

NEGLECTED TROPICAL DISEASES AND THE UNITED STATES SOUTH: POLICY AND PROFESSIONAL RESPONSES TO IMPROVE HEALTH IN THE SOUTH

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Abstract

The term 'neglected tropical diseases' (NTDs) refers to a group of parasitic, viral, and bacterial diseases that cause substantial illness for more than one billion people globally. Despite the word "tropical," many NTDs are prevalent in the US, particularly in the South, where they have significant negative effects on the physical and psychosocial well-being of the poor. We document the presence and impact of NTDs in the South and offer examples of negative impacts they have on physical and psychosocial well-being. To combat NTDs effectively in the US South requires a combination of public policy efforts and changes in professional self-regulation. Attention to NTDs is an important aspect of reducing and eliminating health disparities.

Figure 1 — Relationship between NTDs and Poverty in the US



Factors Associated with Poverty that Contribute to NTDs [1,7,8]

- Open windows — lack of access to air conditioning and screens
- Crowded living conditions
- Standing water (e.g., discarded tires; inadequate drainage)
- Incarceration
- Poor prenatal care
- Lack of plumbing/sanitation
- Exposure to animal waste
- Exposure to rodents, insects or farm animals

Effects of NTDs that Perpetuate the Cycle of Poverty [1,2,7]

- Poor health — lost work productivity or inability to work; missed school days
- Adverse cognitive effects
- Adverse pregnancy outcomes
- Developmental delays

Populations Within the Poor Disproportionally Impacted by NTDs [1,2]

- People of color
- People in the US South
- People in some urban areas
- People along the US-Mexico border
- Women
- Migrant farm workers
- Children

Figure 2 — Considerations for Determining US Public Policy for NTDs [9]

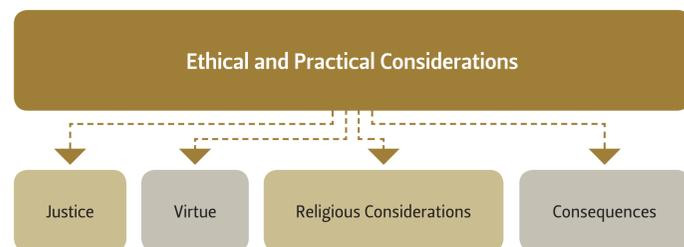


Figure 3 — Components for Effective NTD Policy [7, 10–12]

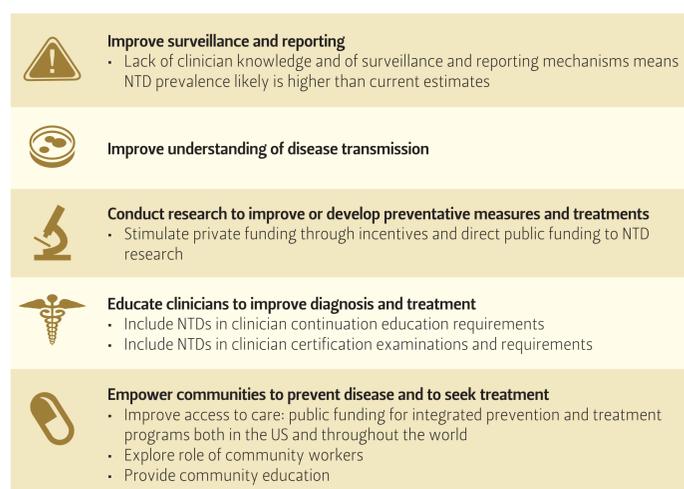


Table 1 — Major NTDs Affecting the United States [1–6]

While NTDs are commonly thought to affect developing countries, many can be located within the United States and are contracted within our borders. There is very little active surveillance of these conditions, leaving great uncertainty about their prevalence.

Bacterial Infections	Symptoms and Effects	Affected US Regions
Bovine tuberculosis	Fever; night sweats; weight loss; cough; diarrhea	US-Mexico border
Brucellosis	Fever; sweats; loss of appetite; headaches; muscle pain; fatigue; joint pain and swelling; arthritis; genital swelling; endocarditis; neurologic damage; depression; liver swelling	US-Mexico border
Congenital syphilis	Failure to thrive; fever; saddle nose; rash; nasal discharge; abnormal teeth; bone pain; vision and hearing loss; joint swelling; orthopedic problems; scarring	Primarily in US South and US-Mexico border
Leprosy (Hansen disease)	Skin problems; peripheral nerve damage; respiratory damage; vision loss	US-Mexico border
Leptospirosis	High fever; chills; headaches; rash; vomiting; jaundice; abdominal pain; diarrhea	Urban areas
Trench fever	Fever; rash; conjunctivitis; increased heart rate; bone and muscle pain; neurologic symptoms	Urban areas
Helminth Infections	Symptoms and Effects	Affected US Regions
Ascariasis	Abdominal discomfort; intestinal blockage; stunted growth; cough (when worms move out of intestine)	Primarily in Appalachia and US South
Cysticercosis	Cysts form in body wherever larvae travel, e.g., muscle, brain, eyes	Primarily along US-Mexico border
Echinococcosis	Cysts form in body wherever larvae travel, mainly in liver and lungs; can also occur in the spleen, brain, central nervous system, kidneys, eyes, bone, and muscle tissue	Rural areas; tribal lands; Arctic Alaska
Schistosomiasis	Rash; fever; chills; cough; muscle aches; inflammation and scarring in liver, intestines, bladder (depending on worm location); anemia; malnutrition; cognitive deficits (repeated infection of children); neurological damage (rare)	Primarily among African refugees
Strongyloidiasis	Often symptomless; rare effects: abdominal pain; diarrhea; pulmonary problems; rash; neurological complications	Primarily in Appalachia and among African refugee populations
Toxocariasis	Symptoms depend on where worms move; can include vision loss, retinal damage, fever, fatigue, respiratory problems, cough, abdominal pain	US South; urban areas; Appalachia
Trichinellosis	Abdominal discomfort; nausea; vomiting; diarrhea; fever; fatigue; chills; body aches; cardiac and respiratory problems (rare); death (rare)	Primarily in Arctic Alaska
Protozoan Infections	Symptoms and Effects	Affected US Regions
Amebiasis	Diarrhea, stomach pain and cramping; rare effects: bloody stools; fever; liver, lung or brain damage	Primarily along US-Mexico border
Chagas Disease (American trypanosomiasis)	Acute phase: fever; vomiting; diarrhea; headaches; body aches; fatigue Chronic phase: heart failure; cardiac arrest; severe gastro-intestinal abnormalities	Primarily US South and US-Mexico border
Congenital toxoplasmosis	Prematurity; neurological damage; vision and hearing loss; skin problems	US South; urban areas; US-Mexico border; Arctic Alaska
Cryptosporidiosis	Diarrhea	Throughout US
Cyclosporiasis	Diarrhea	Throughout US
Giardiasis	Diarrhea	Throughout US
Leishmaniasis	Skin sores; fever; enlarged spleen or liver; anemia; thrombocytopenia; leukopenia; weight loss	Primarily along US-Mexico border
Trichomoniasis	Often symptomless; rare effects: painful urination; vaginal discharge; genital itching, redness, soreness	Primarily US South and urban areas
Viral Infections	Symptoms and Effects	Affected US Regions
Chikungunya	Fever; joint and muscle pain; headaches; rash	Travel-related cases found in US; could spread locally once present
Congenital CMV	Retinal problems; jaundice; enlarged liver and spleen; rash; microcephaly; low birth weight; seizures	US South; urban areas
Dengue	High fever; severe headache; pain behind eyes; joint, muscle and bone pain; rash; bloody nose or gums Dengue hemorrhagic fever: above, plus vomiting; severe abdominal pain; difficulty breathing; internal bleeding, blood loss; shock; death	US South, US-Mexico border, Hawaii
Rabies	Weakness; discomfort; fever; headache; cerebral dysfunction; anxiety; cognitive effects (confusion, delirium, hallucinations); insomnia	Throughout US
Zika	Fever; rash; joint pain; conjunctivitis; possible birth defects	Travel-related cases found in US; could spread locally once present

Endnotes

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