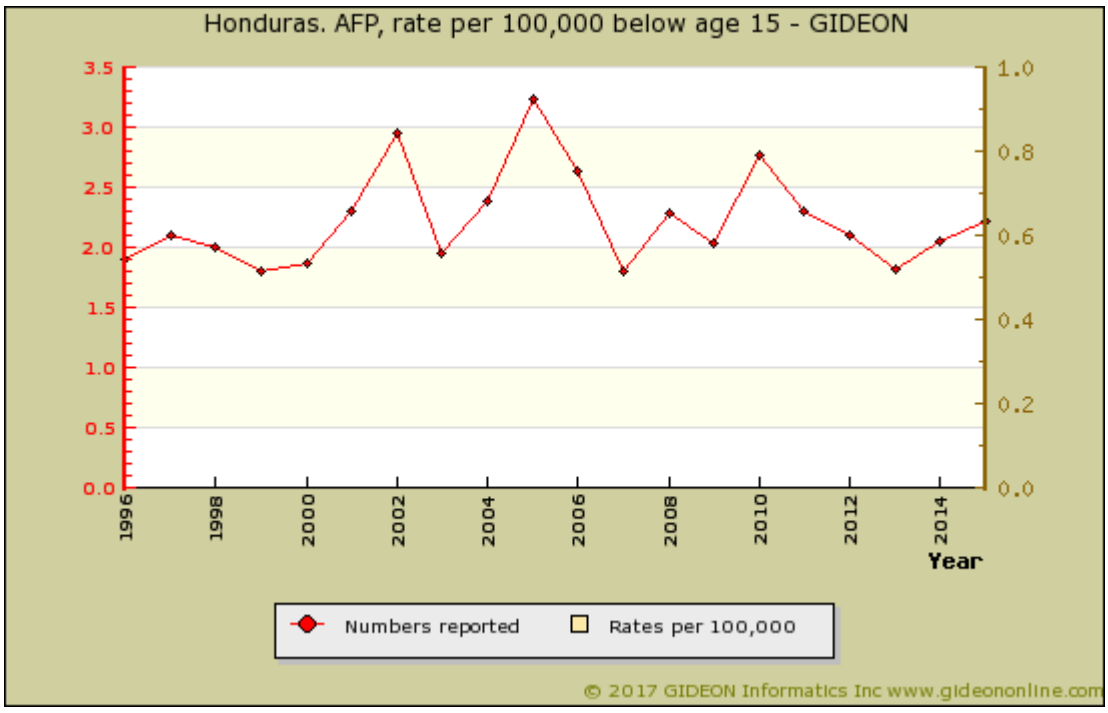


Graph: Honduras. Poliomyelitis, cases

Notes:
1. Natural disease was declared eradicated as of 1991.



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



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

Notable outbreaks

Years	Cases	Notes
1967*		Outbreak reported - additional details unavailable. [1]
1984	58	[2]

* indicates publication year (not necessarily year of outbreak)

References

1. Bol Oficina Sanit Panam 1967 Jul ;63(1):31-5.
2. EPI Newsl 1985 Feb ;7(1):1-4.

Protothecosis and chlorellosis

Agent	ALGA. *Prototheca wickerhamii*; rarely *Pr. zopfii*, *Pr. cutis* 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 (*Staphylococcus aureus* & *Streptococcus pyogenes* 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, Folicolite, Follicolite, Folliculite, Folliculitis, Follikulitis, Foroncolosi, Foronculose, Foruncolosi, Furunculosis, Furunkulose, Furunulose, Hydradenitis, Impetigine, Impetigo, Paronychia, Pyoderma. ICD9: 680,684,686 ICD10: L01,L02,L08.0,L73.2

Pyomyositis

Agent	BACTERIUM. Usually *Staphylococcus aureus*
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 Staphylococcus aureus); 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

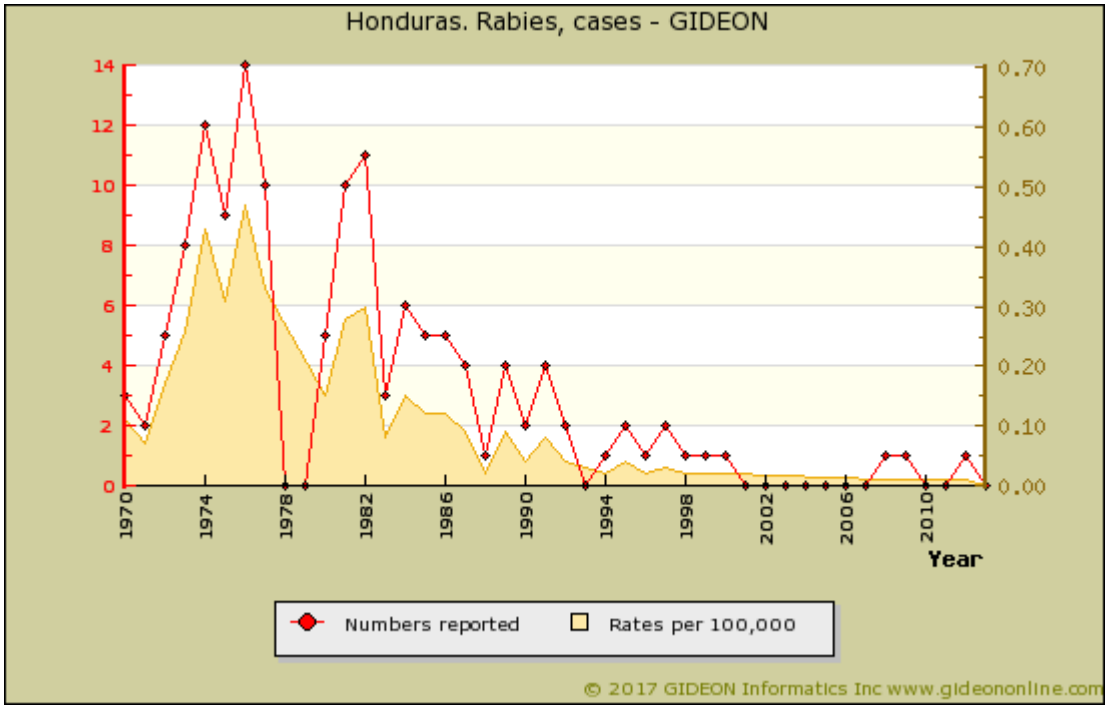
Agent	BACTERIUM. *Coxiella burnetii* Intracellular organism related to Rickettsiae
Reservoir	Cattle, Sheep, Goat, Bird, Fish, Rodent, Rabbit, Tick, Bandicoot, Marsupial, Dog, Cat
Vector	None
Vehicle	Air, Dust, Secretions, Dairy products, Respiratory or pharyngeal acquisition
Incubation Period	18d - 21d (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 Coxiella massiliensis, Coxiella burnetii, 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

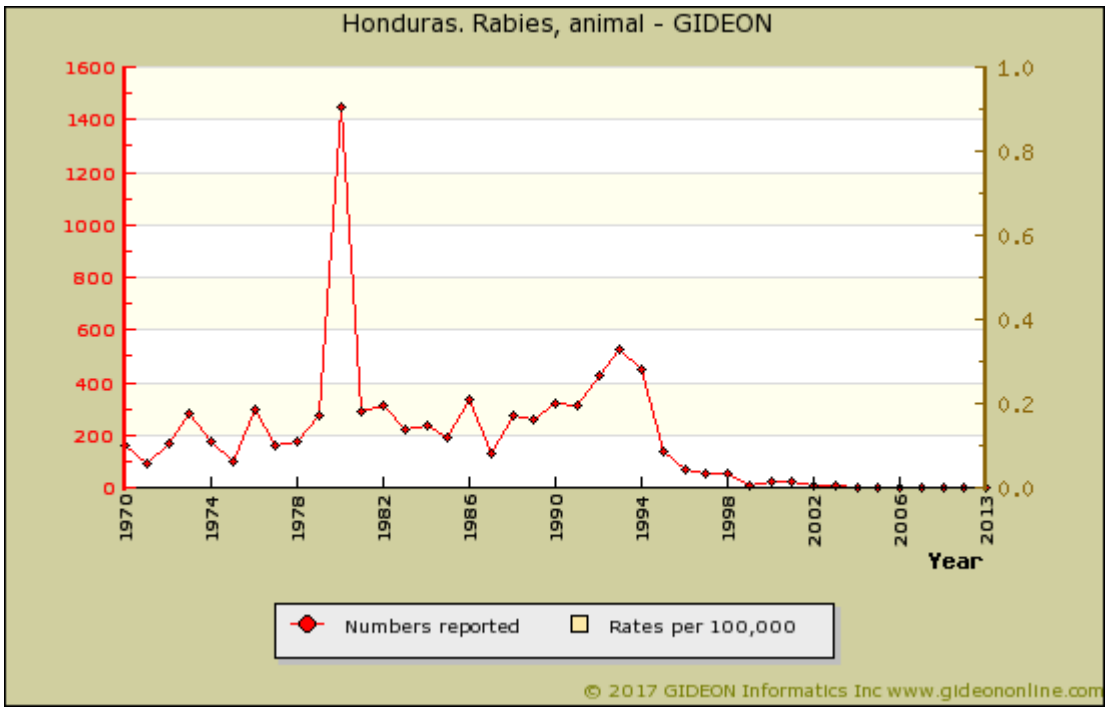
Rabies in Honduras

Most cases of human rabies are acquired from dogs or bats.



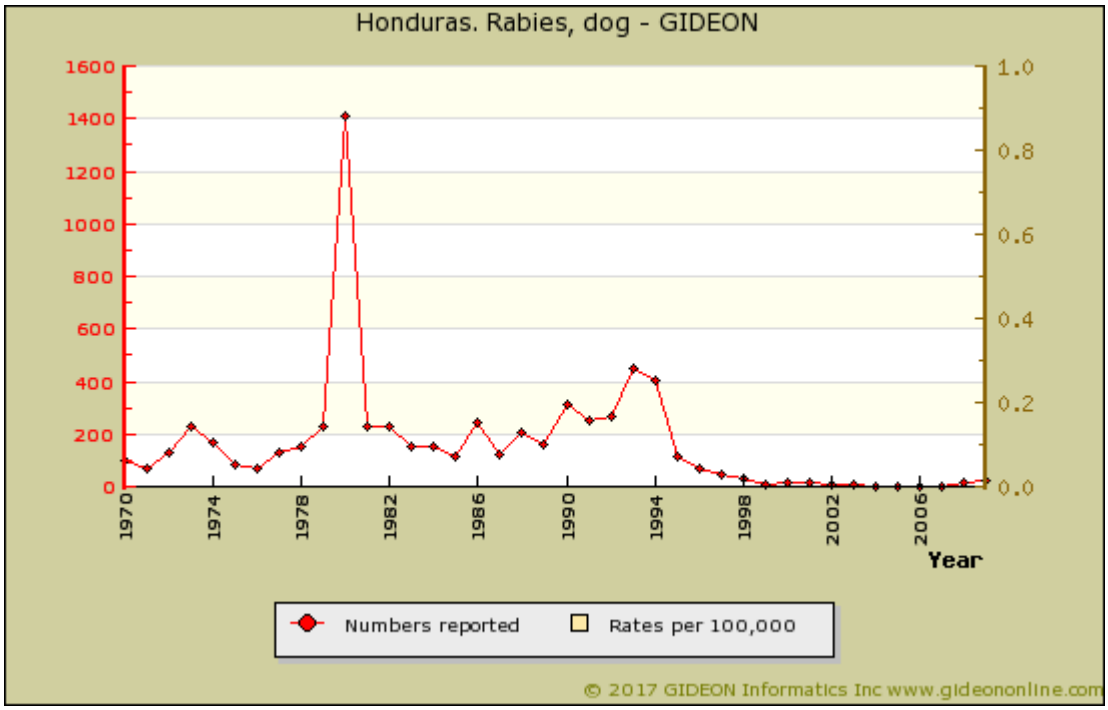
Graph: Honduras. Rabies, cases

Notes:
1. The average annual incidence of human rabies during 1970 to 1979 was 4 cases; 7.0 during 1980 to 1984; 3.8 during 1984 to 1989; 1 during 1990 to 1994.
2. 1,055 postexposure treatment courses were administered in 1988; 802 in 1989; 2,456 in 2001.
Individual years:
1992 - Both from Tegulcigalpa metropolitan area.
1994 - In the southern region; from a dog.
1995 - In the Metropolitan area.
1999 - Acquired from a bat. [1]



Graph: Honduras. Rabies, animal

Notes:
1. No rabid bats were reported in 1990; 0 in 1991; 0 during 1998 to 2007.



Graph: Honduras. Rabies, dog

References

1. ProMED <promedmail.org> archive: 19990523.0852

Rat bite fever - spirillary

Agent	BACTERIUM. *Spirillum minus* 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. *Streptobacillus moniliformis* 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, Streptobacillus moniliformis. 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 syncytial virus infection in Honduras

Prevalence surveys

Years	Region	Study Group	%	Notes
1991 - 1992	multiple locations	children	32	32% of hospitalized children below age 3 years with respiratory symptoms (Honduras and El Salvador, 1991 to 1992) [1]
2010 - 2011		children	7.5	7.5% of rural children below age 5 years, with respiratory symptoms (2010 to 2011) [2]
2006 - 2009	multiple locations	patients	6.9	6.9% of pharyngeal swabs from inpatients and outpatients in El Salvador, Honduras and Nicaragua (2006 to 2009) [3]

References

1. Am J Trop Med Hyg 1996 Mar ;54(3):260-4.
2. Pediatr Infect Dis J 2012 Nov ;31(11):1113-8.
3. Influenza Other Respir Viruses 2011 Mar ;5(2):123-34.

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

Respiratory viruses - miscellaneous in Honduras

Prevalence surveys

Years	Study Group	%	Notes
2010 - 2011	children	7.5-8.1	human metapneumovirus (hMPV) was found in 8.1% of rural children below age 5 years, with respiratory symptoms, and RSV in 7.5% (2010 to 2011) [1]
2010 - 2011	children	13.3	Parainfluenza virus was found in 13.3% of rural children below age 5 years, with respiratory symptoms [2]

References

1. Pediatr Infect Dis J 2012 Nov ;31(11):1113-8.
2. Pediatr Infect Dis J 2012 Nov ;31(11):1113-8.

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. *Streptococcus pyogenes* 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. *Klebsiella pneumoniae* ssp *ozaenae* and *Klebsiella pneumoniae* ssp *rhinoscleromatis* 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	Klebsiella pneumoniae ssp ozaenae, Ozena, Rhinoscleroma. ICD9: 040.1 ICD10: J31.0

Rhinosporidiosis

Agent	PROTOCTISTA *Rhinosporidium seeberi* (may in fact be *Microcystis*, a cyanobacterium)
Reservoir	Water, Soil, Vegetation
Vector	None
Vehicle	Aerosol from soil or water, Respiratory or pharyngeal acquisition
Incubation Period	2w - 6m
Diagnostic Tests	Histology of resected material (organism does not grow in-vitro).
Typical Adult Therapy	Excision Dapsone has been used in cases of disseminated disease, in some cases combined with cycloserine and ketoconazole
Typical Pediatric Therapy	As for adult
Clinical Hints	Friable, painless vascular masses of nose, conjunctivae and larynx Recurrence is common.
Synonyms	Rhinosporidium seeberi. ICD9: 117.0 ICD10: B48.1

Rhodococcus equi infection

Agent	BACTERIUM. *Rhodococcus equi* 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

Rickettsia felis infection

Agent	BACTERIUM. *Rickettsia felis*
Reservoir	Opossum (*Didelphis marsupialis*), Flying squirrel, Raccoon, Cat, Flea, Dog
Vector	Flea (*Ctenocephalides felis*, *Pulex irritans*)
Vehicle	None
Incubation Period	Unknown
Diagnostic Tests	Serology (IFA). Nucleic acid amplification. Note that Weil-Felix reaction may be positive (OX-19).
Typical Adult Therapy	Doxycycline 100 mg PO BID X 3 to 5d. OR Chloramphenicol 500 mg PO QID X 3 to 5d
Typical Pediatric Therapy	Doxycycline 2 mg/kg PO BID X 3 to 5d (maximum 200 mg/day). OR Chloramphenicol 10 mg/kg PO QID X 3 to 5d
Clinical Hints	Disease mimics endemic typhus Fever, headache and myalgia Macular rash present in 20% to 50% of patients, and is most prominent on the trunk and abdomen History of recent contact with opossum or other small mammal
Synonyms	California pseudotyphus, Cat flea typhus, ELB agent. ICD9: 081.1 ICD10: A79.8

Rotavirus infection

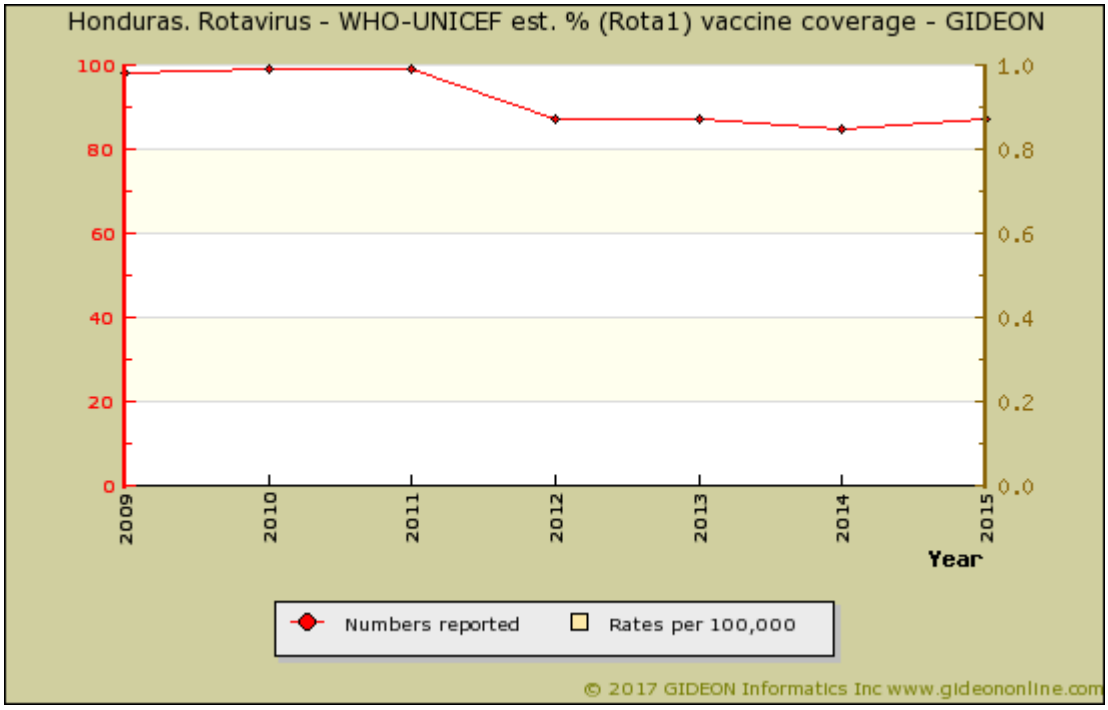
Agent	VIRUS - RNA. Reoviridae: Rotavirus
Reservoir	Human, Pig
Vector	None
Vehicle	Fecal-oral, Water
Incubation Period	2.0 d (range 12h - 3d)
Diagnostic Tests	Stool assay for viral antigen. Serology. Nucleic acid amplification.
Typical Adult Therapy	Stool precautions; supportive
Typical Pediatric Therapy	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 Honduras

Vaccine Schedule:

BCG - birth
DT - 4,6,18 months; 4 years risk groups
DTwP - 18 months; 4 years
DTwPHibHepB - 2,4,6 months
HepB - birth 1st contact, +1, +6 months for risk groups
HPV - 11 years
IPV - 2,4,6 months (risk groups)
MMR - 12 months
OPV - 2,4,6,18 months
Pneumo conj - 2,4,6 months
Rotavirus - 2,4 months
Td - 11, 21 years and 3 doses for pregnant women not yet vaccinated

Routine vaccination against Rotavirus was introduced in 2009. [1]



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

Rotavirus is estimated to account for 66,600 outpatient visits each year, with 1,888 hospitalizations and 70 in-hospital deaths among children below age 5 years. [2]

Prevalence surveys

Years	Study Group	%	Notes
2000 - 2004	children	30-53	30% of outpatient and 53% of inpatient diarrhea among children below age 5 years (estimated, 2000 to 2004)
2005	children	6.5	6.5% of hospitalizations for diarrhea among children below age 5 years (2005)
2006	children	44	44% of pediatric hospitalizations for diarrhea in 2006 [3]
2010	children	35	35% of pediatric hospitalizations for diarrhea in 2010 [4]

References

1. MMWR Morb Mortal Wkly Rep 2011 Dec 2;60(47):1611-4.
2. Rev Panam Salud Publica 2006 Dec ;20(6):377-84.
3. MMWR Morb Mortal Wkly Rep 2011 Dec 2;60(47):1611-4.
4. MMWR Morb Mortal Wkly Rep 2011 Dec 2;60(47):1611-4.

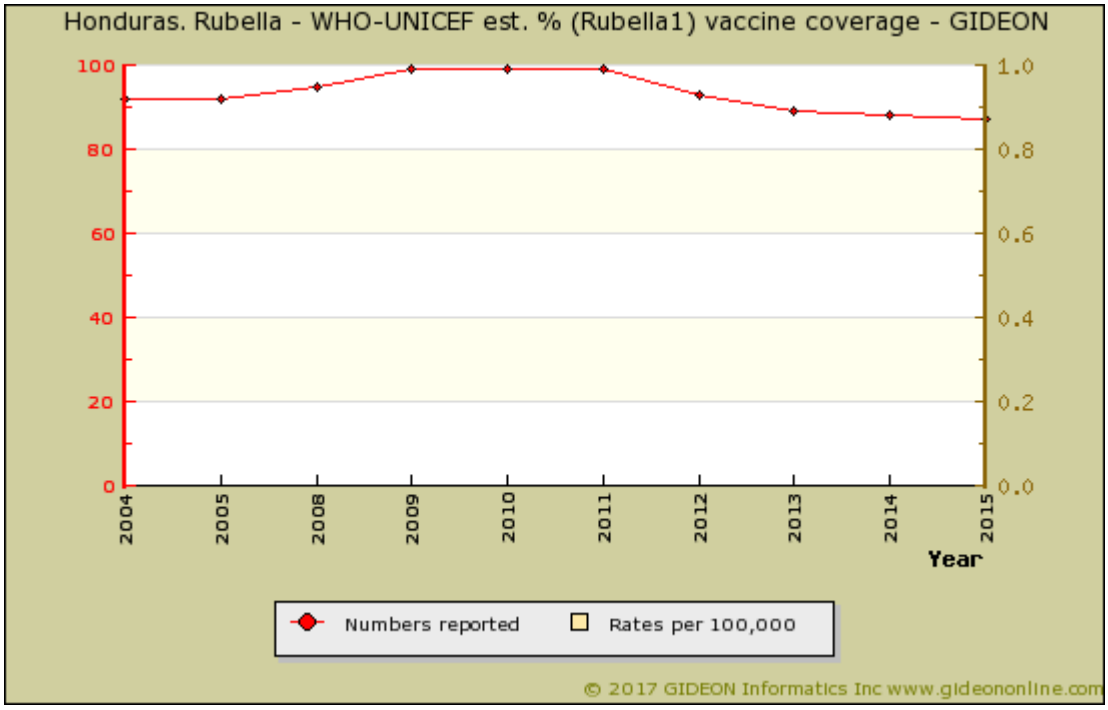
Rubella

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

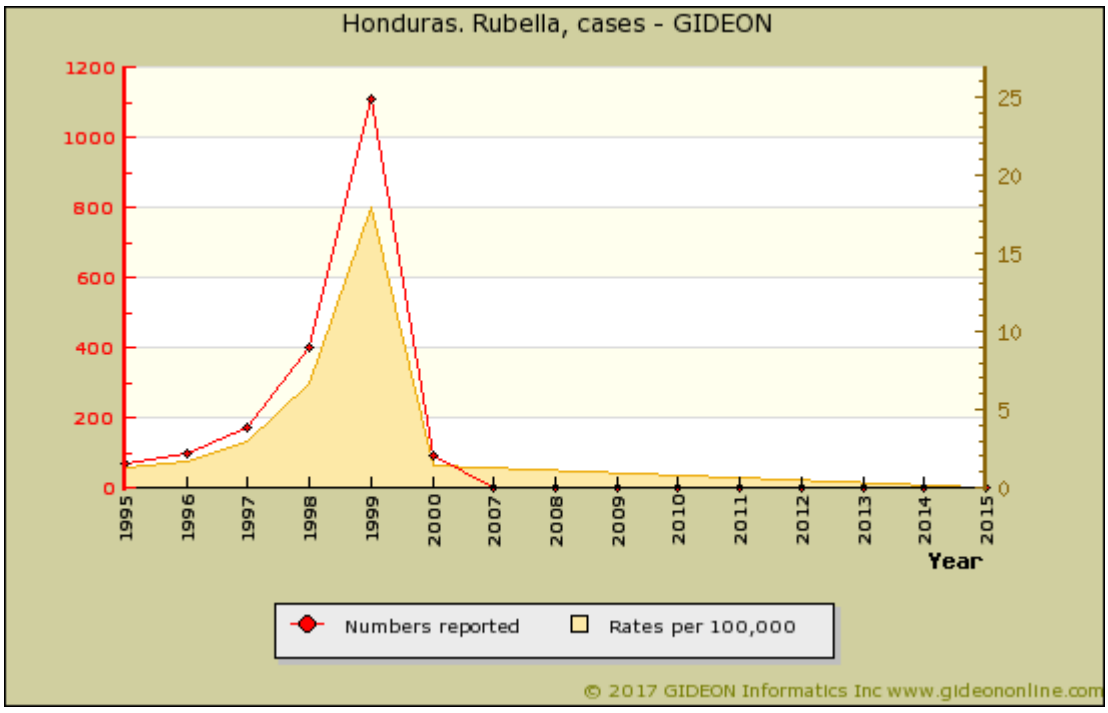
Rubella in Honduras

Vaccine Schedule:

BCG - birth
DT - 4,6,18 months; 4 years risk groups
DTwP - 18 months; 4 years
DTwPHibHepB - 2,4,6 months
HepB - birth 1st contact, +1, +6 months for risk groups
HPV - 11 years
IPV - 2,4,6 months (risk groups)
MMR - 12 months
OPV - 2,4,6,18 months
Pneumo conj - 2,4,6 months
Rotavirus - 2,4 months
Td - 11, 21 years and 3 doses for pregnant women not yet vaccinated

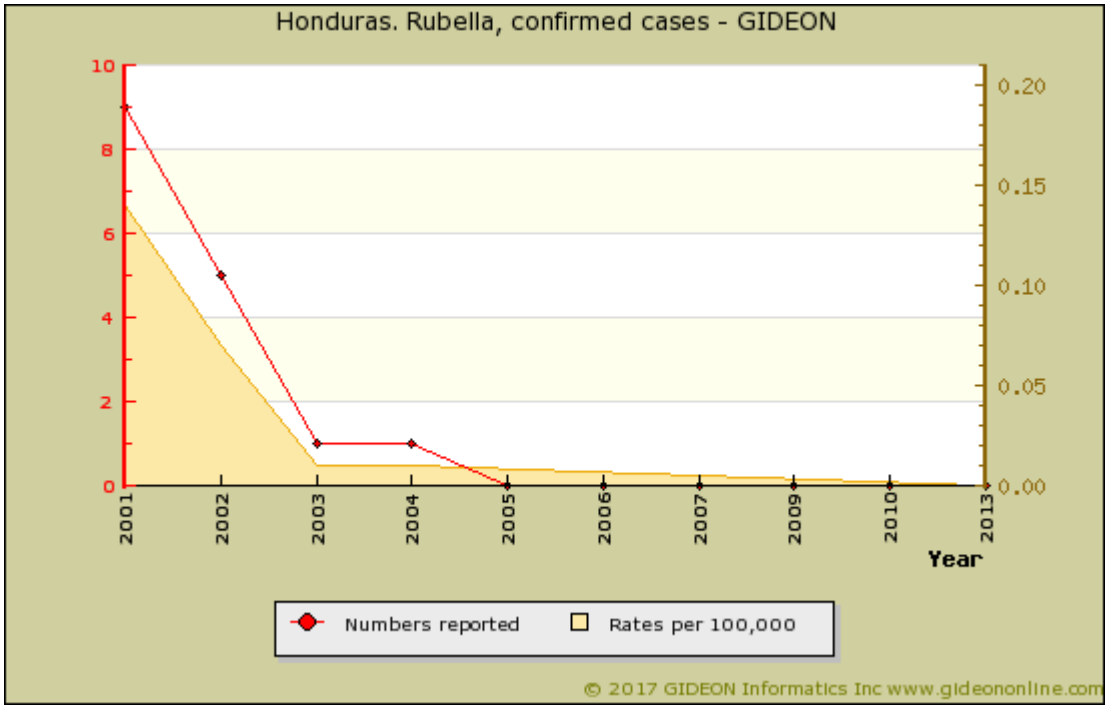


Graph: Honduras. Rubella - WHO-UNICEF est. % (Rubella1) vaccine coverage

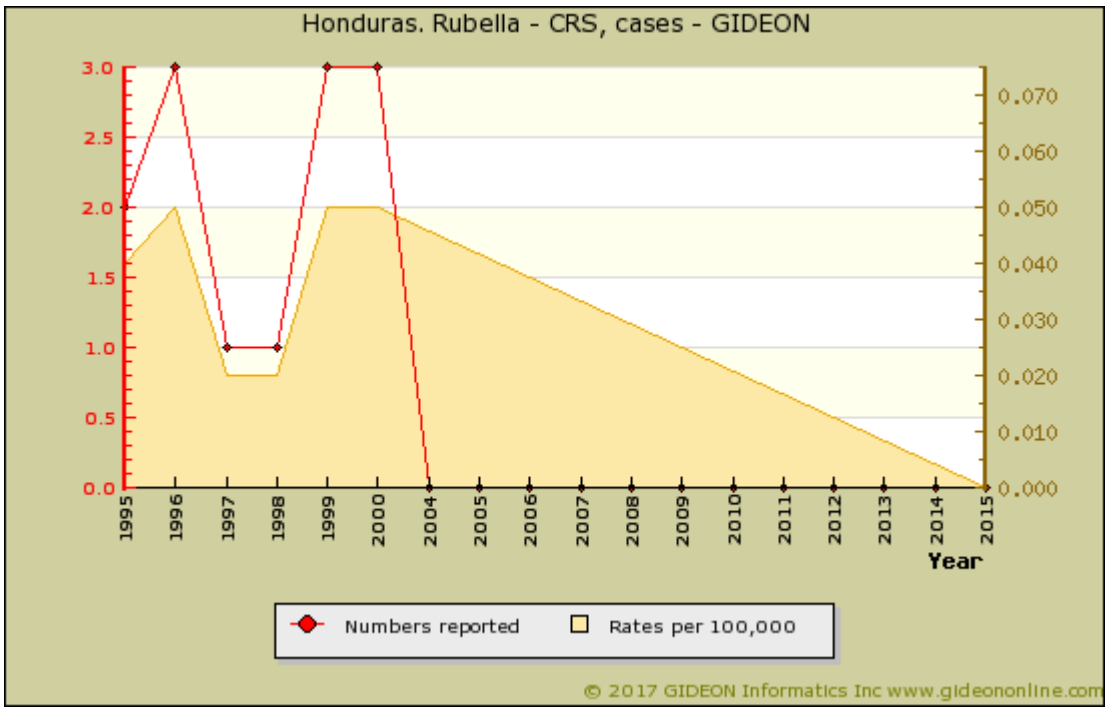


Graph: Honduras. Rubella, cases

Notes:
1. No deaths were ascribed to rubella or congenital rubella during 1995 to 2000.



Graph: Honduras. Rubella, confirmed cases



Graph: Honduras. Rubella - CRS, cases

Notes:
1. Review of CRS surveillance in Honduras - see reference [1]

References

1. J Infect Dis 2011 Sep 01;204 Suppl 2:S637-41.

Salmonellosis

Agent	BACTERIUM. *Salmonella* 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 Honduras

Notable outbreaks

Years	Region	Setting	Cases	Source	Pathogen	Notes
2005	Atlantida	political gathering	600	poultry - chicken		[1]
2008	foreign country		59	fruit - melon	lichtfield	Outbreak in 16 American states (50 cases) and Canada (9 cases) caused by contaminated melon from Honduras [2]

References

1. ProMED <promedmail.org> archive: 20050928.2850
2. ProMED <promedmail.org> archive: 20080323.1098

Sarcocystosis

Agent	PARASITE - Protozoa. Coccidea, Eimeriida: *Sarcocystis bovihominis* or *S. suihominis*
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), Sarcoptiae: *Sarcoptes* (*Acarus*) *scabiei*
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, Sarcoptes scabiei, Sarna, Scabbia, Skabies, Tropical rat mite. ICD9: 133 ICD10: B86

Scarlet fever

Agent	BACTERIUM. *Streptococcus pyogenes* 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

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. *Escherichia coli*, *Staphylococcus aureus*, 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, Setticemia. ICD9: 036.2,036.3,038 ICD10: A40,A41

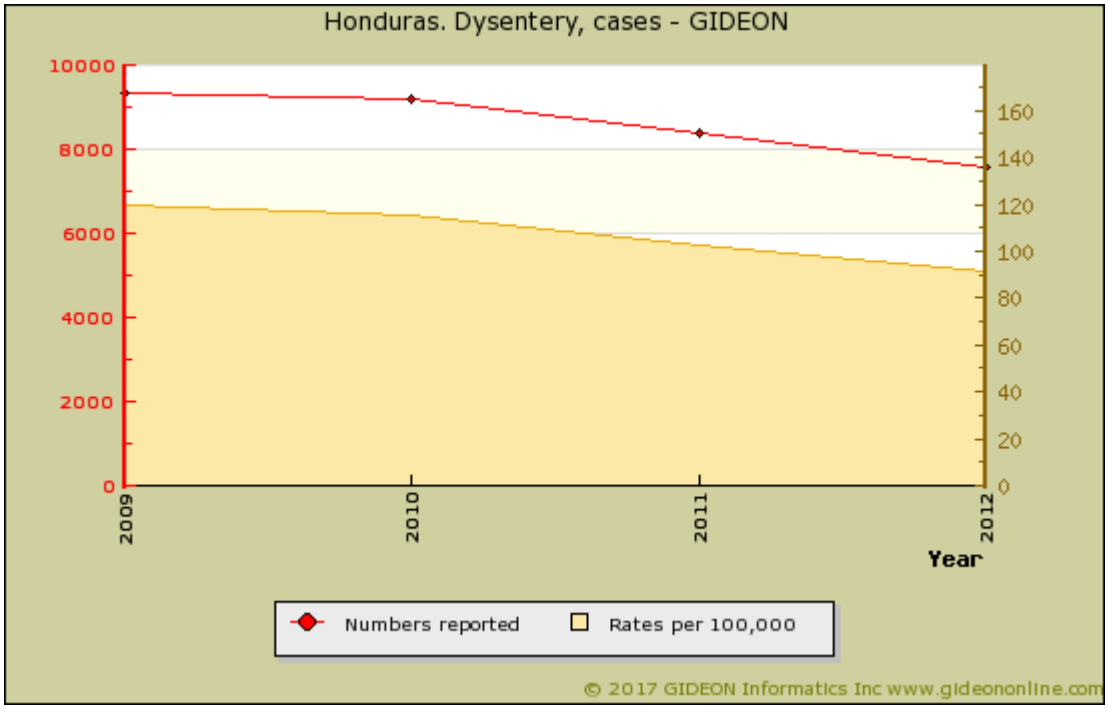
Septicemia - bacterial in Honduras

Mortality rates of 2.0 per 100,000 per year are reported.

Shigellosis

Agent	BACTERIUM. *Shigella sonnei*, *Shigella flexneri*, *Shigella boydii* or *Shigella dysenteriae* 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 *Shigella dysenteriae* infection
Synonyms	Bacillaire dysenterie, Bacillary dysentery, Dissenteria batterica, Dysenteria bacillaris, Leptospirenerkrankung, Ruhr, Shigella, Shigellose, Shigelose, Ubertragbare Ruhr. ICD9: 004 ICD10: A03

Shigellosis in Honduras



Graph: Honduras. Dysentery, cases

Sinusitis

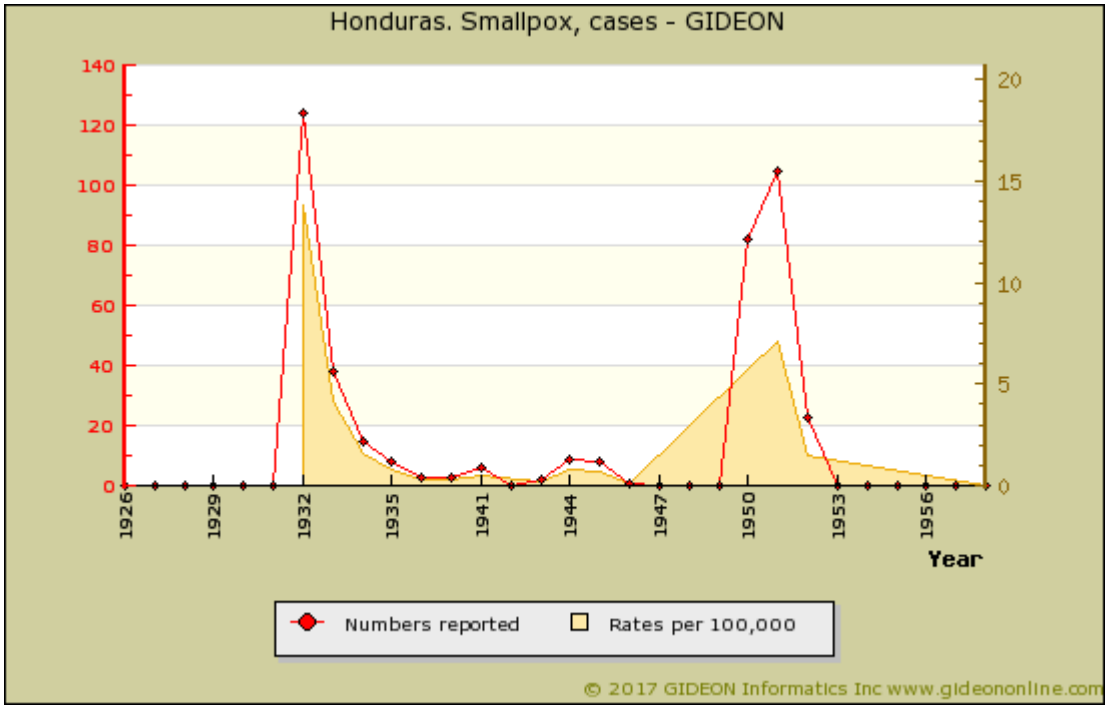
Agent	BACTERIUM. Various (*Haemophilus influenzae* & *Streptococcus pneumoniae* in most acute cases)
Reservoir	Human
Vector	None
Vehicle	None
Incubation Period	Variable
Diagnostic Tests	Imaging techniques. Culture of sinus drainage.
Typical Adult Therapy	Amoxicillin / Clavulanate 2000 / 125 mg BID X 7 days Drainage as indicated Alternatives: Levofloxacin, Cllindamycin, Cefuroxime, Cefdinir
Typical Pediatric Therapy	Amoxicillin / Clavulanate 90 / 6.4 mg/kg BID X 7 days Drainage as indicated Alternatives: Cllindamycin, 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

Smallpox

Agent	VIRUS - DNA. Poxviridae, Orthopoxvirus: Variola virus
Reservoir	Human
Vector	None
Vehicle	Contact, Secretions, Fomite, Respiratory or pharyngeal acquisition
Incubation Period	7d - 17d
Diagnostic Tests	Culture and electron microscopy of skin lesions. Serology. Nucleic acid amplification. Biosafety level 3.
Typical Adult Therapy	Isolation Tecovirimat 400 to 600 mg PO once daily X 14 days Cidofovir is effective in vitro
Typical Pediatric Therapy	Isolation Pediatric dosage of Tecovirimat not established
Vaccine	Smallpox vaccine
Clinical Hints	Fever, myalgia, headache with pustular or hemorrhagic rash Disease resolves in 2 to 3 weeks Reported case-fatality rate is 25% for severe form (variola major) and 1% for minor form; The last naturally-acquired case was reported in Somalia in 1977
Synonyms	Alastrim, Eczema vaccinatum, Kopper, Smallpox, Vailo, Variola, Variola minor, Varioloid. ICD9: 050 ICD10: B03

Not currently endemic to any country.
Although Smallpox is not endemic to Honduras, imported, expatriate or other presentations of the disease have been associated with this country.

Smallpox in Honduras



Graph: Honduras. Smallpox, cases

Indigenous transmission ended in 1935, reappeared and ended again in 1952.

Sporotrichosis

Agent	FUNGUS. Ascomycota, Euascomycetes, Ophiostomatales: *Sporothrix schenckii*, *S. brasiliensis* and *S. globosa* 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, Sporothrix brasiliensis, Sporothrix chiensis, Sporothrix globosa, Sporothrix mexicana, Sporothrix schenckii, Sporotrichose. ICD9: 117.1 ICD10: B42

Spotted fevers - New World

Agent	BACTERIUM. *Rickettsia rickettsii* *Rickettsia parkeri* and *Rickettsia amblyommii* associated with similar illness
Reservoir	Tick, Dog, Rodent
Vector	Tick (*Dermacentor*, *Amblyomma*)
Vehicle	None
Incubation Period	5d - 7d (range 2d - 14d)
Diagnostic Tests	Serology. Direct immunofluorescence or culture of skin lesions. Nucleic acid amplification.
Typical Adult Therapy	Doxycycline 100 mg PO BID X 7d. OR Chloramphenicol 500 mg PO QID X7d
Typical Pediatric Therapy	Doxycycline 2 mg/kg PO BID X 7d (maximum 200 mg/day). OR Chloramphenicol 10 mg/kg PO QID X 7d
Clinical Hints	Headache, myalgia, vomiting and a maculopapular or petechial rash (primarily involving the extremities); May be history of a tick bite or dog contact during the preceding 1 to 2 weeks Rash is absent in 5% Reported case-fatality rate (untreated) is 25%
Synonyms	American spotted fever, Bullis fever, Febre maculosa brasileira, Fiebre manchada, Lone star fever, Rickettsia 364D, Rickettsia amblyommii, Rickettsia canadensis, Rickettsia montanensis, Rickettsia parkeri, Rickettsia philippi, Rickettsia rickettsii, Rickettsia texiana, Rickettsiae, RMSF, Rocky Mountain spotted fever, Sao Paulo fever, Tidewater spotted fever, Tobia fever. ICD9: 082.0,082.8 ICD10: A77.0

Spotted fevers - New World in Honduras

2009 (publication year) - A traveler from the United States acquired presumed rickettsial spotted fever while in Honduras. [1]

References

1. Emerg Infect Dis 2009 Aug ;15(8):1321-3.

St. Louis encephalitis

Agent	VIRUS - RNA. Flaviviridae, Flavivirus: St. Louis encephalitis virus
Reservoir	Bird, Mammal
Vector	Mosquito (*Culex pipiens*, *Cx. tarsalis*, *Cx. nigripalpus*, *Cx. restuans*, *Cx. salinarius*, *Aedes*, *Sabethes*)
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. *Staphylococcus aureus* 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. *Staphylococcus aureus* 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 S. aureus 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. *Streptococcus suis* I and *Streptococcus suis* 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: *Strongyloides stercoralis* (*Strongyloides fulleborni* is occasionally implicated in systemic disease)
Reservoir	Human, Dog, Monkey (for *Strongyloides fulleborni*)
Vector	None
Vehicle	Skin contact, Soil, Feces, Autoinfection, Sexual contact
Incubation Period	14d - 30d
Diagnostic Tests	Identification of larvae (or ova, for Strongyloides fulleborni) 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 Honduras

Prevalence surveys

Years	Study Group	%	Notes
1991*	children	2.6	2.6% of rural children with diarrhea (1991 publication) [1]
2004*	patients - HIV/AIDS	7.5	7.5% of HIV-positive patients (2004 publication) [2]

* indicates publication year (not necessarily year of survey)

References

1. Trans R Soc Trop Med Hyg 1991 Jan-Feb;85(1):70-3.
2. Mem Inst Oswaldo Cruz 2004 Nov ;99(7):773-8.

Subdural empyema

Agent	BACTERIUM. *Haemophilus influenzae*, 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	

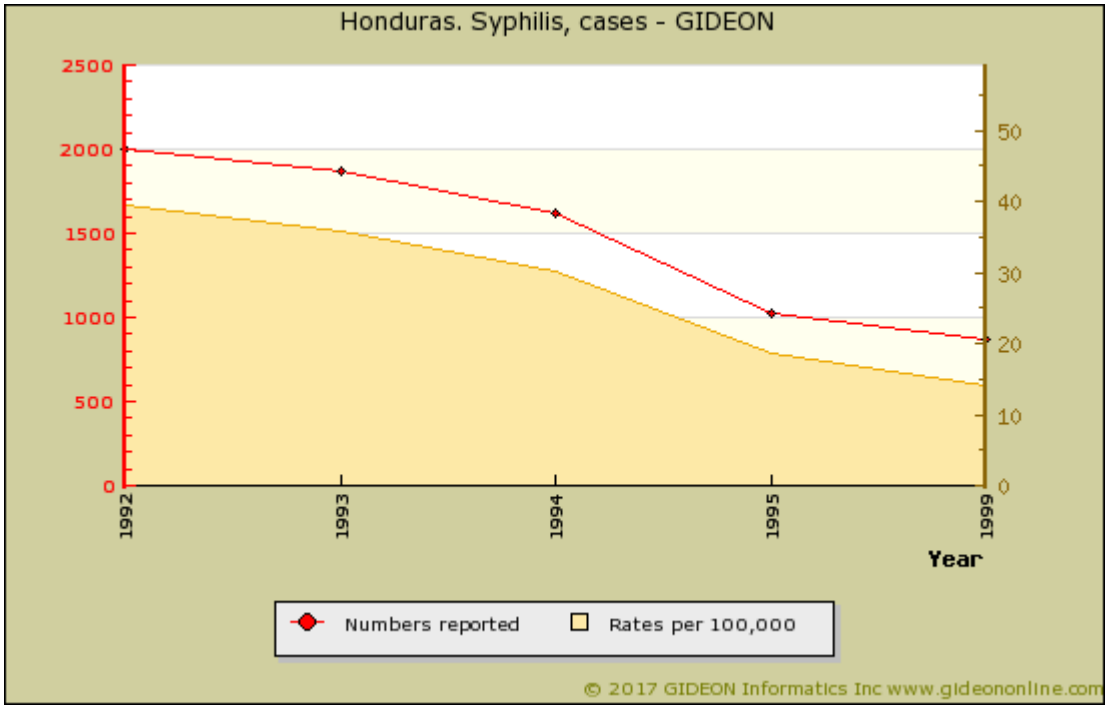
Suppurative parotitis

Agent	BACTERIUM. Most commonly *Staphylococcus aureus*
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. *Treponema pallidum* subsp. *pallidum* 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 (chancre). 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, Syfilis, Treponema pallidum. ICD9: 090,091,092,093,094,095,096,097 ICD10: A50,A51,A52,A53

Syphilis in Honduras



Graph: Honduras. Syphilis, cases

Notes:
1. Syphilis is the tenth most common communicable disease in Honduras.

Five cases of congenital syphilis were reported in 1997.
- The rate of congenital syphilis was 1,200 per 100,000 in 2002. [1]

Seroprevalence surveys

Years	Study Group	%	Notes
2009*	general population	2.4	2.4% of Garifuna people (2009 publication) [2]
1995	pregnant women	1.3	1.3% of pregnant women (1995)
2004	pregnant women	3.5	3.5% of pregnant women (PAHO statistic) (2004)
1991	sex workers	17	17% of CSW (1991) [3]
2006	sex workers	2.3	2.3% of urban CSW in 2006 [4]
2008	sex workers	0	0.0% of urban CSW in 2008 [5]

* indicates publication year (not necessarily year of survey)

46% of syphilitic men who have sex with men are HIV-positive (2002 to 2003).

References

1. Rev Panam Salud Publica 2004 Sep ;16(3):211-7.
2. J Acquir Immune Defic Syndr 2009 May 01;51 Suppl 1:S26-34.
3. Int J STD AIDS 1991 Mar-Apr;2(2):110-3.
4. Int J STD AIDS 2012 Feb ;23(2):88-93.
5. Int J STD AIDS 2012 Feb ;23(2):88-93.

Taeniasis

Agent	PARASITE - Platyhelminthes, Cestoda. Cyclophyllidea, Taeniidae: *Taenia solium* & *T. saginata* (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	Bandwurmer [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 Honduras

Taenia solium accounts for 74.5% of *Taenia* infections.

Prevalence surveys

Years	Study Group	%	Notes
1991	general population	1.4-6.2	1.4% to 6.2% of the southern rural population (1991) [1]
1995	general population	1.5	1.5% of the rural population (1995) [2]

Seroprevalence surveys

Years	Region	Study Group	%	Notes
1998*	Tegucigalpa	general population	15-22	22% of persons from rural Tegucigalpa, and 15% from urban Tegucigalpa (*Taenia solium*, 1998 publication) [3]
1998*	Salama	pigs	27.1	27.1% of pigs in Salama (1998 publication) [4]

* indicates publication year (not necessarily year of survey)

References

1. Trans R Soc Trop Med Hyg 1991 Jul-Aug;85(4):531-4.
2. Ann Trop Med Parasitol 1997 Mar ;91(2):163-71.
3. Acta Trop 1998 May ;69(2):141-9.
4. Vet Parasitol 1998 Aug 14;78(3):233-8.

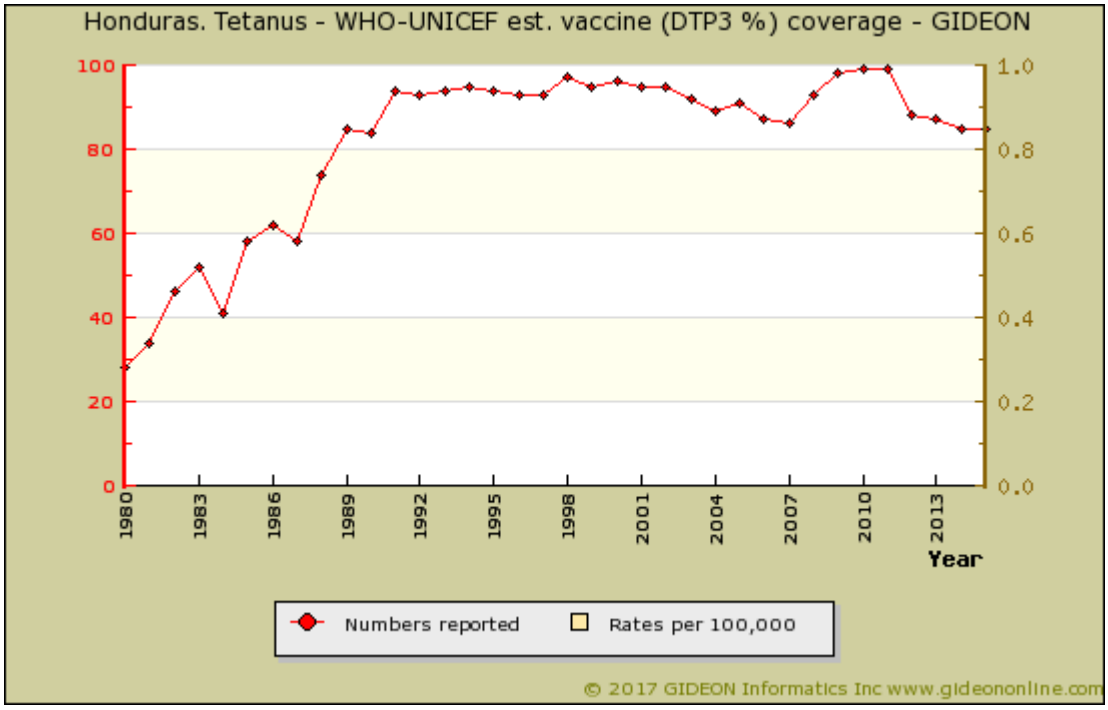
Tetanus

Agent	BACTERIUM. *Clostridium tetani* An anaerobic gram-positive bacillus
Reservoir	Animal feces, Soil
Vector	None
Vehicle	Trauma
Incubation Period	6d - 8d (range 1d - 90d)
Diagnostic Tests	Isolation of C. tetani 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, Stelkramp, Tetano, Tetanos. ICD9: 037,771.3 ICD10: A33,A34,A35

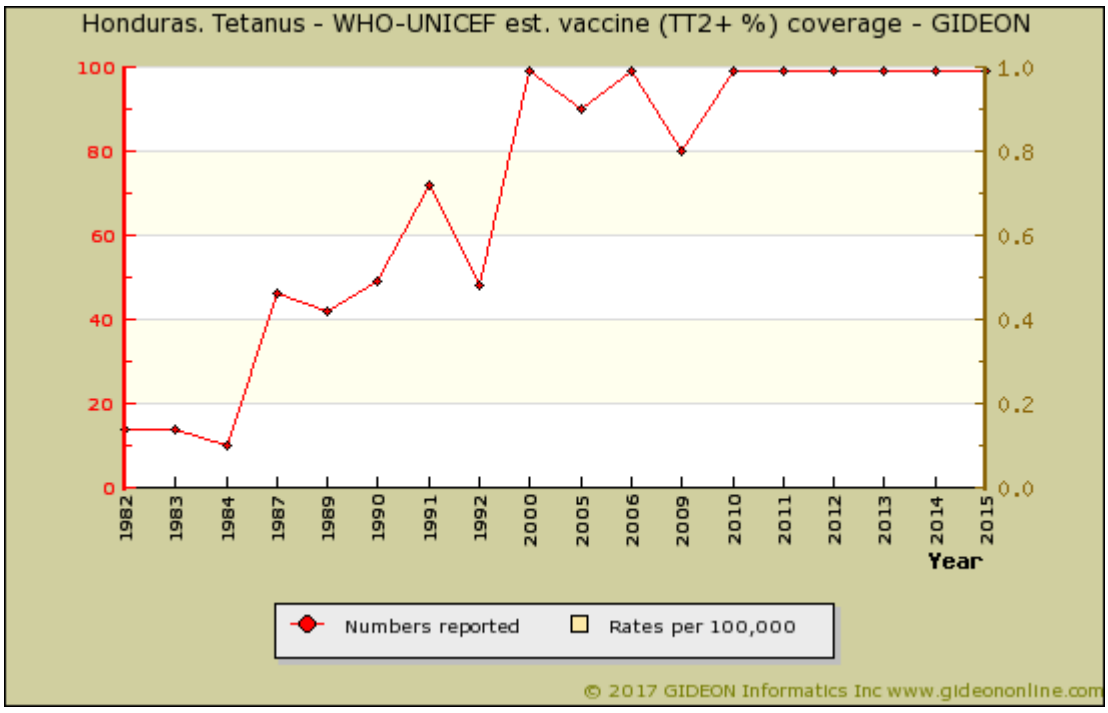
Tetanus in Honduras

Vaccine Schedule:

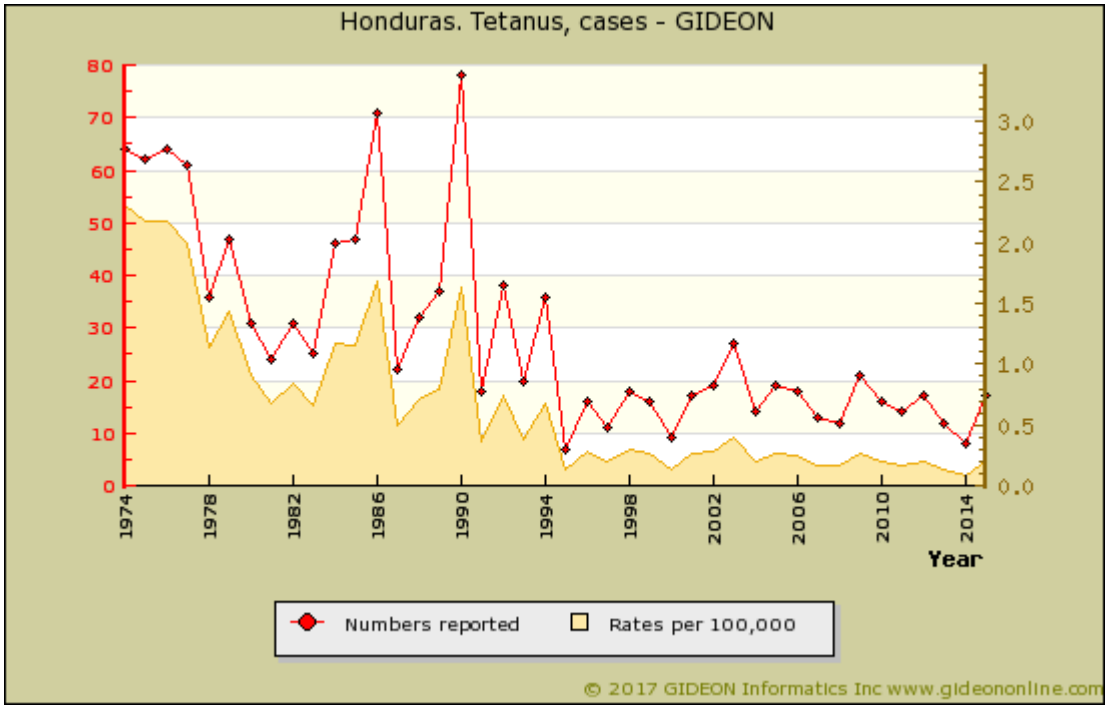
BCG - birth
DT - 4,6,18 months; 4 years risk groups
DTwP - 18 months; 4 years
DTwPHibHepB - 2,4,6 months
HepB - birth 1st contact, +1, +6 months for risk groups
HPV - 11 years
IPV - 2,4,6 months (risk groups)
MMR - 12 months
OPV - 2,4,6,18 months
Pneumo conj - 2,4,6 months
Rotavirus - 2,4 months
Td - 11, 21 years and 3 doses for pregnant women not yet vaccinated



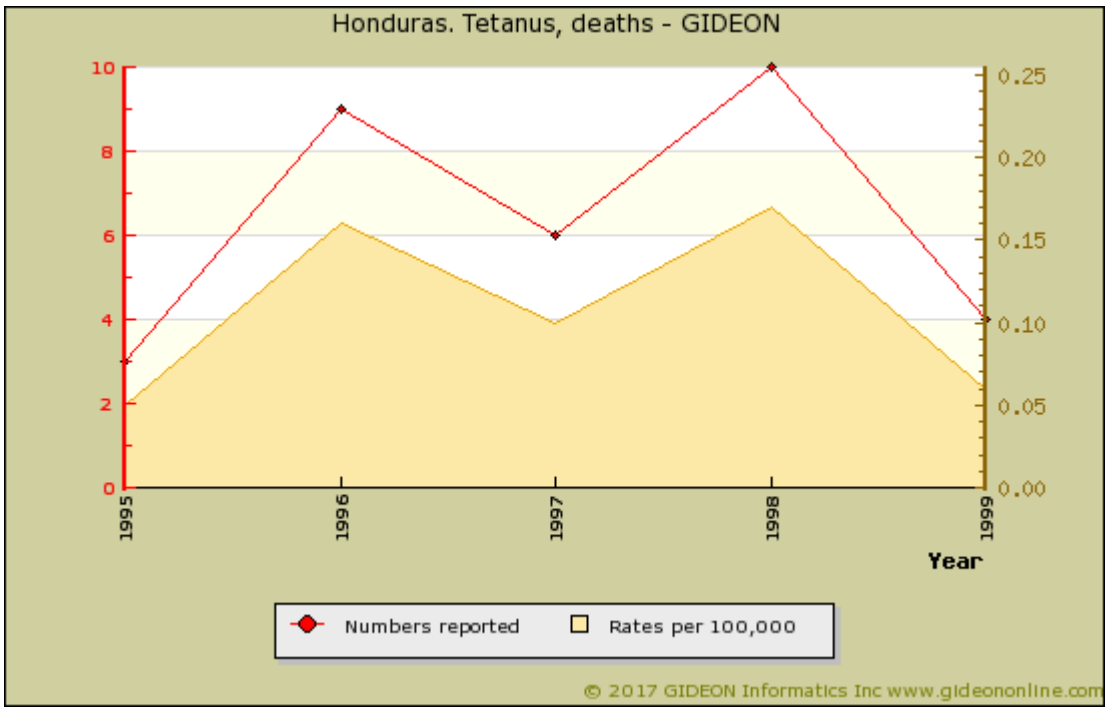
Graph: Honduras. Tetanus - WHO-UNICEF est. vaccine (DTP3 %) coverage



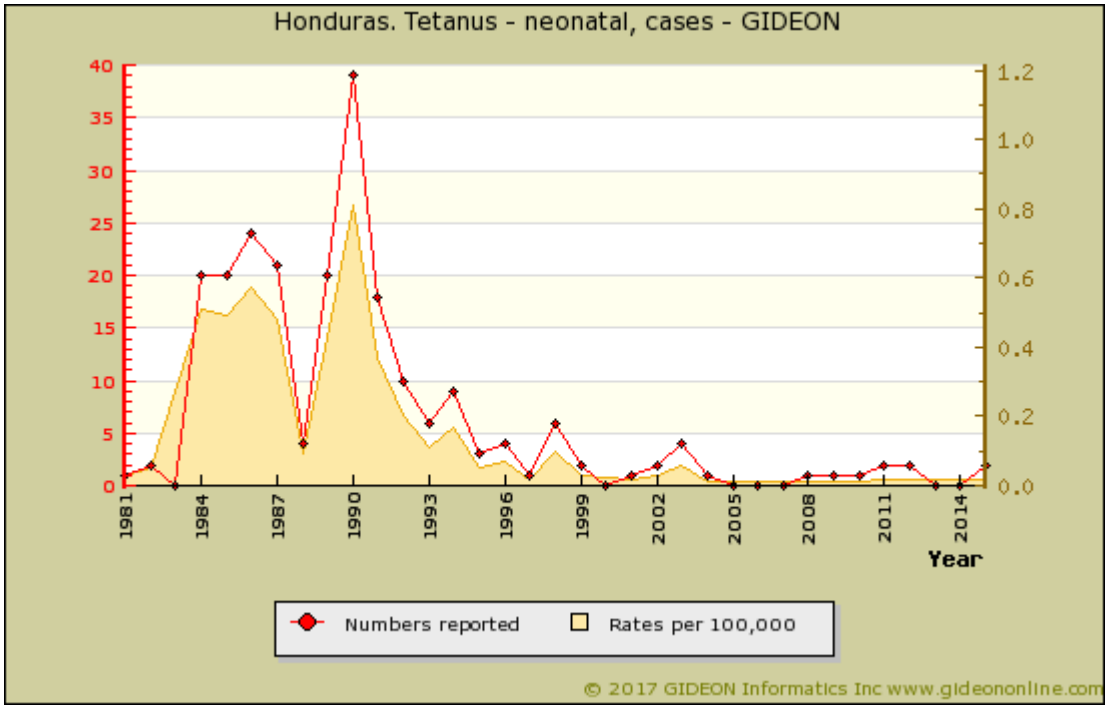
Graph: Honduras. Tetanus - WHO-UNICEF est. vaccine (TT2+ %) coverage



Graph: Honduras. Tetanus, cases



Graph: Honduras. Tetanus, deaths



Graph: Honduras. Tetanus - neonatal, cases

Notes:
Individual years:
1995 - All fatal.
1996 - All fatal.
1997 - One fatal.
1998 - Three fatal.
1999 - One fatal.

Thelaziasis

Agent	PARASITE - Nematoda. Secernentea: *Thelazia callipaeda* (rarely *T. californiensis*)
Reservoir	Dog, Rabbit, Deer, Cat
Vector	Fly (*Musca* and *Fannia 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, Thelazia californiensis, Thelazia callipaeda. ICD9: 372.15 ICD10: B83.8

Toxic shock syndrome

Agent	BACTERIUM. *Staphylococcus aureus*, *Streptococcus pyogenes*, et al - (toxins) Facultative gram-positive cocci
Reservoir	Human
Vector	None
Vehicle	Tampon (Bandage, etc)
Incubation Period	Unknown
Diagnostic Tests	Isolation of toxigenic Staphylococcus aureus. 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: *Toxocara cati* and *T. canis*
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: *Toxoplasma gondii*
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 folinic 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 folinic 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, Toxoplasmose, Toxoplasmosi. ICD9: 130 ICD10: B58

Trachoma

Agent	BACTERIUM. *Chlamydia trachomatis*, 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. *Trichinella spiralis* (occasionally *T. nativa*, *T. britovi*, *T. pseudospiralis*, *T. nelsoni*, 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, Triqunosis. ICD9: 124 ICD10: B75

Trichinosis in Honduras

Trichinosis, cases: None reported between 2000 and 2003

Trichomoniasis

Agent	PARASITE - Protozoa. Metamonada, Parabasala, Trichomonadea. Flagellate: *Trichomonas vaginalis*
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 Honduras

Prevalence surveys

Years	Study Group	%	Notes
2009*	general population	10.5	10.5% Garifuna people (urine specimens, 2009 publication) [1]

* indicates publication year (not necessarily year of survey)

References

1. J Acquir Immune Defic Syndr 2009 May 01;51 Suppl 1:S26-34.

Trichuriasis

Agent	PARASITE - Nematoda. *Trichuris trichiura*
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 Honduras

Prevalence surveys

Years	Study Group	%	Notes
2011	children	67	67% of rural school-age children (2011) [1]
2011	children	66.9	66.9% of rural school children (2011) [2]
2014*	children	34	34% of 3rd to 5th grade school children (2014 publication) [3]
1998	general population	38	38% of the rural population (1998) [4]
2004*	patients - HIV/AIDS	44.3	44.3% of HIV-positive patients (2004 publication) [5]

* indicates publication year (not necessarily year of survey)

Prevalence rates exceed 20% in 68% of municipalities (1930 to 2012) [6]

References

1. PLoS Negl Trop Dis 2013 ;7(8):e2378.
2. Parasit Vectors 2014 Aug 04;7:354.
3. PLoS Negl Trop Dis 2014 Oct ;8(10):e3248.
4. Mem Inst Oswaldo Cruz 2001 Apr ;96(3):303-14.
5. Mem Inst Oswaldo Cruz 2004 Nov ;99(7):773-8.
6. PLoS Negl Trop Dis 2014 ;8(1):e2653.

Tropical phagedenic ulcer

Agent	BACTERIUM Mixed infection by *Fusobacterium* species and *Borrelia*
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 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

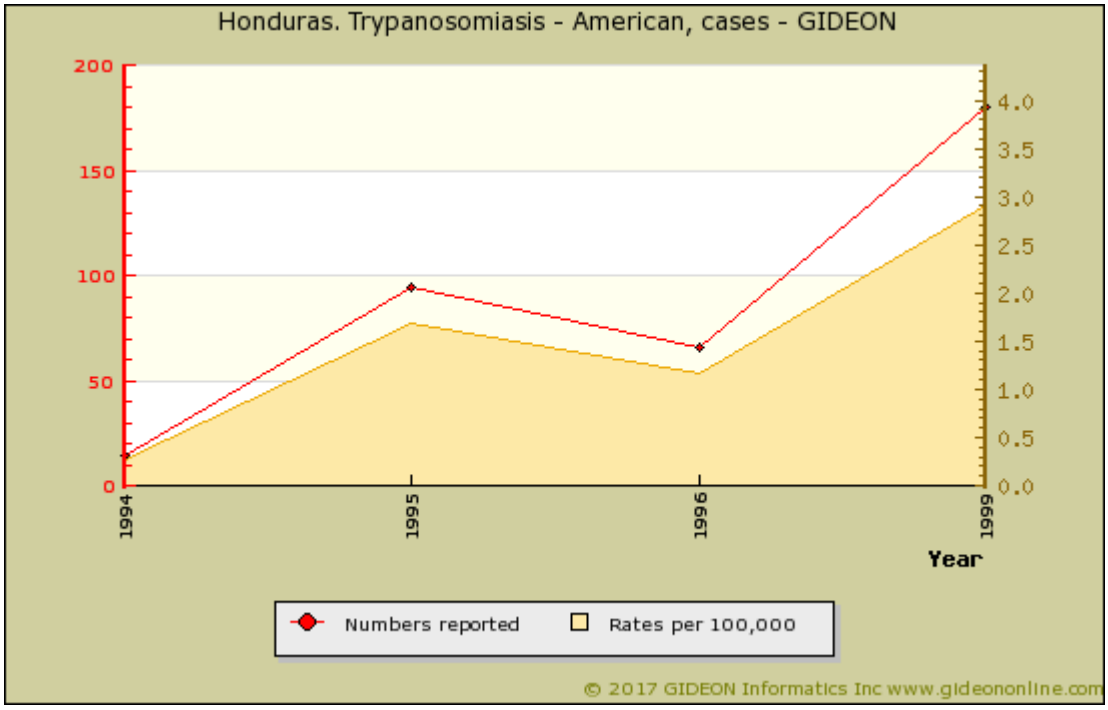
Trypanosomiasis - American

Agent	PARASITE - Protozoa. Euglenozoa, Kinetoplastidea. Flagellate: *Trypanosoma cruzi*
Reservoir	Human, Dog, Cat, Pig, Guinea pig, Armadillo, Rat, Fox, Opossum, Raccoon, Bat, Mouse, Monkey, Rabbit
Vector	Triatome bug (*Panstrongylus*, *Rhodnius* and *Triatoma* spp.)
Vehicle	Blood, Water, Food (fruit contaminated with insect secretions)
Incubation Period	5d - 14d (acute illness)
Diagnostic Tests	Identification of protozoa in blood or tissue. Serology. Xenodiagnosis. PCR (more sensitive than serology)
Typical Adult Therapy	Nifurtimox 2 mg/kg PO QID X 3m. OR Benznidazole 3 to 5 mg/kg/d X 30 to 120d
Typical Pediatric Therapy	Nifurtimox: Age 1 to 10 years: 5 mg/kg PO QID X 3m Age 11 to 16 years: 3.5 mg/kg PO QID X 3m (age 11 to 16y) OR Benznidazole 3.75 mg/kg PO BID X 2m; or
Clinical Hints	Unilateral periorbital swelling (Romana's sign) with lymphadenopathy, hepatosplenomegaly and encephalitis Later cardiomyopathy, megaesophagus and megacolon 20% of patients progress to chronic stage Overall case-fatality rate is 10%
Synonyms	American trypanosomiasis, Chagas' disease, Chagas-Cruz disease, Chagas-Krankheit, Trypanosoma cruzi, Trypanosoma rangeli, Trypansomiasis, amerikanische. ICD9: 086.0,086.1,086.2 ICD10: B57

Trypanosomiasis - American in Honduras

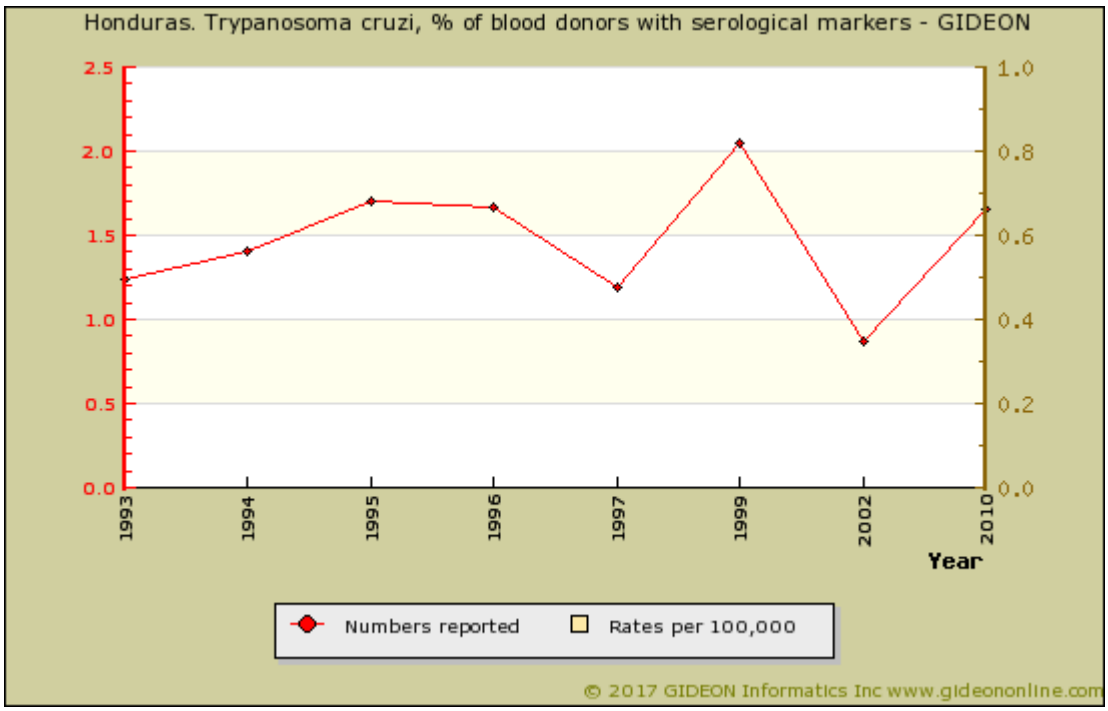
Time and Place:
Highest rates of trypanosomiasis are registered in the western, eastern and southern regions.

- As many as 300,000 (6% of the population) are infested - 65,000 of these in "the late stages of the disease" as of January 1997. [1]
- In 2010, 73,333 prevalent cases were estimated (0.917 per 100 population; 14,667 with cardiomyopathy) ; 1.650% of blood donors, 933 new vectorial cases (0.0110 per 100 population) and 257 congenital cases (0.126 per 100 live births) were estimated for 2010. The population at risk was estimated at 1,171,133. [2]



Graph: Honduras. Trypanosomiasis - American, cases

Notes:
1. Clinical cases only.
2. 11,490 new cases were estimated for 1990.



Graph: Honduras. *Trypanosoma cruzi*, % of blood donors with serological markers

Notes:
1. 1.6% of blood in blood banks are infected (1993).
2. 26 cases of transfusion-acquired infection were estimated for 1993. [3] The chance of acquiring trypanosomiasis was estimated at 13.02 per 10,000 transfusions.

Seroprevalence surveys

Years	Region	Study Group	%	Notes
1999 - 2002	Yoro	children	0.93	0.93% of children below age 12 years, in Yoro (1999 to 2002) [4] [5]
2003 - 2007		children	0.46-4.89	0.46% / 4.89% of children ages 5 years / 5 to 15 years during 2003 to 2007
2008 - 2010		children	0.1-0.6	0.1% age 5, 0.6% ages 5 to 15 years (2008 to 2010)

Vectors:

- The local vectors are *Rhodnius prolixus* (mountainous rural areas extending from the Guatemalan border to those of El Salvador and Nicaragua); and *Triatoma dimidiata* (throughout the country in both rural and urban areas). [6]
- 35% of *R. prolixus* and 45% of *T. dimidiata* are infested.

References

1. ProMED <promedmail.org> archive: 19970111.0046
2. Wkly Epidemiol Rec 2015 Feb 6;90(6):33-43.
3. Mem Inst Oswaldo Cruz 1999 ;94 Suppl 1:93-101.
4. PLoS Negl Trop Dis 2009 Jul 07;3(7):e488.
5. Mem Inst Oswaldo Cruz 2009 Nov ;104(7):986-91.
6. Medicina (B Aires) 1999 ;59 Suppl 2:117-9.

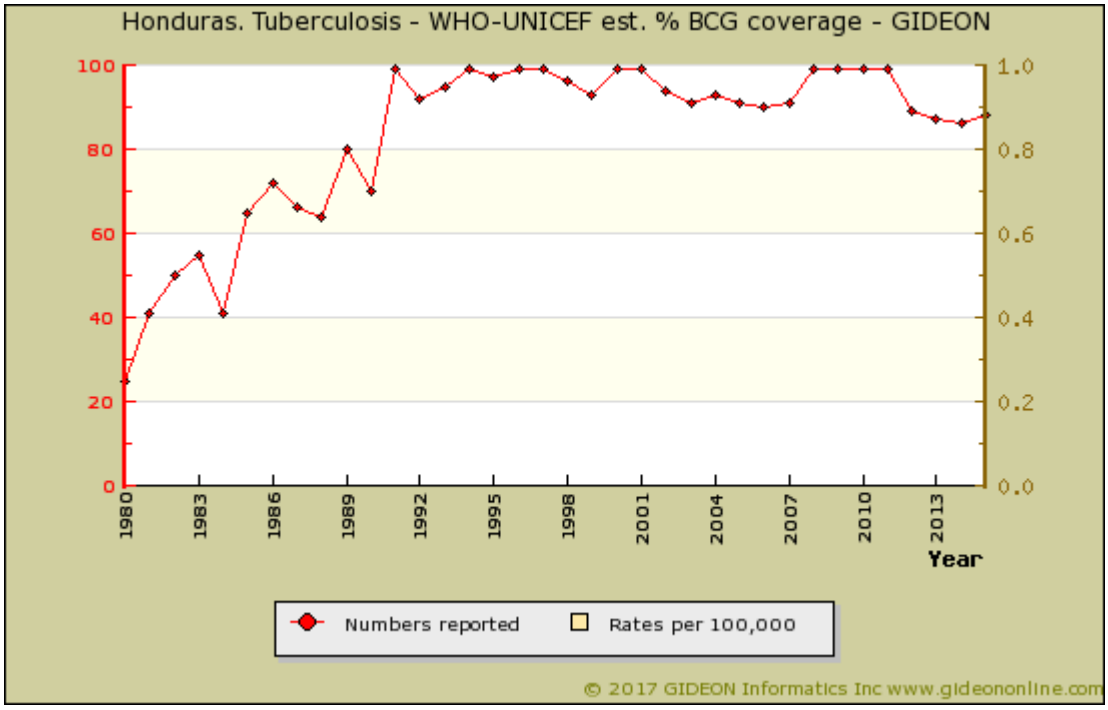
Tuberculosis

Agent	BACTERIUM. Actinomycetes, *Mycobacterium tuberculosis* 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 Honduras

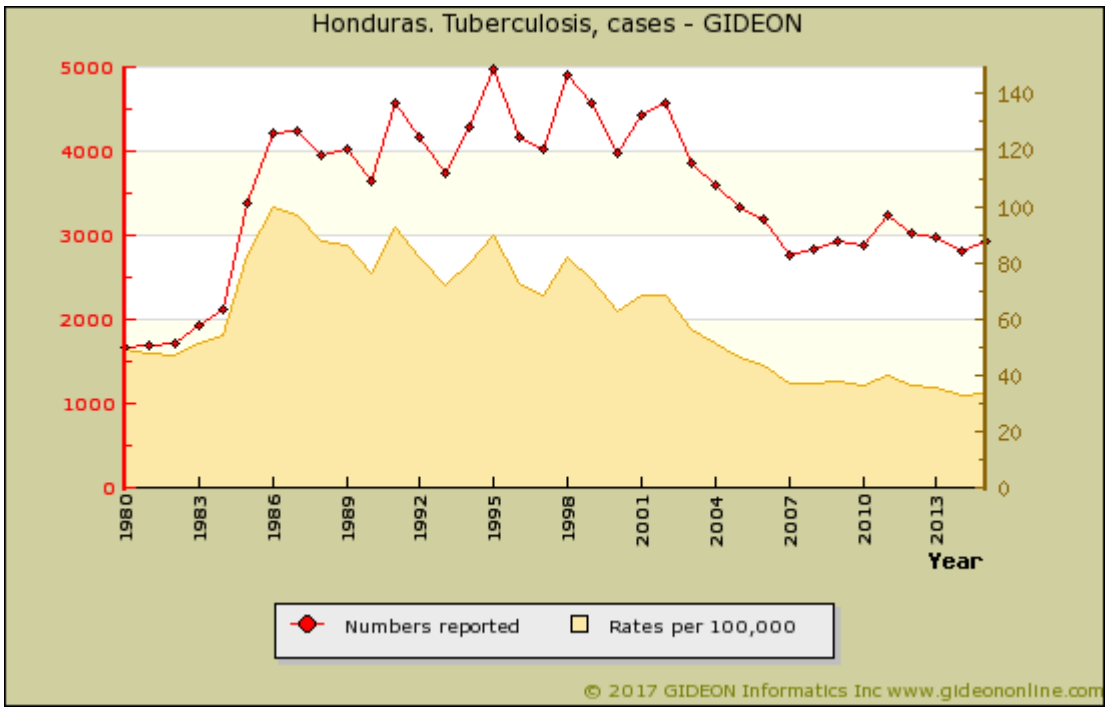
Vaccine Schedule:

BCG - birth
DT - 4,6,18 months; 4 years risk groups
DTwP - 18 months; 4 years
DTwPHibHepB - 2,4,6 months
HepB - birth 1st contact, +1, +6 months for risk groups
HPV - 11 years
IPV - 2,4,6 months (risk groups)
MMR - 12 months
OPV - 2,4,6,18 months
Pneumo conj - 2,4,6 months
Rotavirus - 2,4 months
Td - 11, 21 years and 3 doses for pregnant women not yet vaccinated

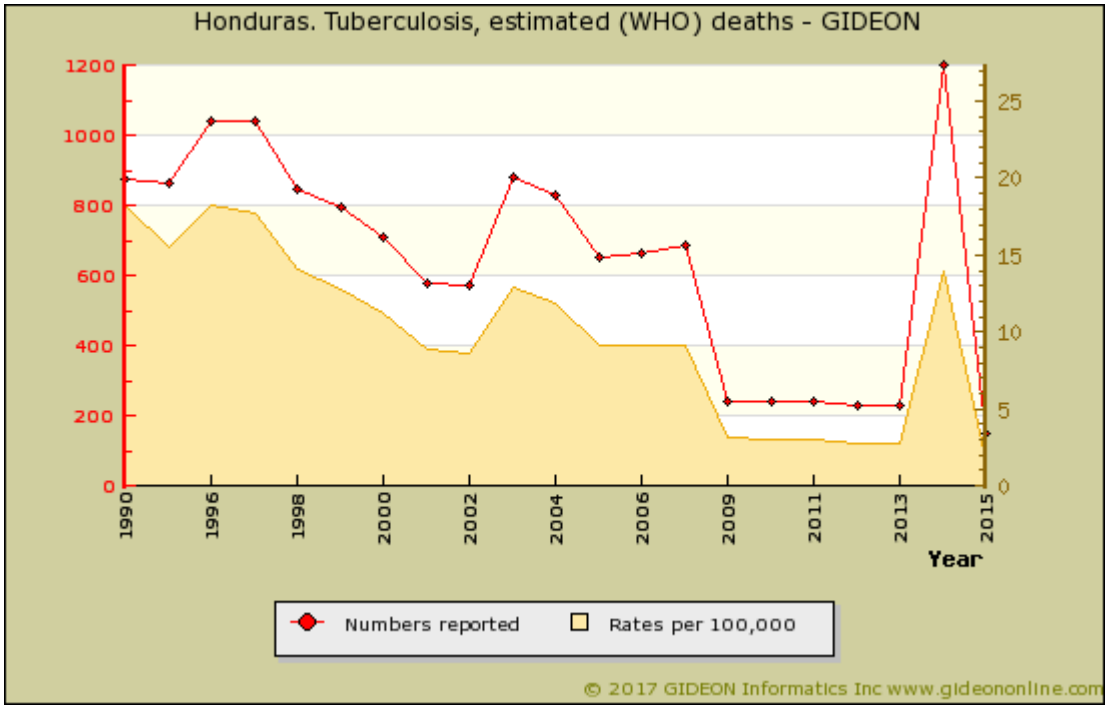


Graph: Honduras. Tuberculosis - WHO-UNICEF est. % BCG coverage

Highest incidence is reported from the center and northeast.



Graph: Honduras. Tuberculosis, cases



Graph: Honduras. Tuberculosis, estimated (WHO) deaths

Notes:
1. The mortality rate for tuberculosis was 4.9 per 100,000 in 1992; 5.0 per 100,000 in 1996.
2. 134 tuberculosis deaths were reported in 1999.

In 2001, 8% of tuberculosis patients were HIV positive.

15% of *Mycobacterium tuberculosis* isolates (1997) are resistant to isoniazid; 15% to rifampin. [1]

Notable outbreaks

Years	Region	Population	Notes
2013	Northwestern Region	cattle	[2]

References

1. Chest 1997 Jan ;111(1):148-53.
2. ProMED <promedmail.org> archive: 20130911.1936137

Tungiasis

Agent	PARASITE - Insecta Siphonaptera (Flea), Tungidae: *Tunga penetrans* and *T. trimamillata* ("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, Tunga penetrans, Tunga trimamillata, Tungosis. ICD9: 134.1 ICD10: B88.1

Typhoid and enteric fever

Agent	BACTERIUM. *Salmonella* serotype Typhi (certain other Salmonella 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, Salmonella serotype Typhi, Tyfoid, Typhoid, Typhoide. ICD9: 002 ICD10: A01

Typhoid and enteric fever in Honduras

129 cases of typhoid (24 fatal) were reported in 1944; 115 (21 fatal) in 1945

Notable outbreaks

Years	Region	Cases	Source	Notes
1998 - 1999	foreign country	16	fruit	Outbreak (16 cases or more) in the United States was ascribed to frozen mamey (a tropical fruit) imported from Honduras and Guatemala. [1] [2] [3]

References

1. J Infect Dis 2002 Jul 15;186(2):234-9.
2. Clin Infect Dis 2012 Jul ;55(1):61-6.
3. ProMED <promedmail.org> archive: 19990222.0236

Typhus - endemic

Agent	BACTERIUM. *Rickettsia typhi*
Reservoir	Rat
Vector	Flea (*Xenopsylla* or *Nosopsyllus* 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, Rickettsia typhi, Ship typhus, Tifo murino, Tifus pulgas, Vlektyphus. ICD9: 081.0 ICD10: A75.2

Urinary tract infection

Agent	BACTERIUM OR FUNGUS. *Escherichia coli*, 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

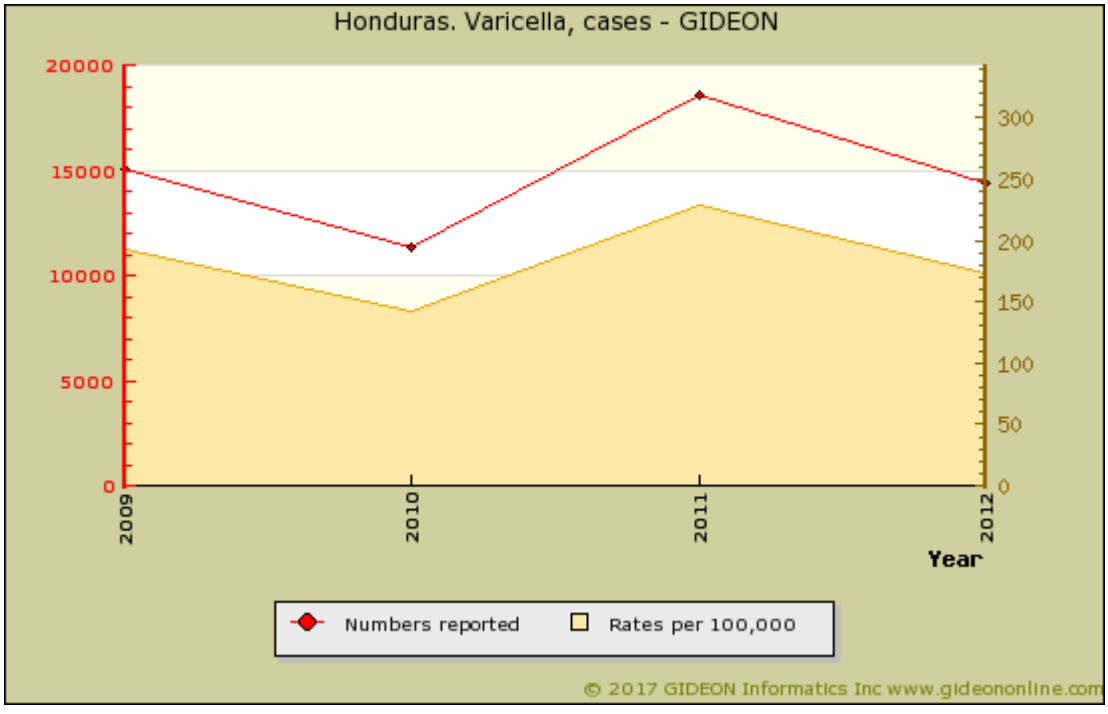
Vaccinia and cowpox

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, Vattenkoppor, Waterpokken, Windpocken. ICD9: 052 ICD10: B01

Varicella in Honduras



Graph: Honduras. Varicella, cases

Venezuelan equine encephalitis

Agent	VIRUS - RNA. Togaviridae, Alphavirus: Venezuelan equine encephalitis virus
Reservoir	Rodent, Horse
Vector	Mosquito (*Culex* spp, *Aedes taeniorhynchus*, *Psorophora confinnis*, *Anopheles*) spp)
Vehicle	None
Incubation Period	2d - 5d (range 1d - 6d)
Diagnostic Tests	Viral culture (throat, blood, brain tissue). Serology. Nucleic acid amplification. Biosafety level 3.
Typical Adult Therapy	Supportive
Typical Pediatric Therapy	As for adult
Vaccine	Western equine encephalitis vaccine
Clinical Hints	Fever, myalgia, arthralgia, vomiting, conjunctivitis and encephalitis Encephalitis is more common and more severe among children Case-fatality rate is 20%.
Synonyms	Everglades, Mucambo, Peste loca, Pixuna, Rio Negro, Tonate. ICD9: 066.2 ICD10: A92.2

Venezuelan equine encephalitis in Honduras

Venezuelan equine encephalitis virus was first described in Honduras during the 1960's. [1]

Equine infection is reported from Copan, El Paraiso, Comayagua and Octopegue departments. [2]

Equine cases were reported in 2001.

Notable outbreaks

Years	Region	Cases	Population	Notes
1998		25		[3]
2003	El Paraiso	20		[4]
2014	Southern Region		equines	[5]

References

1. Am J Trop Med Hyg 1970 Jul ;19(4):703-11.
2. ProMED <promedmail.org> archive: 20020320.3775
3. ProMED <promedmail.org> archive: 19980811.1573
4. ProMED <promedmail.org> archive: 20030226.0483
5. ProMED <promedmail.org> archive: 20140226.2300802

Vibrio parahaemolyticus infection

Agent	BACTERIUM *Vibrio parahaemolyticus* 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

Whipple's disease

Agent	BACTERIUM. Actinomycetes, *Tropheryma whipplei* 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 *Tropheryma whipplei* has recently been recovered from the blood of patients with fever, headache or cough.
Synonyms	Intestinal lipodystrophy, Lipophagic granulomatosis, Mesenteric chyladenectasis, Steatorrhea arthropericarditica, Tropheryma whipplei. ICD9: 040.2 ICD10: K90.8

Yellow fever

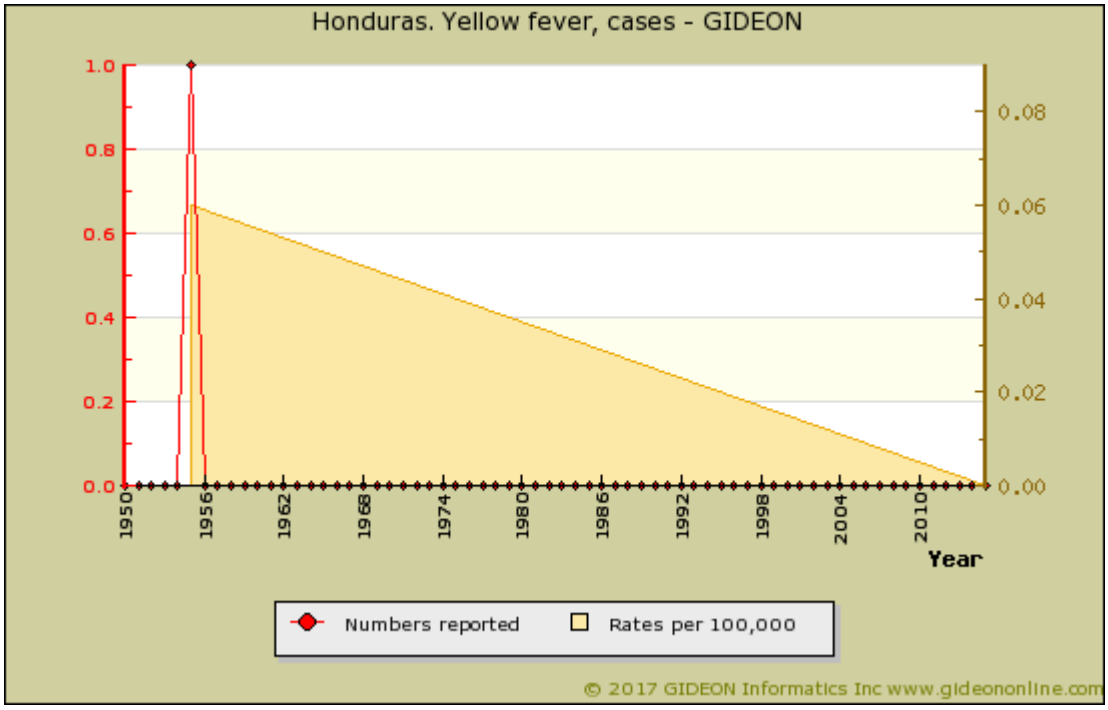
Agent	VIRUS - RNA. Flaviviridae, Flavivirus: Yellow fever virus
Reservoir	Human, Mosquito, Monkey, Marsupial
Vector	Mosquito (*Stegomyia* (*Aedes*), *Haemagogus*, *Sabethes*)
Vehicle	None
Incubation Period	3d - 6d (range 2.5d - 14d)
Diagnostic Tests	Viral culture (blood, liver). Serology. Nucleic acid 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 Honduras, imported, expatriate or other presentations of the disease have been associated with this country.

Yellow fever in Honduras

Time and Place:
Epidemics of yellow fever were reported in 1803 and 1850.

- 50 fatal cases were recorded in Puerto Cortes in 1905, and the epidemic later to spread to San Pedro, resulting in 621 cases.
- A sylvan yellow fever epizootic was reported on the north coast in 1954. [1]



Graph: Honduras. Yellow fever, cases

Proof of vaccination **IS** required for travelers >=1 year of age arriving from a country with risk of YFV transmission and for travelers who have been in transit >12 hours in an airport located in a country with risk of YFV transmission.
This requirement includes Sao Tome and Principe, and excludes Panama, South Sudan, and Trinidad and Tobago.
This country considers the certificate of YF vaccination to be valid for life if applied 10 days before traveling.

References

1. Am J Trop Med Hyg 1955 Jul ;4(4):665-74.

Yersiniosis

Agent	BACTERIUM. *Yersinia enterocolitica* and *Yersinia pseudotuberculosis* 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, Yersinia enterocolitica, Yersinia pseudotuberculosis, Yersiniose. ICD9: 008.44 ICD10: A04.6,A28.2

Zika

Agent	VIRUS - RNA. Flaviviridae, Flavivirus: Zika virus
Reservoir	Human, Mosquito, Monkey
Vector	Mosquito (*Aedes* 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 Honduras

2015 - 40 cases of Zika virus infection were reported. [1] [2]
2016 - One case of microcephaly or other CNS malformation associated with Zika virus infection was reported to September 1. [3]

Vectors:
- Intensive *Stegomyia (Aedes) aegypti* eradication campaigns were conducted during the 1950's. Reinfestation was documented in 1968.
- The presence of *Aedes albopictus* was confirmed in Honduras in 1995. [4]

Notable outbreaks

Years	Cases	Notes
2016 - 2017	31,936	Case numbers to January 12, 2017. Includes 2 cases of congenital syndrome. [5] [6] [7] [8] [9] [10] [11] [12] [13]

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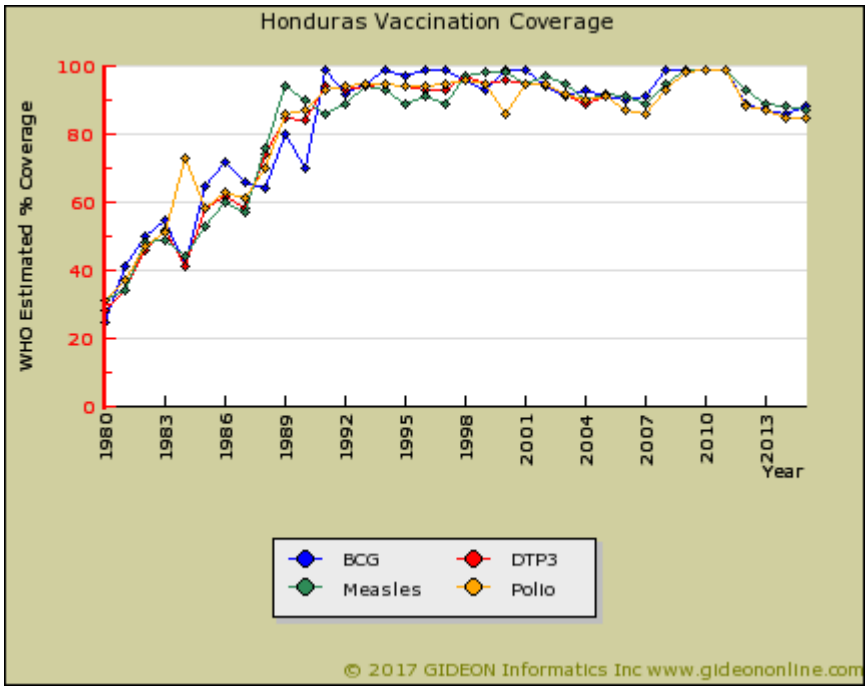
Zygomycosis

Agent	FUNGUS. Zygomycota, Zygomycetes, Mucorales: *Mucor* spp., *Rhizopus* spp., *Lichtheimia* (formerly *Absidia*) spp, *Saksenaea* 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 Honduras

BCG - birth
DT - 4,6,18 months; 4 years risk groups
DTwP - 18 months; 4 years
DTwPHibHepB - 2,4,6 months
HepB - birth 1st contact, +1, +6 months for risk groups
HPV - 11 years
IPV - 2,4,6 months (risk groups)
MMR - 12 months
OPV - 2,4,6,18 months
Pneumo conj - 2,4,6 months
Rotavirus - 2,4 months
Td - 11, 21 years and 3 doses for pregnant women not yet vaccinated



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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