

TANZANIA & ZANZIBAR

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DESTINATION OVERVIEW

Tanzania, land of the Serengeti and Zanzibar, can offer in a single destination what cannot be found anywhere in the world, either through tailored packages or independent visits. Boasting >32 national parks and reserves, each region of Tanzania offers a unique experience; the country is a top destination for travelers interested in aquatic recreation, mountaineering, or seeing wildlife.

In 2008, the *New York Times* named the snow and ice-capped Mount Kilimanjaro as a world “Place to Go” and a must-see destination. Climbing the tallest free-standing mountain in the world is like a virtual climatic world tour, hiking from the tropics through to the arctic. In addition to Mount Kilimanjaro, travelers can visit Serengeti National Park, one of the Seven Natural Wonders of Africa; Ngorongoro Conservation Area, a World Heritage Site; Mahale and Gombe National Parks on the shores of Lake Tanganyika, famous for their chimpanzees; and swim with the whale sharks in the Indian Ocean off Mafia Island (see Map 10-05).

Dar es Salaam is Tanzania’s most populous city and its former capital; it is also the country’s commercial center and home to its largest international airport. To get from Dar es Salaam (located on the Indian Ocean coast) to the islands of Zanzibar, one can take a 2-hour ferry ride or a 25-minute flight. Dodoma, designated Tanzania’s national capital in 1996, is ≈450 km (280 mi) inland, west of Dar es Salaam.

Travelers can visit Tanzania throughout the year. April is often the wettest month, and many popular resorts, guest houses, and tented camps close during this time. Tanzania can be safe and easy to navigate, but all travelers should plan in advance. Unprepared travelers can struggle with travelers’ diarrhea, vectorborne diseases, or altitude illness when attempting to summit Tanzania’s beautiful peaks. People traveling anywhere in Tanzania should be advised about the risk for vaccine-preventable diseases, foodborne

and waterborne illnesses, malaria and other vectorborne diseases, and traffic injuries. With appropriate preparation, however, Tanzania is a rewarding and unforgettable destination.

INFECTIOUS DISEASE RISKS

Travelers to Tanzania should be up to date on essential immunizations and carefully advised on recommendations for travel vaccines, including coronavirus disease 2019 (COVID-19), hepatitis A, polio, and tetanus. Proof of vaccination against yellow fever is required for travelers entering from yellow fever-endemic countries; carefully review each traveler’s full travel itinerary to determine whether they will need yellow fever vaccine.

Enteric Infections & Diseases

CHOLERA

Caused by the bacterium *Vibrio cholerae*, cholera is characterized by abdominal cramps, profuse watery diarrhea, and vomiting (see Sec. 5, Part 1, Ch. 5, Cholera). In Tanzania, cholera outbreaks occur mostly during the rainy season and are due to poor sanitation and an inadequate supply of clean and safe drinking water. The last outbreak (2015–2019), totaling 33,702 cases and 556 deaths, affected all regions of the country.

Cholera can cause severe dehydration within a few hours; travelers should practice safe food and water precautions (see Sec. 2, Ch. 8, Food & Water Precautions) and careful hand hygiene. Travelers also should know the location of the nearest facility to seek medical care (see the US embassy in Tanzania website, <https://tz.usembassy.gov/>). The Advisory Committee on Immunization Practices recommends that adults traveling to areas with active cholera transmission be vaccinated with cholera vaccine. Because most travelers from the United States do not visit areas with active cholera transmission, they can avoid infection by adhering carefully to preventive measures (food and water precautions, scrupulous hand hygiene) without vaccination.

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MAP 10-05 Tanzania & Zanzibar

GIARDIASIS

Giardiasis is endemic to Tanzania with high infection rates among young children. *Giardia* infection is acquired primarily by swallowing contaminated water, particularly untreated water from lakes, streams, and swimming pools; people also can get infected from eating contaminated food (see Sec. 5, Part 3, Ch. 12, Giardiasis). As with cholera, the best way to prevent giardiasis is to consume only safe food and water, and to practice good hygiene, including frequent handwashing.

TRAVELERS' DIARRHEA

Travelers' diarrhea (TD) is the most common health complaint among travelers to Tanzania. Because TD commonly is due to consuming contaminated food or water, educate travelers on prevention measures and personal hygiene. Travelers should avoid consuming tap water in Tanzania. Travelers affected by TD should

hydrate to replace lost body fluids and minerals. Most TD cases are mild and self-limiting, but travelers should still carry with them antimotility medications (e.g., Imodium or loperamide) to provide relief. Travelers also can carry antimicrobial drugs to treat moderate to severe TD (see Sec. 2, Ch. 6, Travelers' Diarrhea, and Sec. 2, Ch. 8, Food & Water Precautions).

TYPHOID FEVER

Typhoid fever (see Sec. 5, Part 1, Ch. 24, Typhoid & Paratyphoid Fever) is prevalent in Tanzania; the annual incidence rate between 2003 and 2007 was 580–1,400 cases/100,000 persons. Infected people can show symptoms 1–3 weeks after exposure. Travelers, especially long-term travelers, should get vaccinated; because the vaccine is not 100% effective, however, and because vaccine-induced immunity can be overwhelmed by a large bacterial inoculum, travelers should ensure they

practice safe food precautions (e.g., eating foods that are well cooked and served hot, making sure fruits and vegetables are washed with clean water and cooked or peeled before consuming). Advise travelers to observe personal hygiene with regular and thorough handwashing or use of hand sanitizer with ≥60% alcohol when soap and safe water are unavailable.

Respiratory Infections & Diseases

Respiratory illnesses account for a high proportion of morbidity and mortality in Tanzania; >75% of hospital deaths are due to pneumonia and tuberculosis. Encourage travelers to Tanzania to take preventive measures against respiratory infections, including being vaccinated against COVID-19 and influenza, washing hands, avoiding sick people, and practicing respiratory etiquette.

CORONAVIRUS DISEASE 2019

For current information on COVID-19 in Tanzania, consult the US Embassy in Tanzania website (<https://tz.usembassy.gov/>). For the US government's COVID-19 international travel requirements and recommendations, see www.cdc.gov/coronavirus/2019-ncov/travelers/international-travel/index.html. All travelers going to Tanzania should be up to date with their COVID-19 vaccines (www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html).

Sexually Transmitted Infections & HIV

Over the past 10 years, Tanzania has implemented many measures to control its HIV epidemic. As of 2018, ≈1.6 million people were still living with HIV across Tanzania. In addition to HIV, prevalence of sexually transmitted infections is common, including chlamydia, gonorrhea, syphilis, and trichomoniasis. Educate travelers on the necessary precautions to prevent STIs, including HIV (see Sec. 5, Part 2, Ch. 11, Human Immunodeficiency Virus / HIV, and Sec. 9, Ch. 12, Sex & Travel).

Soil- & Waterborne Infections

SCHISTOSOMIASIS

Travelers who bathe, swim, or wade in unchlorinated freshwater sources in Tanzania, including

Lake Tanganyika and Lake Victoria, are at risk for schistosomiasis (bilharzia).

Vectorborne Diseases

DENGUE

In recent years, the incidence of dengue in Tanzania has increased, particularly along the coastal regions, including in Dar es Salaam and the islands of Zanzibar. As with other mosquito-borne diseases, travelers taking steps to prevent bites (including proper use of mosquito nets and insect repellent) is key to preventing infections (see Sec. 4, Ch. 6, Mosquitoes, Ticks & Other Arthropods).

MALARIA

Chloroquine-resistant *Plasmodium falciparum* is endemic throughout Tanzania (see Sec. 2, Ch. 5, Yellow Fever Vaccine and Malaria Prevention Information, by Country). The islands of Zanzibar have been targeted for malaria elimination; although authorities have met with some success, malaria transmission still occurs on islands throughout the archipelago. In addition, climate change has expanded the range of suitable habitats for *Anopheles* spp. mosquitoes; thus, consider malaria prophylaxis for all travelers going to Tanzania, and educate all travelers, regardless of their itinerary, on mosquito avoidance techniques.

The tropical malaria-endemic location of Mount Kilimanjaro means that many trekkers will be taking malaria prophylaxis during their climb and will likely need to continue taking malaria prophylaxis after descent, particularly if they are visiting game parks or staying overnight at elevations below 1,800 m (≈5,900 ft).

TRYPANOSOMIASIS

Although cases of African trypanosomiasis are rare, they have been reported among travelers to Tanzanian national parks. Educate travelers on ways to reduce tsetse fly exposure (see Sec. 5, Part 3, Ch. 24, African Trypanosomiasis).

YELLOW FEVER

Yellow fever has never been reported from Tanzania. Due to the presence of the mosquito vector and the risk in neighboring countries, however, Tanzania has been designated low risk for



yellow fever by the World Health Organization. Travelers ≥ 1 year of age arriving from a country with risk of yellow fever virus transmission, including transit >12 hours in an airport located in a country with risk of yellow fever virus transmission, are required to show proof of vaccination on an International Certificate of Vaccination or Prophylaxis (<https://wwwnc.cdc.gov/travel/page/icvp>) to enter the country (see Sec. 2, Ch. 5, Yellow Fever Vaccine and Malaria Prevention Information, by Country).

ENVIRONMENTAL HAZARDS & RISKS

Altitude Illness & Acute Mountain Sickness

Many travelers visit Tanzania for the opportunity to summit Mount Meru (4,566 m; 14,980 ft) or Mount Kilimanjaro (5,895 m; 19,340 ft), both located in northern Tanzania. Mountain climbing is physically demanding, requiring a good fitness level and preparation for the elements. Weather in these locations is characterized by extremes; travelers should be prepared for tropical heat, heavy rains, and bitter cold, and they should store gear in waterproof bags.

Altitude illness is a major reason why only about half of those who attempt to summit Kilimanjaro reach the crater rim, Gilman's Point at 5,685 m (18,651 ft), and $\leq 10\%$ reach the top, Uhuru (Freedom) Peak at 5,895 m (19,340 ft). Travelers with signs and symptoms of altitude illness must stop their ascent. If symptoms worsen, descent is mandatory. Climbers should

have a flexible itinerary and consider employing an extra guide who can accompany any members of the group down the mountain if they become ill.

Prevalence rates of acute mountain sickness (AMS) were 75%–77% in recent studies of 4- and 5-day ascents of Kilimanjaro. People using the carbonic anhydrase inhibitor acetazolamide were much less likely to develop AMS on 5-day ascents, but $\geq 40\%$ of people taking this medication still reported AMS symptoms. For any traveler planning to ascend to elevations $>8,000$ ft, be sure to discuss the signs and symptoms of altitude illness and provide guidance on its prevention and treatment (for details, see Sec. 4, Ch. 5, High Elevation Travel & Altitude Illness). Climbers can prevent altitude illness and enhance their enjoyment of the experience by allowing more time to acclimatize (see Box 10-01).

MEDICAL MANAGEMENT

People with some preexisting health conditions can be more susceptible to problems associated with travel to high elevations, or their medications can interact with those taken to prevent AMS. For travelers in higher risk categories, a pretravel consultation with a travel health provider who has specialized knowledge of altitude illness is critical.

Anyone with a history of AMS susceptibility, and for those in whom adequate acclimatization is not possible, use of medications to prevent altitude illness (e.g., acetazolamide) is recommended. Acetazolamide accelerates acclimatization and is effective in preventing AMS when started the day before ascent, and can also be used in treating

BOX 10-01 Acclimatization tips for high elevation hiking in Tanzania

Before attempting to climb Mt. Kilimanjaro (5,895 m, $\approx 19,340$ ft), travelers can acclimatize by first hiking ≥ 1 of the following

- Ngorongoro crater (2,286 m; 7,500 ft); try to spend the last few nights here prior to climbing Mt. Kilimanjaro
- Mt. Meru (4,566 m; 14,980 ft); 70 km (≈ 43 miles) away from Mt. Kilimanjaro, Mt. Meru is considered a good “warm up” hike

- Point Lenana (4,895 m; 16,059 ft) on Mt. Kenya; combined Mt. Kenya and Mt. Kilimanjaro climbing trips are available

Add ≥ 1 –2 days to the planned ascent of Mt. Kilimanjaro

- Taking additional time facilitates acclimatization, regardless of the route taken to the top
- Extra time for acclimatization is beneficial for travelers taking routes normally promoted as 4- to 6-day trips

AMS. Children can take it safely. Dexamethasone is an alternative for AMS prevention in people intolerant of or allergic to acetazolamide. Climbers also can use dexamethasone to prevent high-altitude pulmonary edema (HAPE) and to prevent and treat high-altitude cerebral edema (HACE).

TRAVEL HEALTH KITS & TRAVEL HEALTH INSURANCE

Advise travelers planning to climb the mountains in Tanzania to carry a personal first aid kit that includes, among other necessary items, altitude illness medication, analgesics, antibacterial and antifungal cream, antibiotics for travelers' diarrhea, antiemetics, antihistamines, antimalarials, bandages and tape, a blister kit, oral rehydration salts, and throat lozenges (see Sec. 2, Ch. 10, Travel Health Kits). Include information on potential drug–drug interactions between medications used for altitude illness and routine or travel-related medications. In addition, discuss the need for adequate health insurance, including medical evacuation insurance, with travelers planning climbs (see Sec. 6, Ch. 1, Travel Insurance, Travel Health Insurance & Medical Evacuation Insurance). Encourage travelers to confirm that their purchased policies cover the cost of evacuation or rescue from the top of a mountain and any associated care.

Animal Bites & Rabies

Canine rabies is prevalent throughout Tanzania, and travelers should avoid animal bites (see Sec. 5, Part 2, Ch. 18, Rabies). Advise travelers to avoid petting or handling wild animals and unfamiliar dogs, including puppies. Instruct travelers to seek care if bitten or scratched. Because both rabies vaccine and rabies immunoglobulin can be difficult to access, opportunities for postexposure prophylaxis might be limited. Depending on the itinerary and planned activities, discuss with travelers the merits of preexposure vaccination and purchasing medical evacuation insurance coverage (see Sec. 6, Ch. 1, Travel Insurance, Travel Health Insurance & Medical Evacuation Insurance).

Sun Exposure & Ocean Sports

Snorkeling, scuba diving, and other ocean sports are popular among travelers to Tanzania. Include information on sun exposure (see Sec. 4, Ch. 1,

Sun Exposure) and water safety (see Sec. 4, Ch. 4, Scuba Diving; Decompression Illness & Other Dive-Related Injuries) as part of the pretravel consultation. For less experienced scuba divers, be certain to discuss the risks of barotrauma and decompression illness. Inform travelers that broad-spectrum sunscreen (protects against both ultraviolet A and ultraviolet B) might not be readily available in country; advise that they carry an adequate supply from home.

SAFETY & SECURITY

Crime

Crime in Tanzania is more common in urban settings, and tourists often can be targets for petty theft and scams. Common sense can prevent most crimes, but travelers should check with the US Department of State Bureau of Consular Affairs (<http://travel.state.gov/travelsafely>) and Overseas Security Advisory Council (www.osac.gov) ahead of time to learn more about safety and security risks at their destination.

Traffic-Related Injuries

Road traffic accidents occur often in Tanzania. Major contributors to risk include poor road quality, improperly maintained vehicles, and reckless driving habits. Counsel travelers to wear seat belts, use reputable transportation operators, and to avoid traveling at night. Pedestrians should have heightened awareness when crossing streets; traffic laws might be different from expected or disregarded by drivers.

AVAILABILITY & QUALITY OF MEDICAL CARE

Although health care can be accessed throughout the country, clinics and hospitals similar to those in high-income countries are found primarily in larger cities, and specialized care is limited (see Sec. 6, Ch. 2, Obtaining Health Care Abroad). Many medications are available over the counter, but quality might be unreliable (see Sec. 6, Ch. 3, . . . *perspectives*: Avoiding Poorly Regulated Medicines & Medical Products During Travel). Encourage travelers to carry with them any medications they anticipate needing, including malaria prophylaxis and prescription medications.



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PART 2: THE AMERICAS & THE CARIBBEAN

BRAZIL

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DESTINATION OVERVIEW

At nearly 3.3 million square miles in size, Brazil is the fifth largest country in the world and the largest country in South America, occupying nearly half the land area of the continent. With >210 million people, Brazil is home to the world's largest Portuguese-speaking population. The world's eighth largest economy, Brazil is classified as an upper-middle-income country. Nearly 85% of Brazilians live in urban areas.

Brazil is the most popular tourist destination in South America, and the second most popular in all Latin America. In 2018, >6 million international visitors traveled to Brazil; the country hosted the Fédération Internationale de Football Association (FIFA) World Cup in 2014 and the Summer Olympic and Paralympic Games in 2016. Rio de Janeiro, Brazil's second-largest city (population >7 million) and most frequently visited tourist destination, is famous for its beaches, landmarks, and annual Carnival festivities. São Paulo, one of the world's largest cities with >21 million people in the greater metropolitan area, is the economic center of Brazil and the most visited destination for business travel. Brazilian people prize many of their major cities, including Florianópolis, Fortaleza, Manaus, Recife, and Salvador, for their coastlines and regional culture.

The country also boasts multiple UNESCO World Heritage sites, including Iguaçu National Park in Paraná, home to the largest waterfalls in the Americas; the historic towns of Olinda (Pernambuco), Ouro Preto (Minas Gerais),

Salvador (Bahia), and São Luis (Maranhão); the modern capital of Brasília; and natural areas of the Amazon Forest and the Pantanal Conservation Area, which extends from one state (Mato Grosso do Sul) into another (Mato Grosso) and into portions of two countries (Bolivia and Paraguay). The Atlantic forests and the archipelago of Fernando de Noronha in the Atlantic Ocean are World Heritage sites (see Map 10-06).

The Amazon Forest, large portions of which extend into the countries that neighbor Brazil, attracts travelers in search of exotic adventures. The region presents unique risks, and careful planning and attention to travelers' health needs before, during, and after the trip is critical. Because mosquito-borne diseases (chikungunya, dengue, malaria, yellow fever, and Zika) are endemic throughout the Amazon, advise travelers to complete all relevant vaccinations and provide them with detailed instruction on the proper use of chemoprophylaxis and mosquito avoidance. The hot and humid climate throughout the forest increases the risks for dehydration and heat stroke; travelers should practice extreme caution and, whenever possible, resist the temptation to consume potentially unsafe food and beverages.

INFECTIOUS DISEASE RISKS

Travelers to Brazil should be up to date on routine vaccines, including coronavirus disease 2019 (COVID-19), influenza, measles-mumps-rubella (MMR), and diphtheria-tetanus-pertussis.

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MAP 10-06 Brazil

Hepatitis A vaccination also is recommended. Consider hepatitis B vaccination for most travelers, but especially for anyone who could be exposed to blood or other body fluids (e.g., through medical services, sexual contact, tattooing).

Enteric Infections & Diseases

TRAVELERS' DIARRHEA

Travelers should take food and water precautions throughout Brazil, including in the big cities (see Sec. 2, Ch. 8, Food & Water Precautions). Travelers' diarrhea (TD) is the most common travel-related ailment, and visitors consuming raw fruits and vegetables, unpasteurized dairy products, and food from street vendors increase their risk for food-borne infections. Oral rehydration salts are available from public health clinics and in almost all pharmacies in Brazil. For further information about travelers' diarrhea, see Sec. 2, Ch. 6, Travelers' Diarrhea.

TYPHOID FEVER

Consider vaccinating "adventurous eaters" against typhoid, along with travelers who stay with friends or relatives or who visit smaller cities, villages, or rural areas (see Sec. 5, Part 1, Ch. 24, Typhoid & Paratyphoid Fever).

Respiratory Infections & Diseases

CORONAVIRUS DISEASE 2019

For current information on COVID-19 in Brazil, consult the US Embassy & Consulates in Brazil website (<https://br.usembassy.gov>). For the US government's COVID-19 international travel requirements and recommendations, see www.cdc.gov/coronavirus/2019-ncov/travelers/international-travel/index.html. All travelers going to Brazil should be up to date with their COVID-19 vaccines (www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html).

ENDEMIC FUNGI

A variety of fungi (e.g., *Paracoccidioides* in the south and southeast) are endemic to Brazil. Inhaling the spores of fungi typically present in the soil (e.g., *Coccidioides*, *Cryptococcus neoformans*, *Histoplasma*, *Paracoccidioides*) can cause respiratory illness and occasionally more severe disease (e.g., meningitis, bone infections). For more details, see Sec. 5, Part 4, Ch. 1,

Coccidioidomycosis / Valley Fever, and Sec. 5, Part 4, Ch. 2, Histoplasmosis. Travelers should beware of bat guano in caves and use caution before disturbing soil, particularly if contaminated by bat or bird feces.

INFLUENZA

Peak influenza circulation occurs during April–September in most of Brazil but can occur throughout the year in tropical areas. The influenza vaccine recommended for use in the Northern Hemisphere each year confers protection against the virus strains circulating in the Southern Hemisphere that same year. The Centers for Disease Control and Prevention (CDC) recommends seasonal influenza vaccination ≥2 weeks before travel, and pneumococcal vaccination for people ≥65 years of age, and for younger adults and children with chronic medical conditions.

TUBERCULOSIS

Tuberculosis (TB) is prevalent in Brazil, but short-term travelers are not considered to be at high risk for infection unless visiting specific crowded environments. Before they leave the United States, consider TB testing for travelers who anticipate prolonged exposure to people known to have, or at high risk for having, TB (e.g., people in clinics, hospitals, prisons, homeless shelters). For more detailed information, see Sec. 5, Part 1, Ch. 22, Tuberculosis, and Sec. 5, Part 1, Ch. 23, ...*perspectives*: Testing Travelers for *Mycobacterium tuberculosis* Infection.

Sexually Transmitted Infections & HIV

The HIV infection rate in Brazil is 0.5% among adults aged 15–49 years, comparable to other countries in South America. Discuss options for preexposure prophylaxis with travelers at greater risk for acquiring HIV infection (see www.cdc.gov/hiv/prep, and Sec. 5, Part 2, Ch. 11, Human Immunodeficiency Virus / HIV). In Brazil, people who use drugs, men who have sex with men, and female sex workers are more likely than the general population to be infected with HIV.

In Brazil, condoms are available free of charge in public health clinics, tourist service centers, and other distribution points in many cities. Male

condoms are also available throughout Brazil in pharmacies, convenience stores, and supermarkets; female condoms are available in some locations.

Soil- & Waterborne Infections

LEPTOSPIROSIS

In urban areas of Brazil, outbreaks of leptospirosis have occurred after heavy flooding (see Sec. 5, Part 1, Ch. 10, Leptospirosis). Travelers who have contact with standing water or mud after heavy rainfall are at increased risk. Advise travelers to avoid entering bodies of freshwater potentially contaminated with animals' body fluids.

SCHISTOSOMIASIS

Schistosoma spp. are parasites found in freshwater lakes and rivers in many states of Brazil, especially in the northeast. Advise travelers to avoid bathing, swimming, or wading in fresh, unchlorinated water, where they could contract schistosomiasis (see Sec. 5, Part 3, Ch. 20, Schistosomiasis). Bathing or swimming in saltwater is not a source of infection.

Vectorborne Diseases

Vectorborne diseases (bacterial, viral, parasitic) are present in many areas of Brazil; these infections are among the leading causes of febrile illness in travelers returning from South America.

CHIKUNGUNYA & DENGUE

Risk for chikungunya and dengue infection is increased in many large Brazilian cities due to large populations of *Aedes* mosquitoes, which transmit these viruses (see Sec. 5, Part 2, Ch. 2, Chikungunya, and Sec. 5, Part 2, Ch. 4, Dengue). During 2000–2015, cases of dengue surged throughout Brazil, with epidemics reported in large cities, including Rio de Janeiro and Salvador. Preliminary data show that in 2019, Brazil recorded ≈132,000 cases of chikungunya and ≈1.5 million probable cases of dengue. Travelers to Brazil should take measures to protect themselves from mosquito bites (see Sec. 4, Ch. 6, Mosquitoes, Ticks & Other Arthropods).

LEISHMANIASIS

Cutaneous and visceral leishmaniasis occur in Brazil and are most common in the Amazon

and northeast regions (see Sec. 5, Part 3, Ch. 14, Cutaneous Leishmaniasis, and Sec. 5, Part 3, Ch. 15, Visceral Leishmaniasis). The risk for transmission is greatest from dusk to dawn because the sand fly vector typically feeds (bites) at night and during twilight hours. Ecotourists and adventure travelers might be at increased risk, but even short-term travelers in endemic areas have developed leishmaniasis. Travelers should take measures to avoid insect bites (see Sec. 4, Ch. 6, Mosquitoes, Ticks & Other Arthropods).

LYMPHATIC FILARIASIS

Brazil is actively participating in the global program to eliminate lymphatic filariasis (LF); LF is considered endemic to only 4 cities in Brazil, all located in the Recife Metropolitan Region (northeastern coast) of the country. As of 2020, all regions had achieved the targets set by the World Health Organization (WHO) to stop annual treatment, suggesting low likelihood of ongoing disease transmission and minimal risk to travelers. Brazil is still working to achieve all targets demonstrating elimination of LF as a public health problem (see Sec. 5, Part 3, Ch. 9, Lymphatic Filariasis, and the WHO website, www.who.int/en/news-room/fact-sheets/detail/lymphatic-filariasis#).

MALARIA

Almost all malaria in Brazil occurs in the Amazon Basin, although less competent malaria vector species are present in other parts of the country. *Plasmodium vivax* is the main malaria species; only ≈10%–20% of malaria cases are caused by *P. falciparum*. CDC recommends chemoprophylaxis for travelers going to malaria-endemic areas of Brazil (see Sec. 2, Ch. 5, Yellow Fever Vaccine & Malaria Prevention Information, by Country; Map 2-04; and the CDC Malaria webpage, www.cdc.gov/parasites/malaria/index.html). No malaria transmission occurs in the cities of Brasília (the capital), Rio de Janeiro, or São Paulo, or at Iguaçu Falls.

RICKETTSIAL DISEASES

Tickborne rickettsial diseases in Brazil include *febre maculosa* and Brazilian spotted fever, which are caused by etiologic agents from the same genus (*Rickettsia*) that causes Rocky Mountain spotted fever in the United States (see Sec. 5, Part 1, Ch. 18, Rickettsial Diseases). Travelers should

take precautions (e.g., wearing appropriate clothing, applying insect repellants on clothes and skin) to avoid tick bites both indoors and outdoors (see Sec. 4, Ch. 6, Mosquitoes, Ticks & Other Arthropods).

TRYPANOSOMIASIS

Except in the north of the country where cases continue to rise, most states in Brazil have eliminated Chagas disease (American trypanosomiasis) through improved housing conditions and insecticide spraying for the vector. Although the risk is extremely low, travelers and ecotourists staying in poor-quality housing, especially in the Amazon region, might be at greater risk for this disease.

Outbreaks have been associated with consuming food or beverages containing açai, an Amazonian fruit eaten throughout Brazil, and sugar cane juice (*caldo de cana*). Oral transmission occurs when people consume food or beverages contaminated with triatomines—the bloodsucking insects that transmit the etiologic agent of Chagas disease (*Trypanosoma cruzi*)—or their feces (see Sec. 5, Part 3, Ch. 25, American Trypanosomiasis / Chagas Disease).

YELLOW FEVER

Mosquitoes that transmit yellow fever virus can be found throughout the Amazon Basin and in forested regions along all major river basins in Brazil, including Iguaçu Falls and as far south as Rio Grande do Sul. During 2016–2017, outbreaks of sylvatic yellow fever extended to the southeastern coast of Brazil, including the cities of Rio de Janeiro and São Paulo, areas with historically low risk for transmission. Several unvaccinated travelers visiting these areas became ill with the disease, and some died.

Evidence of an expanded range of yellow fever transmission in Brazil led WHO and CDC to broaden their vaccination coverage recommendations for the country in 2017. Although Brazil does not require proof of vaccination against yellow fever for entry into the country, CDC recommends yellow fever vaccination for all travelers aged ≥9 months going to areas with risk for transmission. Updated information on areas of risk can be found on the CDC Travelers' Health website (<https://wwwnc.cdc.gov/travel/destinations/>

traveler/none/brazil); see Sec. 2, Ch. 5, Yellow Fever Vaccine & Malaria Prevention Information, by Country.

People planning travel to other countries in South America (e.g., Colombia) could be required to show proof of yellow fever vaccination at airline counters before exiting Brazil.

ZIKA

Zika virus is an arbovirus (genus *Flavivirus*) transmitted mainly by mosquitoes, typically, although not exclusively, *Aedes aegypti*. Zika virus also can be sexually transmitted and transmitted during pregnancy to a fetus. First reported in Brazil in 2015, Zika was likely introduced to the country 2 years prior. A large Zika outbreak occurred in 2016, and >215,000 probable cases were reported. By 2019, the number of cases had dropped to 10,000.

Most Zika infections are asymptomatic and, when present, symptoms are mild. Commonly reported signs and symptoms include arthralgia, conjunctivitis, fever, and maculopapular rash; Guillain-Barré syndrome and encephalopathy have also been reported (see Sec. 5, Part 2, Ch. 27, Zika).

Vertical transmission leads to congenital Zika virus infection; sequelae can include microcephaly with central nervous system anomalies, other serious neurologic consequences, and fetal loss. Because of the risk for birth defects in infants born to people infected with Zika during pregnancy, CDC encourages a pretravel discussion of risks with anyone who is pregnant or trying to become pregnant. Zika travel information is available at the CDC Travelers' Health website (<https://wwwnc.cdc.gov/travel/page/zika-information>).

ENVIRONMENTAL HAZARDS & RISKS

Animal Bites

RABIES

Overall, the risk for rabies infection in Brazil is very low. Preexposure rabies vaccination is recommended for travelers with extended itineraries, particularly children, and people planning trips to rural areas (see Sec. 5, Part 2, Ch. 18, Rabies). For shorter stays, preexposure rabies vaccination is recommended for adventure travelers, those who might be occupationally exposed to animals, and people staying in locations >24

hours away from access to rabies immune globulin (e.g., the Amazon Forest).

SNAKES

Poisonous snakes are a hazard in many places in Brazil, although deaths from snake bites are rare (see Sec. 4, Ch. 7, Zoonotic Exposures: Bites, Stings, Scratches & Other Hazards). Counsel travelers to seek immediate medical attention any time a bite wound breaks the skin, or if a snake sprays venom into their eyes. In some areas of the country, specific antivenoms are available, and being able to identify the snake species (or taking a picture) might prove critical to delivery of optimal medical care. The national toll-free number for intoxication and poisoning assistance is 0800-722-6001 (in Portuguese only).

Climate & Sun Exposure

Ensure travelers to Brazil are familiar with climatic conditions at their destinations before they go. Except in the south, where temperatures peak at 85°F (30°C), temperatures >104°F (40°C) are common in cities along the coast and in the Amazon region during October–March (see Sec. 4, Ch. 2, Extremes of Temperature).

SAFETY & SECURITY

Crime

Travel in Brazil is generally safe, although crime remains a problem in urban areas and has spread to rural areas. The incidence of crime against tourists is greater in areas surrounding beaches, hotels, nightclubs, and other tourist destinations (see Sec. 4, Ch. 11, Safety & Security Overseas). Drug-related violence has resulted in clashes with police in tourist areas. Several Brazilian cities have established specialized police units that patrol areas frequented by tourists and provide assistance to crime victims.

Political Unrest

Political demonstrations might disrupt public and private transportation. Encourage travelers to register with the US Department of State's Smart Traveler Enrollment Program (STEP; <https://step.state.gov/step>) to receive advisories and alerts for areas they plan to visit.

Prostitution

Although commercial sex work is legal in Brazil, operating a brothel and financial exploitation of sex workers are both against the law.

Traffic-Related Injuries

As in many foreign countries, motor vehicle accidents in Brazil are a leading cause of injury and death among US travelers (see Sec. 8, Ch. 5, Road & Traffic Safety). Road conditions in Brazil differ significantly from those in the United States, and driving at night can be dangerous. The national toll-free number for emergency roadside assistance (193) is in Portuguese only. Driving after drinking alcohol, even small quantities, is illegal, and travelers can expect police checkpoints during evenings and nights in many urban areas. Seatbelt use is mandatory, and motorcyclists are required by law to wear helmets.

Children aged ≤10 years must be seated in the back seat. Brazilian federal law requires infants ≤1 year of age to use rear-facing car seats, children 1–4 years of age to use forward-facing car seats, and children 4–7.5 years of age to use booster seats. Anyone traveling with small children should bring their own car or booster seats, in the event these are limited or unavailable.

AVAILABILITY & QUALITY OF MEDICAL CARE

Quality health care is available in most sizable Brazilian cities. Brazilian public health services are free, even for visitors. Foreign visitors can seek treatment in the emergency care network of Brazil's public health system, known as the Unified Health System, or by its Portuguese acronym, SUS, or through private facilities. A non-comprehensive list of private medical services can be found on the US Embassy in Brazil website (<https://br.usembassy.gov>). The toll-free emergency number for ambulance services throughout Brazil is 192. The Brazilian Ministry of Health provides information in Portuguese for international visitors (see www.gov.br/anvisa/pt-br/assuntos/paf/saude-do-viajante), including a list of reference hospitals for mass gathering events in Brazil.

Medical Tourism

Brazil has a growing number of private clinics that cater to international clientele and offer medical procedures using advanced technologies. Travel to Brazil for cosmetic surgery, assisted reproductive technology, or other elective medical procedures has increased in recent years, becoming a major part of the medical

industry. Although the quality of care overall can vary widely, Brazil has many cosmetic surgery facilities on par with those found in the United States. Travelers seeking cosmetic surgery or other elective procedures should do their research and make sure that emergency medical services are available at their clinic of choice (see Sec. 6, Ch. 4, Medical Tourism).

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DOMINICAN REPUBLIC

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DESTINATION OVERVIEW

The Dominican Republic—the second-largest Caribbean nation, both by area and by population—covers the eastern two-thirds of the Caribbean Island of Hispaniola; Haiti comprises the western third. The capital city, Santo Domingo, is located on the southern coast of the island (see Map 10-07).

Although English is spoken in most tourist areas, Spanish is the official language. Approximately 250,000 US citizens call the Dominican Republic home. Average temperatures range from 73.5°F (23°C) in January to 80°F (26.5°C) in August. The island receives more rain during May–November, and tropical storms or hurricanes are possible.



DOMINICAN REPUBLIC



MAP 10-07 Dominican Republic

10

In 2018, >6.5 million foreign tourists, including ≈3 million from Canada and the United States, visited the Dominican Republic, making it the most visited destination in the Caribbean. The Dominican Republic offers a diverse geography of beaches, mountain ranges (including the highest point in the Caribbean, Pico Duarte [3,098 m; 10,164 ft]), sugar cane and tobacco plantations, and farmland. Most tourism is concentrated in the east of the country around Bávaro and Punta Cana, which offer all-inclusive beach resorts.

Whale watching is popular seasonally near the northeastern area, Samaná, and kitesurfing and windsurfing attract visitors to the northern areas of Puerto Plata, Sosúa, and Cabarete. Santo Domingo has an attractive colonial district that contains many historical sites dating back to Christopher Columbus's arrival in the New World. Few travelers visit other parts of the country, where tourist infrastructure is limited or nonexistent.

INFECTIOUS DISEASE RISKS

All travelers should be up to date on routine vaccinations, including coronavirus disease 2019 (COVID-19) and seasonal influenza. Cases of vaccine-preventable diseases have been reported among the local population and unvaccinated tourists from Europe and other parts of the world. Travelers also should be vaccinated against hepatitis A.

Enteric Infections & Diseases

CHOLERA

The most recent cholera outbreak in the Dominican Republic occurred in 2018 in Independencia Province and was readily contained. Since then, no cholera cases have been reported. For current recommendations for travelers to the Dominican Republic, visit the Centers for Disease Control and Prevention Travelers' Health website, <https://wwwnc.cdc.gov/travel/destinations/traveler/none/dominican-republic>.

TRAVELERS' DIARRHEA

Although food hygiene at large, all-inclusive resorts and popular tourist locations has improved in the past few years, travelers' diarrhea (TD) continues to be the most common health problem for visitors to the Dominican Republic (see Sec. 2, Ch. 6, Travelers' Diarrhea). Food purchased on the street or sold on beaches by informal sellers presents a greater risk for illness (see Sec. 2, Ch. 8, Food & Water Precautions). Advise travelers not to eat raw or undercooked seafood, and remind them to drink only purified, bottled water. Ice served in well-established tourist locations is usually made from purified water and safe to consume. Ice might not be safe in remote or non-tourist areas, however.

TYPHOID FEVER

Travelers should be vaccinated against typhoid fever, especially anyone visiting friends or relatives (see Sec. 5, Part 1, Ch. 24, Typhoid & Paratyphoid Fever).

Respiratory Infections & Diseases

CORONAVIRUS DISEASE 2019

For current information on COVID-19 in the Dominican Republic, consult the US Embassy in the Dominican Republic website (<https://do.usembassy.gov/>). For the US government's COVID-19 international travel requirements and recommendations, see www.cdc.gov/coronavirus/2019-ncov/travelers/international-travel/index.html. All travelers going to the Dominican Republic should be up to date with their COVID-19 vaccines (www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html).

TUBERCULOSIS

In 2019, the National Tuberculosis (TB) Control Program reported an incidence of 30.4 TB cases per 100,000 inhabitants. Although there is community spread of TB, no reports exist of travelers or tourists becoming infected with TB while visiting the Dominican Republic.

Sexually Transmitted Infections & HIV

Although illegal, commercial sex workers (CSW) are found throughout the Dominican Republic;

Samaná, Sosúa, and Puerto Plata are known sex tourism destinations. HIV prevalence among female CSW is ≈3%, and up to 6% in some areas; syphilis (12%), hepatitis B virus (2.4%), and hepatitis C virus (0.9%) are also concerns. Among men who have sex with men, HIV prevalence is ≤4.5% and active syphilis ≤13.9%. Travelers should avoid sexual intercourse with CSW and always use condoms with any partner whose HIV or sexually transmitted infection status is unknown (see Sec. 9, Ch. 12, Sex & Travel). Hepatitis B vaccine is recommended for people who could be exposed to blood through needles or medical procedures, or body fluids during sexual intercourse with a new partner.

Soil- & Waterborne Infections

LEPTOSPIROSIS

Leptospirosis is prevalent on the island; in 2020, 210 leptospirosis cases and 38 deaths were reported. *Leptospira* contamination can be attributed to climatic conditions (e.g., heavy rainfall, flooding) and to environmental factors, including agricultural practices, animal husbandry, inadequate disposal of waste, and poor sanitation. Travelers should avoid recreational activities in lakes and rivers, and other unprotected exposures to fresh water potentially contaminated with animal urine (see Sec. 5, Part 1, Ch. 10, Leptospirosis).

SCHISTOSOMIASIS

Based on the results of a 2013 serological survey conducted in provinces with a history of schistosomiasis transmission, the Dominican Republic has likely eliminated schistosomiasis transmission. This status has not yet been verified according to World Health Organization (WHO) criteria.

Vectorborne Diseases

Vectorborne viral diseases (e.g., dengue), as well as parasitic diseases (e.g., malaria) are potential concerns for travelers to the Dominican Republic. All travelers should take precautions to prevent mosquito bites by wearing long-sleeved shirts and long pants and by using insect repellent (see Sec. 4, Ch. 6, Mosquitoes, Ticks & Other Arthropods).

ARBOVIRUSES: CHIKUNGUNYA, DENGUE & ZIKA

Dengue is widespread in the Dominican Republic; 3,964 cases and 38 deaths were reported in 2020. Although cases of dengue are reported year-round, transmission frequently increases during the rainy season, May–November. The principal mosquito vector of the dengue virus, *Aedes aegypti*, is found in both rural and urban areas in the Dominican Republic (see Sec. 5, Part 2, Ch. 4, Dengue). Neither chikungunya nor Zika have been detected in the Dominican Republic for several years.

LYMPHATIC FILARIASIS

The Dominican Republic is actively participating in the global program to eliminate lymphatic filariasis (LF). LF is considered endemic to some smaller foci in the east and southwest regions of the country. As of 2020, the country had achieved targets set by the WHO to stop annual treatment, suggesting low likelihood of ongoing disease transmission and minimal risk to travelers. The Dominican Republic is still working to achieve all targets demonstrating elimination of LF as a public health problem (see Sec. 5, Part 3, Ch. 9, Lymphatic Filariasis, and the WHO website, www.who.int/en/news-room/fact-sheets/detail/lymphatic-filariasis#).

MALARIA

Malaria is endemic to the Dominican Republic (see Sec. 2, Ch. 5, Yellow Fever Vaccine & Malaria Prevention Information, by Country, and Sec. 5, Part 3, Ch. 16, Malaria). During 2020, a total of 822 cases of malaria were reported; 2 were fatal.

Malaria transmission occurs primarily in the provinces near the border with Haiti, and the provinces of La Altagracia (including the resort areas of Bávaro and Punta Cana), San Cristóbal, San Juan, and Santo Domingo. In the Distrito Nacional, city of Santo Domingo (the capital), transmission has been reported in the Los Tres Brazos and La Ciénaga areas. Transmission is rare in other places. The malaria species found in the Dominican Republic, *Plasmodium falciparum*, remains sensitive to all known antimalarial drugs, including chloroquine. Malaria chemoprophylaxis is recommended for travelers to provinces

of the Dominican Republic with documented transmission.

ENVIRONMENTAL HAZARDS & RISKS

Animal Bites & Rabies

Reports of animal rabies in the Dominican Republic are not uncommon, and the last reported case of human rabies was in 2019. In 2020, no cases of animal rabies or human rabies were reported. Postexposure rabies prophylaxis is available in specialized and regional hospitals. Consider preexposure vaccination for travelers potentially at risk for animal bites (e.g., people spending extended time outdoors, anyone handling animals). Advise travelers to avoid petting or playing with animals.

Climate & Sun Exposure

Visitors to the Dominican Republic often underestimate the strength of the sun and the dehydrating effect of the humid environment. Encourage travelers to take precautions to avoid sunburn by wearing hats and suitable clothing, along with proper application of a broad-spectrum sunscreen with a sun protection factor (SPF) ≥ 15 that protects against both ultraviolet A and B (see Sec. 4, Ch. 1, Sun Exposure). Travelers should drink plenty of hydrating fluids throughout the day.

Toxic Exposures

METHANOL

Poisonings from consuming methanol-contaminated ethanol in fermented beverages occur in both resort areas and in the community in the Dominican Republic. In December 2017, an outbreak involved 41 vacationers in the resort areas of Punta Cana. In December 2019, 4 people became sick and 2 died from methanol poisoning. In a community outbreak in November 2020, 9 men in the Santo Domingo Este municipality suffered methanol poisoning after consuming a contaminated drink. During January–April 2021, an outbreak involving >300 people, predominantly in the northern and northeastern regions of the country, was traced to drinking adulterated ethanol; >100 died. The majority of cases occurred the week after the long Easter weekend.

SAFETY & SECURITY

Crime

The risk for crime in the Dominican Republic is like that of major cities in the United States. Although most crime affecting tourists involves robbery or pickpocketing, more serious assaults occasionally occur, and perpetrators might react violently if resisted (see Sec. 4, Ch. 11, Safety & Security Overseas). Visitors to the Dominican Republic should follow normal safety precautions (e.g., going out in groups, especially at night; using only licensed taxi drivers; drinking alcohol in moderation; and being cautious of strangers). Criminal activity often is higher during the Christmas and New Year season, and additional caution during that time is warranted.

Traffic-Related Injuries

Driving in the Dominican Republic is hazardous (see Sec. 8, Ch. 5, Road & Traffic Safety). Traffic laws are rarely enforced, and drivers commonly drive while intoxicated, text while driving, exceed speed limits, do not respect red lights or stop signs, and drive without seatbelts or helmets. According to WHO statistics, the Dominican Republic has the highest number of traffic deaths per capita in the world (110 per 100,000 population in 2019).

Many fatal or serious traffic crashes involve motorcycles and pedestrians. Motorcycle taxis, used throughout the country, including in tourist areas, frequently carry ≥ 2 passengers riding without helmets. Remind visitors to avoid motorcycle taxis, to use only licensed taxis, and to always wear a seatbelt.

AVAILABILITY & QUALITY OF MEDICAL CARE

In the Dominican Republic, public medical clinics lack basic resources and supplies, and few or no English-speaking staff are available. In

addition, only minimal staff are available overnight in non-emergency wards; if hospitalized, travelers should consider hiring a private nurse to spend the night.

Private hospitals and doctors might offer a more comprehensive range of services but typically require advance payment or proof of adequate insurance before providing medical services or admitting a patient. Some hotels and resorts have preestablished, exclusive arrangements with select medical providers; these can have additional, associated costs, and might also limit choices for emergency medical care.

Psychological and psychiatric services are limited, even in the larger cities, with hospital-based care available only through government institutions.

Medical Tourism

The market for medical tourism, including plastic surgery and dental care, is growing in the Dominican Republic. Thousands of patients travel to the country each year to access medical services that cost a fraction of what they do in the United States. Several companies and clinics offer package deals that include postsurgical recovery at local tourist resorts. Most health care facilities catering to medical tourists have not, however, met the standards required by international accrediting bodies.

Some medical tourists to the Dominican Republic have experienced a substandard quality of care, health care–associated infections, and even death. Anyone considering the Dominican Republic as a destination for medical procedures should consult with a US health care provider before travel, and research whether the health care providers and facilities in the Dominican Republic meet accepted standards of care (see Sec. 6, Ch. 4, Medical Tourism). Legal options in case of malpractice are very limited in the Dominican Republic.

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HAITI

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10

DESTINATION OVERVIEW

The Republic of Haiti is a country located on the island of Hispaniola in the Greater Antilles archipelago of the Caribbean Sea (see Map 10-08). The shared border between Haiti and the Dominican Republic is porous; migrant workers move readily between the 2 countries, and cultural influences are shared. North America and France have large Haitian diaspora communities. Travelers visiting friends and relatives (VFR) make up a large proportion of visitors to Haiti each year. Other reasons people come to Haiti include foreign diplomacy, international business, missionary and humanitarian aid work, and tourism.

Port-au-Prince, Haiti's capital, is often the main entry point for international arrivals. Haiti has many tourist destinations, including a popular cruise ship destination in Labadie (Port Labadee), which has white sand beaches and scenery that attract visitors year-round. Historical architecture sites (e.g., Cathédrale Notre-Dame in

the city of Cap-Haïtien; Citadelle Laferrière, reputedly the largest fortress in the Americas and a UNESCO World Heritage Site, located on top of mountain Bonnet à l'Evêque) are popular tourist destinations. The annual Haitian Carnival, which takes place in February or March, draws crowds from around the world. Haiti has strong economic and social ties with international organizations; as such, business travelers, foreign diplomats, humanitarian aid workers, and missionaries often visit Haiti.

Travelers can find various types of accommodations in Haiti, ranging from dormitory-style to bed-and-breakfast inns to house rentals and upscale hotels in major cities. Most accommodations include internet, but signal and reliability are often poor due to interruptions of services within the country.

INFECTIOUS DISEASE RISKS

Environmental degradation has contributed to Haiti's poor sanitation and water quality. As a result,



MAP 10-08 Haiti

multiple public health risks exist for Haitians and for travelers to Haiti. Anyone traveling to Haiti should be up to date on routine vaccinations, including diphtheria (cases have increased in recent years) and tetanus boosters, seasonal influenza, and measles. Although measles has been eliminated in Haiti, the risk for reintroduction is ever-present.

Enteric Infections & Diseases

CHOLERA

As of February 2021, the cholera outbreak that started after the 2010 earthquake had caused 820,555 suspected cases of illness and 9,792 deaths. The epidemic curve peaked in 2011, with declining incidence and mortality rates annually due to improved access to clean water and sanitation and the efforts of cholera treatment centers. In 2019, 9 years after the outbreak started, Haiti reported 720 suspected cholera cases and only 3 deaths. In October 2022, after 3 years of no reports of culture-confirmed cholera, Haiti's National

Public Health Laboratory identified new cases of culture-confirmed disease and was investigating additional suspect cases.

Despite declining cases, cholera remains a persistent public health threat in Haiti. Oral cholera vaccine has been implemented as part of a complementary set of ongoing control measures that include improved diarrheal disease surveillance and enhanced laboratory capacity. Travelers should adhere to food and water precautions, and—depending on their planned itinerary—consider cholera vaccine (see Sec. 5, Part 1, Ch. 5, Cholera). For current recommendations, see the Centers for Disease Control and Prevention (CDC) Travelers' Health destination page for Haiti (<https://wwwnc.cdc.gov/travel/destinations/traveler/none/haiti>).

TRAVELERS' DIARRHEA

Visitors to Haiti are at high risk for travelers' diarrhea (TD). Travelers who want to experience the local flavorful cuisine (e.g., *griot* [seasoned fried

pork], plantains, rice with red beans, and a variety of fish and shellfish, including conch), should select food and beverages with care (see Sec. 2, Ch. 6, Travelers' Diarrhea, and Sec. 2, Ch. 8, Food & Water Precautions).

TYPHOID FEVER

Without prompt treatment, *Salmonella enterica* serotype Typhi infection can cause serious morbidity and mortality (Sec. 5, Part 1, Ch. 24, Typhoid & Paratyphoid Fever). On average, Haiti's Ministry of Health reports 1,200 suspected cases weekly throughout the country. Although the true extent of typhoid infection in Haiti is not fully known, cases are reported regularly in all 10 departments. Due to major public health infrastructure investments (sanitation, access to safe drinking water) made in response to the cholera outbreak, the number of typhoid fever cases has been decreasing, but disease transmission remains active. Urge all travelers to adhere to strict food and water precautions, and—depending on their planned itinerary—to consider receiving typhoid fever vaccine.

Respiratory Infections & Diseases

CORONAVIRUS DISEASE 2019

For current information on coronavirus disease 2019 (COVID-19) in Haiti, consult the US Embassy in Haiti website (<https://ht.usembassy.gov>). For the US government's COVID-19 international travel requirements and recommendations, see www.cdc.gov/coronavirus/2019-ncov/travelers/international-travel/index.html. All travelers going to Haiti should be up to date with their COVID-19 vaccines (www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html).

TUBERCULOSIS

Tuberculosis (TB) is more prevalent in Haiti than in neighboring countries. Using appropriate and effective strategies, the Programme National de Lutte contre la Tuberculose (PNLT) has been able to improve case detection and treatment throughout the country. Short-term travelers are not at high risk of tuberculosis unless they are residing or spending extended time in specific crowded environments (e.g., shared room hostels, prisons).

Sexually Transmitted Infections & HIV

Support from the international community over the past 20 years has helped stabilize the prevalence of HIV in Haiti; the estimated prevalence is 2% among adults aged >15 years. Among people 15–24 years age of age, infection is disproportionately greater among women than men (2.3% vs. 1.6%). As of December 2020, 85% of people living with HIV were aware of their diagnosis, 83% of those diagnosed were receiving antiretroviral therapy, and 72% have an undetectable viral load. Preexposure prophylaxis is available at all regional hospitals throughout the country and at several high-volume health centers. Condoms can be easily purchased at local pharmacies and grocery stores, although quality cannot be guaranteed.

Soil- & Waterborne Infections

HELMINTHS

Although the prevalence of helminthiasis is diminishing in Haiti, intestinal parasites represent a potential concern for travelers, emphasizing the need for strict adherence to food and water precautions (see Sec. 5, Part 3, Ch. 13, Soil-Transmitted Helminths).

Vectorborne Diseases

Vectorborne diseases, both viral and parasitic, are common in Haiti and include dengue and *Plasmodium falciparum* malaria. Travelers to Haiti should take measures to protect themselves from mosquito bites (see Sec. 4, Ch. 6, Mosquitoes, Ticks & Other Arthropods).

ARBOVIRUSES: CHIKUNGUNYA, DENGUE & ZIKA

In 2021, ongoing dengue surveillance in Haiti confirmed 18 cases out of >5,000 specimens tested through October of that year. Seroprevalence studies conducted in 2017 found ≈72% of Haitians had been exposed to dengue, confirming the results of a previous study conducted in 2012. Advise longer-term travelers to Haiti to select accommodations with air conditioning or well-screened windows and doors; to wear clothes that cover the arms and legs; and to use insect repellent. No confirmed cases of chikungunya or Zika have been documented in Haiti since June 2014.

LYMPHATIC FILARIASIS

Haiti actively participates in the global program to eliminate lymphatic filariasis (LF). LF is considered endemic to Hispaniola, including many parts of Haiti. As of 2020, several areas of the country, including Port-au-Prince, still require annual mass treatment campaigns aimed at reducing parasite transmission (see www.who.int/en/news-room/fact-sheets/detail/lymphatic-filariasis). Prevention involves adherence to insect bite precautions (see Sec. 5, Part 3, Ch. 9, Lymphatic Filariasis).

MALARIA

Chloroquine-sensitive *P. falciparum* malaria is endemic to Haiti (see Sec. 2, Ch. 5, Yellow Fever Vaccine and Malaria Prevention Information, by Country). The incidence of malaria has been decreasing since 2016; current incidence is ≈70 cases per 100,000 people, annually. The highest transmission rates are reported to occur after the rainy seasons, March–May and October–November. Malaria is a localized infection in Haiti and is reported primarily from the Southern region. Nevertheless, CDC recommends that all travelers to Haiti, regardless of itinerary, take malaria chemoprophylaxis (see Sec. 5, Part 3, Ch. 16, Malaria).

ENVIRONMENTAL HAZARDS & RISKS

Animal Bites & Rabies

Haiti is more affected by rabies than any other nation in the Americas. Prevention efforts in the country have increased, but with a high number of stray dogs, the number of cases of human rabies is not yet clearly defined. Preexposure rabies vaccination is recommended for travelers anticipating contact with animals. Travelers with high-risk exposures for rabies generally require medical evacuation to the United States to receive definitive care and management, including appropriate postexposure prophylaxis (see Sec 5, Part 2, Ch. 18, Rabies).

Ciguatera Fish Poisoning

Ciguatera fish poisoning commonly occurs in Haiti. Outbreaks can happen seasonally or

sporadically, particularly after storms. Not all fish of a given species or from a given area will necessarily be toxic. Travelers to Haiti should avoid eating reef fish weighing >2.7 kg (6 lbs) or the filets of large fish (see Sec. 4, Ch. 10, Food Poisoning from Marine Toxins).

Climate & Sun Exposure

With some variation depending on elevation, the climate in Haiti is tropical and hot, and remains so throughout the year. Haiti has an average monthly temperature range of 77°F–84°F. Humidity is often high, and microclimates exist depending on the geographic location. Travelers should minimize sun exposure and use a broad-spectrum sunscreen (see Sec. 4, Ch. 1, Sun Exposure). Sunscreen products are not always available in local markets, however, and travelers should pack enough to last them for the duration of their travel.

Natural Disasters

Natural disasters are common in Haiti, including earthquakes, floods, hurricanes, and tropical storms. Hurricane season lasts from June–November. In 2008, Haiti experienced a series of 4 hurricanes and tropical storms within 2 months. Hurricane Matthew, the first Category 4 hurricane to hit the island since 1964, struck Haiti in October 2016; 546 people died and >120,000 were displaced. Strong winds and heavy rain caused flash floods, mudslides, river floods, crop and vegetation loss, and destruction of homes and businesses. One year later, rain and flooding from Hurricane Irma compounded the losses to Haiti's agricultural sector. These combined disasters further weakened an already fragile infrastructure.

In January 2010, Haiti experienced a 7.0 magnitude earthquake that killed >220,000 people and displaced 1.5 million people from their homes. More recently, on August 14, 2021, a magnitude 7.2 earthquake struck southwest Haiti, about 70 miles west of the capital of Port-au-Prince, killing ≈2,200 people and injuring >12,000. In addition, 28 of the 66 health facilities in the region were severely damaged or destroyed. Two days later, tropical storm Grace made landfall causing flooding and complicating relief efforts. Together, these

emergencies have strained Haiti's health care system immensely.

SAFETY & SECURITY

Crime

The crime rate in Haiti is high, particularly in Port-au-Prince, presenting persistent safety concerns for travelers. Although much of the violent crime is perpetrated by Haitians against Haitians, American citizens also have been victims (see Sec. 4, Ch. 11, Safety & Security Overseas). Travelers arriving on flights from the United States have been targeted for robbery and attack.

During Carnival, crime, disorderly conduct, and general congestion increase. Advise travelers to maintain awareness of their surroundings, avoid nighttime travel, keep valuables well hidden (not left in parked vehicles), and to lock all doors and windows.

Political Unrest

Political and civil unrest represents a safety concern for visitors to Haiti. Frequent and sometimes spontaneous protests occur in Port-au-Prince. Demonstrations—which travelers should avoid, when possible—can turn violent. The US Department of State's Smart Traveler Enrollment Program (STEP; <https://step.state.gov/step>) electronically pushes information to travelers about safety conditions at their destination and provides direct embassy contact in case of man-made emergencies (political unrest and demonstrations, rioting, terrorist activity) or natural disasters.

Traffic-Related Injuries

Motor vehicle injuries are the most common cause of death for healthy US residents traveling abroad (see Sec. 8, Ch. 5, Road & Traffic Safety). The risk for death from road injuries in Haiti is high; the 2019 average rate was 18.77 per 100,000 population, compared with an average rate of 15.33 for the Americas region. Road conditions in Haiti differ greatly from those in the United States; roads and lanes are generally unmarked, speed limits are seldom posted or adhered to,

rights of way are not observed, and animals, carts, and vendors all share the roads with motor vehicles. Some roads are unpaved or have large potholes. Lack of streetlights significantly compounds the risk of being on roads at night.

Traffic is usually chaotic and congested in urban areas. Vibrantly painted *tap taps* are open-air vehicles (buses or pick-up trucks), mechanically unsound, and often overloaded with passengers. Although *tap taps* are a common form of public transportation for Haitians, advise travelers to avoid using them because of safety concerns (crashes, kidnappings, robberies). Remind travelers to remain alert when walking, to choose safe vehicles, and to observe safety practices when operating vehicles. Travelers should fasten seat belts when riding in cars, and wear a helmet when riding bicycles or motorbikes.

AVAILABILITY & QUALITY OF MEDICAL CARE

According to the World Health Organization, delivery of primary health care services was already challenged in Haiti before the 2021 earthquake. Since then, the health care situation has become even more complicated; many facilities, primarily in the south, are unable to function because of physical damage, and medical facilities can close without notice due to social unrest.

The Haitian health care system faces multiple shortages (e.g., limited availability of essential medicines and supplies, lack of trained health professionals) and is costly. Over 40% of the population report not having used the public health care system, even in cases of serious injury or illness, principally due to the cost. Thus, access to health care, especially for medical emergencies remains a challenge in Haiti, and medical evacuation often is necessary for patients who require immediate attention. Consequently, people planning travel to Haiti should purchase travel health insurance and medical evacuation insurance (see Sec. 6, Ch. 1, Travel Insurance, Travel Health Insurance & Medical Evacuation Insurance) and bring a travel first aid kit (see Sec. 2, Ch. 10, Travel Health Kits).

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MEXICO

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DESTINATION OVERVIEW

Mexico, the second most populous country in Latin America (population >120 million), is the country most often visited by US tourists. Many US residents, particularly in the border region, frequent Mexico to visit friends and relatives, contributing to the nearly 200 million US–Mexico land border crossings annually. The capital, Mexico City, is one of the world's largest cities (population >20 million) and is a popular destination for business and mass gathering events.

Mexico's diverse geography throughout its 32 states attracts travelers for nature, recreation, and sport (Map 10-09). The country's rich history, diverse cuisine, and proud culture reflects its pre-Columbian and Hispanic past. In the past decade, travelers to Mexico have increasingly sought health and wellness services throughout the country.

INFECTIOUS DISEASE RISKS

All travelers should be up to date on their routine immunizations. Varicella is endemic to Mexico, and measles and mumps outbreaks in Mexico have coincided with worldwide and regional outbreaks. Hepatitis A is also endemic to Mexico; visitors should receive ≥1 dose of the hepatitis A vaccine series before travel.

Enteric Infections & Diseases

CHOLERA

Isolated cases and outbreaks of *Vibrio cholera* occur occasionally in Mexico. Risk for infection is low, however, and cholera vaccination is not recommended for travelers to Mexico.

GIARDIASIS

Giardia is endemic throughout the world. In addition to drinking water precautions, remind travelers to avoid swallowing water when

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MAP 10-09 Mexico

swimming or wading in recreational waters, including pools and lakes (see Sec. 5, Part 3, Ch. 12, Giardiasis).

TAENIASIS & CYSTICERCOSIS

Taeniasis in humans, a tapeworm infection, is caused by ingestion of the eggs of 3 *Taenia* parasite species in raw or undercooked beef or pork (see Sec. 5, Part 3, Ch. 22, Taeniasis). Taeniasis can present as a mild or asymptomatic intestinal infection. Cysticercosis, a more serious infection of muscle, brain, or other tissues, is caused by ingestion of the larval cysts of *Taenia solium* excreted by human carriers (see Sec. 5, Part 3, Ch. 6, Cysticercosis). Over months to decades, the infection can progress to neurocysticercosis, a rare but potentially disabling or fatal infection. *T. solium* is endemic to Mexico. Undercooked vegetables contaminated with *T. solium* larvae could be the major source of cysticercosis infection.

TRAVELERS' DIARRHEA

Travelers' diarrhea commonly affects visitors to Mexico. Education is key to prevention; provide travelers with instructions on safe food and water precautions (see Sec. 2, Ch. 8, Food & Water Precautions). Remind travelers that tap water in Mexico is not potable; that they should avoid consuming unpasteurized, often artisanal, dairy products, particularly soft or fresh cheeses; and that they should avoid eating raw or undercooked meat or fish, leafy greens, or raw vegetables. For further information about travelers' diarrhea, see Sec. 2, Ch. 6, Travelers' Diarrhea.

TYPHOID FEVER

Typhoid fever is endemic to Mexico and can be life-threatening (see Sec. 5, Part 1, Ch. 24, Typhoid & Paratyphoid Fever). The Centers for Disease Control and Prevention (CDC) recommends that most travelers to Mexico get the typhoid vaccine, especially people planning to stay with friends or relatives, and those visiting smaller cities or rural areas. Vaccinated travelers also should follow food and water precautions to prevent typhoid fever and other enteric infections.

Respiratory Infections & Diseases

CORONAVIRUS DISEASE 2019

For current information on coronavirus disease 2019 (COVID-19) in Mexico, consult the US Embassy & Consulates in Mexico website (<https://mx.usembassy.gov/>). For the US government's COVID-19 international travel requirements and recommendations, see www.cdc.gov/coronavirus/2019-ncov/travelers/international-travel/index.html. All travelers going to Mexico should be up to date with their COVID-19 vaccines (www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html).

ENDEMIC FUNGI

Coccidioides is endemic to the soil of northwestern Mexico and *Histoplasma* is found mainly in Mexico's central and southeast regions (see Sec. 5, Part 4, Ch. 1, Coccidioidomycosis / Valley Fever, and Sec. 5, Part 4, Ch. 2, Histoplasmosis). Anyone planning to participate in soil disrupting activities (e.g., construction or farming) should be aware of the risks for and symptoms of fungal lung infection, and practice mitigation techniques. For prevention measures, see www.cdc.gov/niosh/topics/valleyfever/default.html and www.cdc.gov/niosh/topics/histoplasmosis/default.html.

INFLUENZA

Influenza strains circulate in Mexico, just as they do in the United States. Pretravel influenza vaccination ≥ 2 weeks before departure is a prudent health protection measure.

LEGIONNAIRES' DISEASE

Consider legionellosis in the differential diagnosis of travelers who develop pneumonia within 14 days of travel, especially older and immunocompromised people (see Sec. 5, Part 1, Ch. 9, Legionnaires' Disease & Pontiac Fever). Travel histories for people returning from Mexico who were diagnosed with Legionnaires' disease periodically identify associations between the disease and stays at specific hotels and resorts in Mexico.

TUBERCULOSIS

Mexico is considered a moderate-incidence country for tuberculosis (TB). TB incidence in Mexico is lower than in Africa, Asia, and Eastern Europe,

but incidence is several-fold greater than in the United States. Help travelers determine their potential for exposure to *Mycobacterium tuberculosis*. Risk for infection is greatest among people intending to remain in Mexico ≥ 6 months; anyone planning to work in places where they could be exposed to patients with untreated TB (e.g., drug rehabilitation centers, health care settings, prisons, shelters); people planning extended or frequent visits home to spend time with friends and relatives; or people eating unpasteurized dairy products (see Sec. 5, Part 1, Ch. 22, Tuberculosis).

Sexually Transmitted Infections & HIV

HIV prevalence in Mexico is low, except among high-risk populations (e.g., sex workers, injection drug users, men who have sex with men). Other sexually transmitted infections, including chlamydia, gonorrhea, and syphilis, also are more prevalent in these populations. Travelers should avoid condomless sex with unknown or unfamiliar partners (condoms are easily available for purchase in Mexico) and injection drug use.

For people expecting to stay in Mexico ≥ 6 months, medical tourists, or anyone who might be exposed to blood or other body fluids, including through sexual contact, hepatitis B vaccine is recommended.

Soil- & Waterborne Infections

CUTANEOUS LARVA MIGRANS

More remote (i.e., less visited) beaches pose a risk for cutaneous larva migrans (CLM), a creeping skin eruption commonly associated with dog hookworm infection (see Sec. 5, Part 3, Ch. 4, Cutaneous Larva Migrans, and Sec. 11, Ch. 8, Dermatologic Conditions). Resort areas implementing stray cat and dog removal programs have reduced the chances of infection on their beaches. CLM is preventable by wearing shoes and avoiding direct skin contact with soil and sand.

Vectorborne Diseases

ARBOVIRUSES: CHIKUNGUNYA, DENGUE & ZIKA

Counsel all travelers to Mexico, including those visiting friends or relatives frequently or for extended periods, to take steps to prevent mosquito bites by

using insect repellent, wearing long-sleeved shirts and long pants, and staying in accommodations with air conditioning or screens (see Sec. 4, Ch. 6, Mosquitoes, Ticks & Other Arthropods).

Chikungunya has been reported in Mexico since 2014 (see Sec. 5, Part 2, Ch. 2, Chikungunya). Dengue is endemic throughout Mexico; virus transmission is a risk year-round, and large outbreaks occur periodically (see Sec. 5, Part 2, Ch. 4, Dengue). Zika also is a risk in Mexico (see Sec. 5, Part 2, Ch. 27, Zika). Because of the risk for birth defects in infants born to mothers infected with Zika during pregnancy, people who are pregnant or trying to become pregnant, and their sex partners, should be aware of the most recent CDC recommendations at <https://wwwnc.cdc.gov/travel/page/zika-information>.

LEISHMANIASIS

Sand flies that transmit cutaneous leishmaniasis are found in southern Mexico and along parts of both the Pacific and Gulf coasts (see Sec. 5, Part 3, Ch. 14, Cutaneous Leishmaniasis). Risk for infection is greatest for ecotourists, field biologists, and long-term travelers. Travelers can reduce their risk for sand fly bites by avoiding outdoor activities at night, wearing protective clothing and applying insect repellent to exposed skin and under the edges of clothing; and sleeping in air-conditioned or well-screened areas.

MALARIA

Dramatic decreases in malaria incidence in recent decades mean risk for infection among travelers to Mexico is low. Major resorts are free of the disease, as is the US–Mexico border region. *Plasmodium vivax* malaria prophylaxis is currently recommended only for travelers going to Chiapas and the southern part of Chihuahua (see Sec. 2, Ch. 5, Yellow Fever Vaccine and Malaria Prevention Information, by Country). Mosquito avoidance (but not chemoprophylaxis) is recommended for travelers visiting Campeche, Durango, Nayarit, Quintana Roo, Sinaloa, Sonora, and Tabasco.

RICKETTSIAL DISEASE

In Mexico, rickettsial diseases include tickborne Rocky Mountain spotted fever (RMSF), which

potentially is fatal unless treated promptly with a tetracycline; and fleaborne typhus, a disease with dengue-like symptoms (see Sec. 5, Part 1, Ch. 18, Rickettsial Diseases). Mexico's large urban and rural stray dog population is a reservoir for the RMSF vector, *Rhipicephalus sanguineus*, the brown dog tick. Risk for infection is greatest among people who have contact with dogs, and visitors to grassy, brushy, or wooded areas, particularly in states along the US–Mexico border, including Baja California, Sonora, Chihuahua, and Coahuila. Provide travelers with information about how to avoid flea and tick bites, both indoors and outside (Sec. 4, Ch. 6, Mosquitoes, Ticks & Other Arthropods).

TRYPANOSOMIASIS

Chagas disease, transmitted by triatomine insects infected with *Trypanosoma cruzi*, is endemic throughout Mexico (see Sec. 5, Part 3, Ch. 25, American Trypanosomiasis / Chagas Disease). In 2017, the national incidence was reported to be 0.70 cases (<1 case) per 100,000 population, varying by year and state. Most cases occur along the Pacific Coast and the Gulf of Mexico, and in central and southern Mexico. The risk for travelers is believed to be extremely low; risk might be heightened for travelers staying in poor-quality housing in endemic regions.

ENVIRONMENTAL HAZARDS & RISKS

Air Pollution

Air pollution in Mexico City has decreased in recent years. It can still be particularly severe during the dry winter months, however, exacerbating asthma and aggravating chronic lung and heart conditions (see Sec. 4, Ch. 3, Air Quality & Ionizing Radiation).

Altitude Illness

Mexico City is over a mile high (2,250 m; 7,382 ft). Healthy travelers coming from lower elevations and people with heart and lung conditions might require an acclimatization period (see Sec. 4, Ch. 5, High Elevation Travel & Altitude Illness).

Animal Bites

RABIES

In late 2019, the World Health Organization declared Mexico free from human rabies transmitted by dogs. Other animals, including bats, coatis (also known as coatimundi, cholugo, moncún, or tejón), coyotes, foxes, and skunks, are reported carriers of rabies virus. Preexposure rabies prophylaxis is recommended for adventure travelers, ecotourists, field biologists, and others participating in activities where they are at increased risk for wildlife exposure, and also for those visiting less developed, remote areas of the country where access to medical care is limited. Rabies immune globulin for postexposure prophylaxis is available in Mexico (see Sec. 5, Part 2, Ch. 18, Rabies).

SCORPIONS, SNAKES & OTHER VENOMOUS WILDLIFE

When visiting rural areas or participating in outdoor activities, especially during spring and summer, travelers should be aware of Mexico's diverse venomous creatures. Injuries and deaths caused by *Centruroides* genus (bark) scorpions have been reported from states along the Pacific Coast and in the central states of Durango, Guanajuato, State of Mexico, and Morelos. Other potential exposures include bites from pit vipers (*Agkistrodon*, *Bothrops*, and *Crotalus* spp.), coral snakes (*Micruroides* spp.), and spiders (*Latrodectus* and *Loxosceles* spp.), and stings from fire ants, bees, and wasps (see Sec. 4, Ch. 7, Zoonotic Exposures: Bites, Stings, Scratches & Other Hazards). Antidotes and antivenoms are available at some locations in Mexico.

Beach & Ocean Exposures

SARGASSUM SEAWEED

Sargassum (brown seaweed) season occurs during the warmer months, typically April–August along Mexico's Caribbean coastline. Exposure to decomposing seaweed can result in difficulty breathing, headaches, nausea, and skin eruptions called “swimmers' dermatitis.” Advise travelers to avoid direct skin exposure to Sargassum seaweed and, if exposed, to rinse themselves with copious amounts of fresh water and to seek medical attention if they experience respiratory trouble.

Climate & Sun Exposure

Mexico's climate varies by region, season, and elevation. Longer wavelength ultraviolet (UV) A and shorter wavelength UVB rays intensify at southern latitudes. Travelers engaging in outdoor activities should use broad-spectrum sunscreen (readily available for purchase in Mexico) and use caution with prolonged or repetitive sun exposure to avoid sunburn (see Sec. 4, Ch. 1, Sun Exposure).

Natural Disasters

EARTHQUAKES

Sitting atop 3 large tectonic plates, Mexico is one of the most seismically active countries in the world; 80% of earthquakes are registered in the southeastern region. Travelers should follow the audible earthquake early warning system and evacuation instructions, typically posted in large buildings.

HURRICANES

Hurricane season extends from mid-May–November. Travelers, especially to coastal regions, should be alert to weather reports. After tropical storms or hurricanes, travelers should be mindful of the potential increased incidence of diarrheal illnesses and mosquito-borne diseases.

Toxic Exposures

LEAD

Lead can be present in traditional Mexican pottery. Although many traditional potters have switched to lead-free glazes, their kilns might remain contaminated from past use. Lead can leach into food and into beverages prepared, stored, and served in these dishes. The effects of lead poisoning depend on the amount and duration of exposure, and the age of the person intoxicated. The US Food and Drug Administration (FDA) strongly advises against using pottery with leachable lead for cooking, serving, or storing food and drink (www.fda.gov/food/metals-and-your-food/questions-and-answers-lead-glazed-traditional-pottery). Lead-testing kits can help assess safety.

MERCURY

Occasional reports of severe mercury poisoning associated with use of Mexican skin-lightening

creams should serve as a warning against the purchase of any cosmetics that claim to treat acne, lighten the skin, or fade freckles or age spots.

SAFETY & SECURITY

Crime

Although travel to Mexico is generally considered safe, thefts and robberies do occur, and drug-related violence exists (see Sec. 4, Ch. 11, Safety & Security Overseas). Travelers should consult the US Department of State website (<https://travel.state.gov/content/travel/en/international-travel/International-Travel-Country-Information-Pages/Mexico.html>) for relevant safety and security alerts pertaining to their intended destinations within Mexico.

Political Unrest

Frequent protests occur in the big cities. Demonstrations are usually peaceful but can be large and worsen already congested traffic. When possible, travelers should avoid protests and the surrounding areas.

Traffic-Related Injuries

Injuries, not infectious diseases, pose the greatest life threat to healthy travelers in Mexico. In one review, about half (51%) of all US traveler deaths in Mexico were injury-related, with 18% due to motor vehicle crashes (see Sec. 8, Ch. 5, Road & Traffic Safety). Mexico's highway system and roads are mostly modern, well-maintained, and safe. Toll highways are often of higher quality. Nevertheless, driving in city traffic and at night through the countryside can be dangerous. Remind travelers to use seat belts when riding in cars. Helmet use when riding a bicycle or motorbike is highly recommended, although not strictly enforced.

AVAILABILITY & QUALITY OF MEDICAL CARE

Good health care is available in most cities in Mexico, and tourist hotels and resorts usually have physicians available. Payment (cash or credit card) might be required before any care is given. Most providers do not accept US health insurance or Medicare/Medicaid plans.

Medical Tourism

Many US residents visit Mexico to receive health services. Medical tourists going to Mexico primarily seek cosmetic surgery, dental, and eye care services from providers in northern border cities. Increasingly, a complete range of services and specialized procedures for medical tourists are being made available in Cancún, Guadalajara, Mérida, Mexico City, Monterrey, and Tijuana, cities that feature a more robust infrastructure.

Some people who travel to Mexico for medical care have become infected with antimicrobial-resistant strains of bacteria not commonly found in the United States (see Sec. 11, Ch. 5, Antimicrobial Resistance). In 2019, for example, CDC warned medical tourists against having invasive medical procedures performed in specific hospitals and cities due to risk for infection with carbapenem-resistant *Pseudomonas aeruginosa*. People considering travel to Mexico for medical procedures are advised to consult with a US health professional

≥1 month before departure and to verify provider qualifications and facility credentials in Mexico. Local standards for facility accreditation and provider certification differ from those in the United States. Make potential medical tourists aware of the additional inherent risks associated with surgery, medical procedures, and traveling while being treated for a medical condition or during recovery (see Sec. 6, Ch. 4, Medical Tourism).

Many people also travel to Mexico to purchase more affordable prescription drugs. The FDA recommends only purchasing medications from legal sources in the United States because the safety and effectiveness of drugs purchased in other countries cannot be assured (see Sec. 6, Ch. 3, . . . *perspectives*: Avoiding Poorly Regulated Medicines & Medical Products During Travel). The agency has posted guidance regarding the importation of drug or device products into the United States from other countries at www.fda.gov/industry/import-basics/personal-importation#what-is.

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PERU

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DESTINATION OVERVIEW

Peru (Map 10-10) is the third largest country in South America. Peru's varied microclimates and ecologic diversity, which ranges from coastal beaches to Amazon rainforest to the snow-capped peaks of the Andes Mountains, made the land hospitable to pre-Inca and Inca peoples. Today, Peru is an attractive destination for tourists interested in history, recreation, and adventure. Many Peruvians who work in the tourist industry have a reasonable understanding of English.

Peru lies almost entirely between 70° and 80° longitude (as do the mid-Atlantic and New England states in the United States). Peru has a single time zone and does not change its clocks during the year. Jetlag is not normally a problem for US travelers to Peru, regardless of season.

US citizens visiting Peru do not need a visa. Most tourists fly into the capital, Lima, a megametropolis with nearly 10 million people and multiple neighborhoods (districts). Most visitors to Lima stay in Miraflores, Barranco, or occasionally, downtown (el Centro). The US Embassy office is in Surco; contact information is available on their website (<https://pe.usembassy.gov>). Popular activities in Lima include historic city tours, night life, and sampling the many local cuisines.

About 90 minutes away by plane is the former capital of the Inca empire, Cusco. A cosmopolitan city with a population of ≈400,000, Cusco is at a much higher elevation (3,339 m; ≈11,000 ft) than Lima (154 m; ≈500 ft) and is surrounded by many archeological sites, each a short bus ride away, including Sacsayhuamán, Q'enco, Písac, Ollantaytambo, Puka Pukara, Tambomachay, and others. The city itself has multiple cultural attractions that travelers can visit on foot (e.g., the Inca Museum, the Qorikancha Temple, the Barrio de los Artesanos in the San Blas neighborhood, and numerous churches). The 4-hour train trip to the ancient city of Machu Picchu (2,430 m; ≈8,000 ft)

is extremely popular. South of Cusco is the highest navigable lake in the world, Lake Titicaca (3,812 m; ≈12,500 ft). Shared by Peru with neighboring Bolivia, Lake Titicaca is home of the Uru people and the man-made floating islands on which they live.

Along its long Pacific Ocean coast, Peru has amazing beaches from north (Catacaos, Piura) to south (Ica). Other cities near the coast include Trujillo, Nazca with its mysterious pre-Inca lines etched into desert sands, and Arequipa, a starting point for travelers wishing to explore the world's second deepest canyon, Valle de Colca.

In the Andes, high-elevation destinations include Cajamarca, Huaraz (with the Cordillera Blanca Mountain range and Huascarán National Park both nearby), Huancayo, and Ayacucho. East of the Andes is the Amazon rainforest; Iquitos, bathed by the Amazon River and reachable only by plane or boat, is the largest and best-known city in the region; other cities include Pucallpa and Puerto Maldonado. Adventure and nature tourists often visit Manú National Park in Madre de Dios.

INFECTIOUS DISEASE RISKS

Peru follows the World Health Organization's Expanded Program on Immunization, which includes many (but not all) vaccines used in the United States. Although vaccination rates in Peru are relatively high, recent outbreaks of vaccine-preventable diseases have occurred, including diphtheria (2020), measles (2018–2019), and varicella (endemic). Thus, travelers should be up to date with all routine vaccines. For adults, additional booster doses might be indicated; for young children, an accelerated schedule could be indicated to assure protection (see www.cdc.gov/vaccines/schedules). Hepatitis A and hepatitis B are hyperendemic in provinces throughout the country, and travelers should be appropriately vaccinated.



MAP 10-10 Peru

Enteric Infections & Diseases

Peru has one of the richest and most exotic cuisines in the world, suitable for all palates. Cooked, hot dishes mostly are safe from foodborne pathogens, but fresh produce, fruits, and vegetables can be easy vehicles for infection. Although not the bulk of Peruvian cuisine, raw or partially cooked fish or meat (e.g., ceviche, tiradito, carpaccio), are popular in Peru and pose a risk for foodborne

illness. Sauces added to some dishes might carry infectious pathogens.

CHOLERA

In the early 1990s, after a century of absence, *Vibrio cholerae* O1 was reintroduced into the Americas via Peru. Since then, cholera has all but disappeared from the Americas. Some endemic strains are occasionally detected, but epidemic cholera is

not a risk, and cholera vaccine is not indicated for travel to Peru.

CYCLOSPORIASIS & CRYPTOSPORIDIOSIS

Cyclospora cayetanensis, named after the local Universidad Peruana Cayetano Heredia, is endemic to Peru. *C. cayetanensis* infection shares many features with giardiasis (described next), but treatment is different, requiring trimethoprim-sulfamethoxazole (see Sec. 5, Part 3, Ch. 5, Cyclosporiasis).

Cryptosporidium parvum and *C. hominis* follow a similar epidemiology; treatment is typically not attempted unless symptoms are protracted, or the host is immunocompromised. Oral rehydration is the most effective supportive therapy (see Sec. 5, Part 3, Ch. 3, Cryptosporidiosis). Travelers can reduce their risk for cyclosporiasis and cryptosporidiosis by carefully adhering to food and water precautions (see Sec. 2, Ch. 8, Food & Water Precautions).

GIARDIASIS

Transmitted by ingestion of contaminated water and sometimes vegetables, *Giardia duodenalis* infection presents with abdominal pain, bloating, “sulfur” belching, and vomiting. Giardiasis is more frequent among hikers, travelers to rural areas, or people who consume fresh juices. Travelers should avoid potential sources of infection, including drinking and recreational water that could be contaminated. No vaccine against giardiasis is available. For further information, see Sec. 5, Part 3, Ch. 12, Giardiasis.

HEPATITIS A

Hepatitis A virus is transmitted by contaminated food and water and is endemic to Peru; vaccination is highly effective and strongly recommended for all unvaccinated travelers. Whereas hepatitis A vaccine is routinely given to US children, most adults have not received the vaccine. Immune globulin is an alternative for people in whom the vaccine is contraindicated, including infants <6 months of age and anyone allergic to the vaccine or vaccine components (for prescribing details, including precautions and contraindications, see Sec. 5, Part 2, Ch. 7, Hepatitis A).

TRAVELERS' DIARRHEA

Anecdotal information suggests travelers' diarrhea (TD) among tourists to Peru is frequent and grossly underreported. The main cause is thought to be bacterial (primarily enterotoxigenic *Escherichia coli* strains). Less frequent causes are viral (norovirus, rotavirus) and parasitic (giardiasis).

Travelers should practice frequent hand-cleaning with hand sanitizer containing ≥60% alcohol, and avoid uncooked foods and untreated water, including tap water at hotels and restaurants. Bottled water is usually safe, as is canned soda, but ice is not safe. For infants, breastfeeding is safest; if feeding infant formula, travelers should use bottled or boiled water to reconstitute formula (see Sec. 7, Ch. 2, Travel & Breastfeeding, and Sec. 7, Ch. 3, Traveling Safely with Infants & Children).

For more information about prevention and treatment of travelers' diarrhea, see Sec. 2, Ch. 6, Travelers' Diarrhea.

TYPHOID FEVER

Before the 1990s, typhoid fever (caused by *Salmonella enterica* serotype Typhi) was hyperendemic to Peru. Since then, incidence has decreased greatly, but the disease remains endemic. Because the disease can be life-threatening and the bacterium has developed resistance to multiple antimicrobial agents, all travelers should receive one of the recommended typhoid vaccines (see Sec. 5, Part 1, Ch. 24, Typhoid & Paratyphoid Fever).

Respiratory Infections & Diseases

Like many other countries, Peru has endemic, seasonal respiratory infections, not all of which are preventable by routine vaccines. Because Peru is in the Southern Hemisphere, the seasons are opposite to seasons in the United States, which is relevant to the epidemiology of influenza. The influenza vaccine recommended for use in the Northern Hemisphere each year confers protection against the virus strains circulating in the Southern Hemisphere that same year.

CORONAVIRUS DISEASE 2019

For current information on coronavirus disease 2019 (COVID-19) in Peru, consult the US Embassy in Peru website (<https://pe.usembassy>).

gov). For the US government's COVID-19 international travel requirements and recommendations, see www.cdc.gov/coronavirus/2019-ncov/travelers/international-travel/index.html. All travelers going to Peru should be up to date with their COVID-19 vaccines (www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html).

TUBERCULOSIS

Tuberculosis (TB) is endemic to Peru. Multidrug-resistant and extensively drug-resistant TB strains frequently are detected, making treatment difficult and avoidance and prevention crucial. Infection risk is greatest among long-term travelers, especially people who visit friends and family, expatriates, missionaries, voluntourists (for a definition, see Sec. 9, Ch. 5, Humanitarian Aid Workers, Box 9-05), and health care workers. For management recommendations, see Sec. 5, Part 1, Ch. 22, Tuberculosis, and Sec. 5, Part 1, Ch. 23, . . . *perspectives*: Testing Travelers for *Mycobacterium tuberculosis* Infection.

Sexually Transmitted Infections & HIV

Although all sectors of the population are affected, HIV is more prevalent among commercial sex workers (prostitution is legal in Peru) and men who have sex with men, particularly in major cities (e.g., Iquitos, Lima). Some strains of HIV circulating in Peru are resistant to antiretroviral therapy, but probably not more than what is seen in other parts of the world (see Sec. 5, Part 2, Ch. 11, Human Immunodeficiency Virus / HIV). Antimicrobial-resistant strains of *Chlamydia trachomatis* and *Neisseria gonorrhoeae* are well described in Peru. Advise travelers to practice safe sex and to use barrier protection (e.g., condoms), especially with partners whose HIV or sexually transmitted infection status is unknown. Condoms are available for purchase in Peru.

Vectorborne Diseases

Mosquitoes and other biting insects are part of the experience in Peru, mainly in rural areas and the Amazon. Exposure depends largely on where a traveler is going, for how long, and their accommodations. Prevention is the best policy. Advise

travelers to avoid areas at high risk for insect bites, to minimize exposed skin, and to use insect repellents properly (see Sec. 4, Ch. 6, Mosquitoes, Ticks & Other Arthropods). For travelers going to malaria- or yellow fever-endemic areas of Peru, chemoprophylaxis or vaccination might be indicated (see the following sections for details).

ARBOVIRUSES: CHIKUNGUNYA, DENGUE & ZIKA

Three important vectorborne illnesses in Peru, chikungunya, dengue, and Zika, can range in severity from mild to severe. The epidemiology of each is cyclical and only partly understood, but outbreaks occur frequently. The viruses that cause these diseases are transmitted by “day-biting” *Aedes* mosquito species, whose habitats are <2,300 m (≈7,500 ft) elevation. Vertical Zika virus infection from a pregnant person to a developing fetus can be especially devastating (see virus-specific chapters in Section 5, and on the Centers for Disease Control and Prevention (CDC) Travelers' Health website, <https://wwwnc.cdc.gov/travel/page/zika-information>).

CARRIÓN DISEASE

Bartonella bacilliformis, the cause of Oroya Fever and verruga peruana (together known as Carrión disease), is a bacterium transmitted by *Lutzomyia* sandflies (see Sec. 5, Part 1, Ch. 2, Bartonella Infections). Endemic to some areas in Ancash (Caraz), Cajamarca, and Cusco (Urubamba), *Bartonella* infection is a low risk for most tourists. Nevertheless, travelers to the listed areas should practice insect bite precautions.

LEISHMANIASIS

Cutaneous leishmaniasis, which manifests as chronic ulcers, is a parasitic infection transmitted by the bite of certain sandflies endemic to many valleys in the Andes and tropical Amazon rainforest. Travelers visiting the Manú National Park in Madre de Dios are at greatest risk. No vaccine or chemoprophylaxis is available. Advise travelers to carefully adhere to insect bite precautions (see Sec. 4, Ch. 6, Mosquitoes, Ticks & Other Arthropods; and Sec. 5, Part 3, Ch. 14, Cutaneous Leishmaniasis).

MALARIA

Malaria is a risk on the eastern side of the Andes in areas <2,500 m (≈8,200 ft) elevation, including all of the Amazon rainforest and a few isolated areas on the northern Pacific Coast. Malaria is not a risk along most of the Pacific Coast, Lima Province, or the high Andes, including Cusco, Machu Picchu, and Lake Titicaca. The most common malaria species in Peru are *Plasmodium vivax* (80%) and *P. falciparum* (20%). Prepare travelers planning to enter endemic areas to take malaria chemoprophylaxis (i.e., atovaquone-proguanil, doxycycline, mefloquine, or tafenoquine) that protects against chloroquine-resistant malaria. For prescribing details, see Sec. 2, Ch. 5, Yellow Fever Vaccine & Malaria Prevention Information, by Country; Sec. 5, Part 3, Ch. 16, Malaria; and the CDC Malaria webpages (www.cdc.gov/parasites/malaria/index.html).

YELLOW FEVER

In Peru, areas of yellow fever endemicity overlap areas of malaria endemicity. CDC recommends vaccination for all travelers aged ≥9 months going to areas with a risk for yellow fever transmission (see Sec. 2, Ch. 5, Yellow Fever Vaccine & Malaria Prevention Information, by Country). Peru does not require proof of yellow fever vaccination for entry.

ENVIRONMENTAL HAZARDS & RISKS

Altitude Illness & Acute Mountain Sickness

Travelers who visit Cusco (3,339 m; ≈11,000 ft), Machu Picchu (2,430 m; ≈8,000 ft), Lake Titicaca (3,812 m; ≈12,500 ft), or who go hiking or climbing in the Andes Mountains (e.g., Huascarán [6,768 m; ≈22,200 ft] in the Cordillera Blanca range) are at risk for altitude illness and acute mountain sickness. See Sec. 4, Ch. 5, High Elevation Travel & Altitude Illness, for details regarding altitude illness and its medical management.

Animal Bites & Rabies

Although rabies is endemic among dogs and wild animals (bats and others) in Peru, preexposure prophylaxis is generally not recommended

except for adventure travelers, veterinarians working in-country, or people planning on spending time in the open wilderness. Travelers should not approach or pet unknown animals. Although rabies vaccine is widely available in Peru, rabies immune globulin is not; thus, CDC recommends emergency return home or evacuation to the nearest destination that can deliver appropriate postexposure prophylaxis for anyone bitten or scratched by a potentially rabid animal (see Sec. 5, Part 2, Ch. 18, Rabies). Medical evacuation insurance can cover the cost of emergency travel (see Sec. 6, Ch. 1, Travel Insurance, Travel Health Insurance & Medical Evacuation Insurance).

Climate & Sun Exposure

Beach time in Peru brings the risk for sun exposure. Sun exposure is also a risk during visits to high mountain peaks and the Amazon rainforest. Travelers should bring and use sunscreen, but sunscreen is available for purchase in Peru. Travelers to areas where sunscreen and insect repellent are both needed should apply sunscreen first, then repellent, and avoid combination products because these are not as effective (see Sec. 4, Ch. 1, Sun Exposure).

SAFETY & SECURITY

As a norm, Peruvians are friendly and try their best to accommodate newcomers. That said, tourists are easy prey for petty criminals. Travelers should always go out with a group or tour guide. In addition, travelers should avoid carrying large sums of money, keep their money in a secure pocket (not a purse), and show only small amounts of cash at a time. Most restaurants and major venues accept major credit cards. Whenever possible, travelers should make advance arrangements and payments.

Travelers also should make certain they are in safe company when drinking Pisco Sour (20%–30% alcohol content), the traditional drink of Peru.

Crime

Major crime is common in Peru but is a domestic problem; tourists are not normally implicated. Urge travelers to stay with a group or chaperone. Drug trafficking or consumption is illegal. Marijuana, in small amounts and with

a prescription (which must be locally obtained or validated) is allowed for medicinal purposes. Ayahuasca, a hallucinogenic preparation, is commonly offered to tourists in Peru. The ayahuasca rituals are not illegal, but the safety and regulations for recreational use have not been established. Travelers taking psychoactive medications (e.g., antidepressants) who try ayahuasca could be at increased risk for adverse outcomes; consultation with a physician knowledgeable about potential drug interactions is advised.

Political Unrest

Peru is a Republic with a democratic government. The political situation is very fragile, however, and can change at any moment. Travelers should avoid getting involved in activism or political discussions (see Sec. 4, Ch. 11, Safety & Security Overseas).

Terrorism

Peru experienced a long period of terrorism during the 1980s and 1990s. The groups involved have been mostly defeated or have retreated to small cells in isolated areas of the country not normally visited by travelers.

Traffic-Related Injuries

Travelers should not drive in Peru. Roads are treacherous and traffic rules loosely followed. Travelers should avoid hailing informal taxicabs and instead opt to make a reservation through the hotel or tour guide. Tipping cab drivers is not customary and will identify travelers as tourists.

Advise travelers to always wear a seat belt in vehicles. When on foot, travelers should pause to make certain traffic has stopped completely before stepping into the street.

AVAILABILITY & QUALITY OF MEDICAL CARE

Peru has a mixed public and private health care system. Travelers who need health care should access the private system of clinics (*clínicas privadas*) located throughout Lima and the major cities; lists of these clinics are available from hotels that cater to tourists or the US Embassy in Peru (<https://pe.usembassy.gov>). Private clinic personnel usually understand English well, and many of their doctors have received part of their training in the United States. Treatment is relatively inexpensive, and most credit cards are accepted. Purchasing medication in Peru can be challenging; counterfeit medication is sold, and some medicines might not be available or could have different or unrecognizable names (see Sec. 6, Ch. 3, *perspectives*: Avoiding Poorly Regulated Medicines & Medical Products During Travel).

Travelers visiting friends or relatives should identify health care sources through their local acquaintances.

Medical Tourism

Peru is not a common destination for medical tourism. Medical tourism is not recognized or regulated by the local medical college, which makes it both dangerous and illegal.

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PART 3: ASIA

BURMA (MYANMAR)

Wai Yan Aung

DESTINATION OVERVIEW

Burma (also called Myanmar) offers travelers a mix of traditional and modern culture. Nearly all visitors to this country come to see the classic golden temples of Rangoon (Yangon), Burma's former capital and its largest city. Visitors also enjoy strolling colonial-era parks and shopping at Bogyoke Aung San Market. The city includes British, Chinese, and Indian influences. Travelers wanting a glimpse of rural life can do so with a short ferry ride across the Yangon River to Dala, or by riding the circle train that makes a loop just north of the city.

Many travelers take advantage of the improving domestic air and bus service to explore other parts of the country. International flights to Mandalay are available from neighboring China, Singapore, and Thailand. Burma's varied geography includes highlands, plains, beaches, and >800 islands. Several climate zones are found along its river basins and mountain ranges.

The people of Burma are diverse—the country has 135 officially recognized ethnic groups speaking >100 different languages. Of the country's >56 million people, about two-thirds can speak or understand Burmese. English is widely spoken in popular visitor destinations, where travelers often remark on the hospitality and generosity of their hosts.

Religious sites and ancient cities, with their temples and festivals, attract many visitors to Burma. Unique architecture and heritage combine at places like Bagan, Bago, Kyaiktiyo Pagoda, and Mrauk U. Travelers can easily arrange outdoor activities (e.g., boating, cycling, trekking) around

Inle Lake, Hsipaw, or Kalaw in hilly Shan State, home to a thrilling train ride across the Goteik viaduct. River cruises along the Ayeyarwady begin or end in Mandalay (Map 10-11). Meditation retreats are also widely available.

INFECTIOUS DISEASE RISKS

Travelers to Burma should be up to date on routine vaccines, including diphtheria-tetanus-pertussis, hepatitis A, measles-mumps-rubella (MMR), polio, and varicella (chickenpox). Influenza exhibits a seasonal pattern that peaks during June–September, overlapping with the typical rainy season; influenza vaccine is recommended for travelers.

Bloodborne Pathogens

The prevalence of hepatitis B infection in Burma has been estimated as low to intermediate. Hepatitis B vaccination is especially crucial for anyone engaging in activities that increase their chances of exposure to blood or body fluids (e.g., people who might use injection drugs, those traveling to provide or receive medical care, and people who plan to get a tattoo or engage in condomless sexual contact). For more details, see Sec. 5, Part 2, Ch. 8, Hepatitis B.

Enteric Infections & Diseases

Local dishes such as *mohinga* (rice noodles in fish soup), curries, and salads appeal to many visitors. Travelers should observe safe food and water precautions, however, especially in secondary towns and in rural areas, where cleanliness during food preparation, utensil washing, and safe waste disposal might be lacking or not practiced. See Sec. 2,



MAP 10-11 Burma (Myanmar)

Ch. 6, Travelers' Diarrhea, and Sec. 2, Ch. 8, Food & Water Precautions, for additional recommendations. Tap water in Burma is considered not safe for drinking.

CHOLERA

Burma last reported cholera data to the World Health Organization (WHO) for 2016. Nonetheless, WHO believes Burma to be a country that remains at risk for the disease. For a list of countries reporting active cholera transmission, see the Centers for Disease Control and Prevention (CDC) Travelers' Health website (<https://wwwnc.cdc.gov/travel/diseases/cholera#areas>). For recommendations regarding use of cholera vaccine in international travelers, see Sec. 5, Part 1, Ch. 5, Cholera.

HEPATITIS A

As in much of Asia, hepatitis A virus is endemic to Burma (Sec. 5, Part 2, Ch. 7, Hepatitis A). Travelers can reduce their risk for hepatitis A infection by following safe food and water precautions (see Sec. 2, Ch. 8, Food & Water Precautions) and by getting vaccinated before travel.

OPISTHORCHIASIS

Opisthorchiasis—caused by *Opisthorchis viverrini*—has long been endemic in the Greater Mekong subregion in Southeast Asia. Although information on human liver fluke infection in Burma has not been published until very recently, data now show that *O. viverrini* human infection is prevalent in 3 southern regions of the country, Bago, Mon, and Yangon. Risk to most travelers is likely low but is increased among people who eat raw or undercooked freshwater fish (see Sec. 5, Part 3, Ch. 10, Liver Flukes).

TRAVELERS' DIARRHEA

Travelers' diarrhea is common among visitors to Burma. Instruct travelers to follow safe food and water precautions by eating food that is thoroughly cooked and served hot, avoiding raw or undercooked foods, and drinking only boiled or bottled water. Oral rehydration solution is helpful in cases of moderate to severe diarrhea and is usually available in pharmacies. Although visitors

can receive treatment from clinics or hospitals in major cities, consider prescribing antibiotics for travelers to carry for self-treatment of moderate to severe diarrhea (see Sec. 2, Ch. 6, Travelers' Diarrhea).

TYPHOID FEVER

Typhoid fever is common in Burma. Although only limited data are available on the prevalence of drug-resistant typhoid infections in Burma, studies conducted in Rangoon demonstrate a high prevalence of first-line antimicrobial drug resistance in other bacterial infections, suggesting the same could be true for typhoid. Typhoid vaccine is recommended for travel to Burma (see Sec. 5, Part 1, Ch. 24, Typhoid & Paratyphoid Fever).

Respiratory Infections & Diseases

AVIAN INFLUENZA

Live bird markets, common in Burma, can be a source of avian influenza virus (see Sec. 5, Part 2, Ch. 12, Influenza). Travelers should avoid visiting bird markets and poultry farms, and other places where live birds are raised, kept, or sold, and avoid preparing or eating raw or undercooked poultry products.

CORONAVIRUS DISEASE 2019

For current information on coronavirus disease 2019 (COVID-19) in Burma, consult the US Embassy in Burma website (<https://mm.usembassy.gov/>). For the US government's COVID-19 international travel requirements and recommendations, see www.cdc.gov/coronavirus/2019-ncov/travelers/international-travel/index.html. All travelers going to Burma should be up to date with their COVID-19 vaccines (www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html).

TUBERCULOSIS

In 2019, WHO ranked Burma among the 20 countries with the highest tuberculosis (TB) burdens in the world, with a total of 181,000 cases (range 119,000–256,000) and an incidence of 338 TB cases per 100,000 population. Both multidrug-resistant and extensively drug-resistant TB have

been reported in Burma. Overall, however, risk to travelers is low.

Sexually Transmitted Infections & HIV

The prevalence of HIV among people ≥15 years old living in Burma is 0.6%. According to the most recent official estimates ([www.who.int/docs/default-source/searo/myanmar/hiv-aids-\(english\).pdf](http://www.who.int/docs/default-source/searo/myanmar/hiv-aids-(english).pdf)), ≈220,000 people in Burma were living with HIV in 2017; ≈66% were receiving antiretroviral therapy (ART). More recent (unpublished) estimates are that as of late 2020, ≈240,000 people were living with HIV, almost 83% of whom were receiving ART. Advise travelers on correct and consistent use of external or internal latex condoms to reduce the risk for HIV infection and other sexually transmitted infections with any new sex partners (see Sec. 9, Ch. 12, Sex & Travel, and Sec. 11, Ch. 10, Sexually Transmitted Infections). Good quality condoms are widely available for purchase in Burma, both at local pharmacies and at grocery stores.

Soil- & Waterborne Infections

LEPTOSPIROSIS

Leptospirosis (see Sec. 5, Part 1, Ch. 10, Leptospirosis) is common in Burma and most often occurs during the rainy season. Risk for contracting leptospirosis is associated with participating in outdoor activities (e.g., kayaking, rafting, swimming, wading) that bring people in contact with contaminated freshwater sources.

SCHISTOSOMIASIS

A low risk for schistosomiasis exists in Bago Region, and in Rakhine and Shan states (including Inle Lake). Widespread distribution is presumed in the Ayeyarwady Delta, and travelers should avoid bathing, swimming, wading, or other contact with freshwater in this region (see Sec. 5, Part 3, Ch. 20, Schistosomiasis).

Vectorborne Diseases

CHIKUNGUNYA, DENGUE & ZIKA

Vectorborne diseases endemic to Burma include chikungunya, dengue, and Zika (see the respective disease chapters in Section 5). Risk for

chikungunya and dengue exists throughout Burma; peak transmission occurs during the rainy season, May/June–October. Because of the risk for birth defects in infants born to people infected with Zika during pregnancy, people who are pregnant or trying to become pregnant should review the most recent recommendations available on the CDC Travelers' Health website (<https://wwwnc.cdc.gov/travel/page/zika-information>).

JAPANESE ENCEPHALITIS

Japanese encephalitis (JE) is presumed to be endemic throughout Burma, and travelers should take precautions to avoid mosquito bites (see Sec. 4, Ch. 6, Mosquitoes, Ticks & Other Arthropods). Consider recommending JE vaccine for travelers who will be in country for >1 month or whose itineraries include higher-risk activities (e.g., spending substantial time in rural areas; participating in outdoor activities like camping, farming, or hiking; staying in accommodations without air conditioning, window or door screens, or mosquito nets). See Sec. 5, Part 2, Ch. 13, Japanese Encephalitis, for more details.

MALARIA

Malaria is endemic in all areas of Burma below 1,000 m (≈3,300 ft) elevation, including the ancient capital city of Bagan. Malaria incidence in Burma exceeds that of neighboring countries in the Greater Mekong subregion and is concentrated in and around forested areas. Chloroquine- and mefloquine-resistant malaria has been and continues to be a concern, and chemoprophylaxis recommendations vary accordingly. For malaria prevention recommendations, see Sec. 2, Ch. 5, Yellow Fever Vaccine & Malaria Prevention Information, by Country, and Sec. 5, Part 3, Ch. 16, Malaria.

ENVIRONMENTAL HAZARDS & RISKS

Animal Bites

RABIES

Among the >150 countries reporting cases of rabies, Burma has an increasing number of dog bites and one of the highest rates of disease. Rabies vaccination is recommended for travelers

participating in outdoor activities (e.g., camping, caving) that could increase their risk of animal bites. Vaccination is also recommended for travelers working with animals (e.g., veterinarians), people taking long trips or moving to Burma, and young children, for whom it can be difficult to prevent interaction with dogs or other animals (see Sec. 5, Part 2, Ch. 18, Rabies). Rabies immune globulin is available at tertiary and international hospitals in Burma for postexposure prophylaxis.

SNAKES

Snake species in Burma vary by location. Many snakes are non-venomous; others are only mildly venomous and not particularly dangerous to humans. A few snakes are highly venomous, however, and their bites are potentially lethal. Estimates of >10,000 snakebites and >1,000 snakebite deaths are reported each year in Burma, which has one of the highest rates of venomous snakebites in the world.

Burma produces antivenom specific for Russell's viper (*Daboia russelii*) and cobra venom. These locally produced products are more effective than imported products not specific for Burma's indigenous snake species. Most local hospitals in Burma are stocked with antivenoms. Advise travelers to seek medical attention immediately if bitten.

In addition, educate travelers that snakebites are preventable and avoiding snakes is key. Travelers should not aggravate or provoke snakes. When walking through brushy areas or undergrowth, travelers should wear tall boots to protect their legs; using a flashlight at night also can be helpful. Travelers should avoid sleeping on the ground; advise those who do to use a well-tucked-in mosquito net.

Climate & Sun Exposure

Climate in Burma varies depending on season and elevation. During the dry months, November–February, Rangoon and southern Burma average 80°F (27°C) during the day, but farther north, nighttime temperatures can drop to 45°F–50°F (8°C–10°C).

Hot season, March–May, and rainy season, May/June–October, are appropriately named. Average high temperatures during the hot

season can exceed 95°F (35°C) in many parts of the country, including popular tourist destinations like Rangoon and central Burma (Bagan and Mandalay). Prolonged heat exposure poses a risk for various forms of heat-related illness, especially for travelers in poor physical condition, very old or very young travelers, people participating in strenuous activities, and those unaccustomed to heat (see Sec. 4, Ch. 2, Extremes of Temperature). During periods of high heat, travelers should seek shade, drink ample water, and wear lightweight, loose-fitting, light-colored clothing. Sunscreen products are widely available for purchase (see Sec. 4, Ch. 1, Sun Exposure).

Natural Disasters

Flooding is always a possibility during the rainy season in Burma, and various regions are prone to flash floods.

SAFETY & SECURITY

Political Unrest

Since February 2021, after a military coup in Burma, political unrest and anti-coup protests have occurred throughout the country. Travelers to Burma should register with the Department of State's Smart Traveler Enrollment Program (STEP; <https://step.state.gov/step>).

Traffic-Related Injuries

Vehicular crashes are a leading cause of injury and death among travelers (see Sec. 8, Ch. 5, Road & Traffic Safety). Remind people visiting Burma to use only reputable taxi or public transportation companies and to always wear seat belts. Motorcycles account for a high percentage of road traffic deaths and should be avoided. Pedestrians and bicyclists are also common victims of road traffic deaths and should exercise caution; right-of-way rules and infrastructure improvements (e.g., bike lanes, crosswalks) to protect these groups are often not in place or not followed. When sidewalks are not available, travelers should walk on the side of the road facing oncoming traffic. Advise anyone who plans to ride a bicycle in Burma to bring and wear a helmet.

AVAILABILITY & QUALITY OF MEDICAL CARE

Travelers with chronic medical conditions should not rely on being able to purchase or refill medications in Burma; counterfeit and substandard medications are common (see Sec. 6, Ch. 3, . . . *perspectives*: Avoiding Poorly Regulated Medicines & Medical Products During Travel).

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CHINA

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DESTINATION OVERVIEW

China, the world's most populous country (>1.4 billion people), is the fourth largest geographically, behind Russia, Canada, and the United States. Divided into 23 provinces, 5 autonomous regions, 4 municipalities, and 2 Special Administrative Regions (Map 10-12), China is home to diverse customs, languages, and topographies. The climate varies from tropical in the south to subarctic in the north, with wide variations between regions and seasons.

Hospitals providing an international standard level of care are located only in major cities like Mandalay and Rangoon; local treatment for acute severe injuries or chronic disease exacerbations can be suboptimal. Encourage travelers going to Burma to strongly consider purchasing medical evacuation insurance coverage (see Sec. 6, Ch. 1, Travel Insurance, Travel Health Insurance & Medical Evacuation Insurance).

The long history and varied natural beauty of China can be traced through its 56 UNESCO World Heritage sites, including the Forbidden City and Temple of Heaven, the Great Wall, the terracotta warriors of Xian, and the spectacular mountainous sanctuaries of the west. Recent additions include Quanzhou; Emporium of the World in Song-Yuan; Mount Fanjing in southwest China; the archeological ruins of Liangzhu City in the Yangtze River Delta; the migratory bird sanctuaries along the coast of the Bohai Gulf; the Tusi tribal domains in





MAP 10-12 China

western China; and the Grand Canal, the oldest (dating back to 468 BCE) and longest (1,115 miles; 1,794 km) man-made canal in the world.

In 2019, >145 million people visited China, and the number of outbound travelers reached nearly 155 million, 3 times more than in 2010. Tourism in China has grown at an extraordinary pace over the past decade, although the coronavirus disease 2019 (COVID-19) pandemic that began in 2020 has, as everywhere, drastically reduced both inbound and outbound travel. By early 2022, China's borders remained effectively closed to international tourism; domestic travel, however, had rebounded sharply, reaching (or even exceeding) 2019 levels. Domestic travelers have been flocking to the usual tourist destinations, including sightseeing in Beijing and the Great Wall, touring Shanghai, cruising the Yangtze River, and visiting the Huangshan (Yellow Mountain) site in Anhui Province (see Box 10-02 for a list of other popular tourist destinations).

Aside from tourism, increasing numbers of people travel to China to visit friends and relatives, to study, to adopt children, or to do humanitarian aid work. These non-tourist travelers might be at greater risk of becoming ill because they underestimate health hazards, are less likely to seek pre-travel advice, and are more likely to stay in local or rural accommodations. People traveling to China to adopt often worry about the health of the child (see Sec. 7, Ch. 5, International Adoption), sometimes neglecting their own health.

China has the world's second largest economy and more billionaires (658) than any other

country in the world. At the same time, per capita income is still below the world average, with wide disparity in wealth and development between the more urban east and the rural west. Health risks vary accordingly.

INFECTIOUS DISEASE RISKS

Travelers should be up to date on routine vaccinations, including seasonal influenza vaccine. Travelers also should be current on vaccines against diphtheria-tetanus-pertussis, measles-mumps-rubella, and varicella. China began a massive measles vaccination campaign in September 2010 that has decreased the number of reported measles cases; a brief resurgence occurred during 2013–2015, but high measles vaccination coverage has resulted in historically low numbers of measles cases since 2017. Nonetheless, a few travelers made news headlines by triggering outbreaks in their home countries after returning from China. The reported incidence of rubella has fallen, but availability of data is patchy. Cases of pertussis and varicella occur regularly.

Vaccine Quality & Availability in China

China is making considerable advances in vaccine production, working with established pharmaceutical companies in a joint venture approach or by developing and manufacturing vaccines locally. One example is the recent introduction of the Sinovac-CoronaVac COVID-19 vaccine produced by Sinovac Biotech Ltd., a Chinese biopharmaceutical company based in Beijing.

BOX 10-02 Popular tourist destinations in China

GUILIN: uniquely shaped limestone karst mountains, featured in paintings
HAINAN ISLAND: tropical beaches, luxury resorts
HARBIN: spectacular annual winter ice festival
HONG KONG: futuristic architecture, East-meets-West mystique
MACAU: giant modern casinos contrast with a fascinating Portuguese heritage
SICHUAN PROVINCE: home to China's iconic symbol, the giant panda (for more details, see Box 10-03)

TIBET: accessible by the world's highest railroad (maximum elevation 5,072 m; ≈16,600 ft)
YUNNAN PROVINCE: attractions include the Stone Forest outside Kunming, the historic cobblestone city of Lijiang, the Shangri-La valley, and the Tiger Leaping Gorge
ZHANGJIAJIE NATIONAL FOREST PARK (HUNAN PROVINCE): dizzying glass-bottomed canyon bridge, the tallest and longest glass bridge in the world; mountains inspired the setting for the movie *Avatar*

In the past, counterfeit and improperly stored vaccines were a major issue, but China has waged a robust response to recent vaccine scandals and these issues are now rare, at least in major urban areas. Vaccine shortages are, however, frequent. For example, meningococcal vaccines were in short supply in parts of China during 2017–2018, and as of late 2021, tetanus-diphtheria-pertussis (Tdap) vaccine for adults was not available anywhere on the mainland. Travelers should not assume they can complete an unfinished vaccination series once in China; thus, ensure that all travelers going to China are up to date with routine vaccination series before travel. By contrast, circumstances in Hong Kong are different; international vaccines are in use there and are generally available.

Bloodborne Pathogens

HEPATITIS B

Hepatitis B infection is endemic to China (see Sec. 5, Part 2, Ch. 8, Hepatitis B). Nearly one-third of the 350 million people worldwide infected with the hepatitis B virus reside in China. The Advisory Committee on Immunization Practices recommends hepatitis B vaccine for all US adults aged 19–59 years; hepatitis B vaccine should be considered for nonimmune travelers to China.

Enteric Infections & Diseases

BRUCELLOSIS

Brucellosis occurs in pastoral areas of China, particularly the northwest. Travelers should strictly avoid raw or unpasteurized milk products and undercooked meat products (see Sec. 5, Part 1, Ch. 3, Brucellosis).

HEPATITIS E

Hepatitis E is highly endemic in China and can be acquired by drinking untreated water, eating undercooked meats, or staying in areas with poor sanitation (see Sec. 5, Part 2, Ch. 10, Hepatitis E). Pregnant people in their third trimester are at particular risk for severe disease. Because no routine vaccine is available, advise travelers to practice good hand hygiene and to adhere to safe food and water precautions (see Sec. 2, Ch. 8, Food & Water Precautions).

POLIO

The Xinjiang Uygur Autonomous Region borders Pakistan, a polio-endemic country. Adults traveling to this region who will be working in health care facilities, humanitarian aid settings, or refugee camps should be vaccinated against polio, including a single lifetime booster dose of polio vaccine as an adult (see Sec. 5, Part 2, Ch. 17, Poliomyelitis).

TRAVELERS' DIARRHEA

The risk for travelers' diarrhea (see Sec. 2, Ch. 6, Travelers' Diarrhea) appears to be low in so-called "luxury" accommodations in China but moderate elsewhere. Travelers should adhere to safe food and water precautions, and strictly avoid undercooked fish and shellfish and (as noted previously) unpasteurized milk (see Sec. 2, Ch. 8, Food & Water Precautions).

Other than in Hong Kong, tap water is not safe to drink, even in major cities. Most hotels provide boiled or bottled water, and bottled water is readily available.

TYPHOID FEVER

Typhoid fever is not a significant risk in China's major urban areas. Consider vaccinating travelers planning visits to rural areas, adventure travelers, and travelers visiting friends and relatives. Advise them to adhere to safe food and water precautions.

Respiratory Infections & Diseases

CORONAVIRUS DISEASE 2019

Located in central China at the confluence of the Han and Yangtze rivers, Wuhan is a city of 11 million people and a major travel hub accessible by air, land, and water. On December 31, 2019, Chinese officials reported to the World Health Organization (WHO) an outbreak of unusual pneumonia cases linked to a seafood market there. The outbreak spread globally, and on March 11, 2020, WHO officially declared COVID-19 a pandemic.

In response to the outbreak, officials in China combined a swift and stringent lockdown of Wuhan and Hubei Province, with public health messaging, widespread testing, contact tracing, and isolation of all cases and quarantine of contacts. They also built several brand new,

full-service COVID-19 hospitals within a matter of days, and established a network of *fangcang* (makeshift) hospitals in public venues (e.g., convention centers, sports stadiums).

Patients with mild illness were isolated in these newly established facilities, thereby reducing the risk of infecting household members. Confirmed or suspected cases were required to be seen at a small number of government-designated fever clinics. Indoor mask-wearing was strictly enforced. Tracking mobile phone applications assigned users a color-coded QR code based on their risk for infection. A green QR code became mandatory for entry into many facilities including stores, restaurants, and public transportation.

As of early 2022, China had partially vaccinated >1 billion of its people using 1 of 6 locally produced vaccines. For current information on COVID-19 in China, consult the US Embassy & Consulates in China website (<https://china.usembassy-china.org.cn/>). For the US government's COVID-19 international travel requirements and recommendations, see www.cdc.gov/coronavirus/2019-ncov/travelers/international-travel/index.html. All travelers going to China should be up to date with their COVID-19 vaccines (www.cdc.gov/coronavirus/2019-ncov/vaccines/stay-up-to-date.html).

TUBERCULOSIS

China remains moderately endemic for tuberculosis (TB). Travelers can become infected through exposure to a person with active *Mycobacterium tuberculosis* infection. Consuming unpasteurized milk products poses a risk for infection with *Mycobacterium bovis*, another mycobacterium that can cause TB disease in people. For long-term travelers or travelers whose itineraries place them at increased risk for exposure, consider pre-departure TB testing with retesting upon their return home. For more details, see Sec. 5, Part 1, Ch. 22, Tuberculosis, and Sec. 5, Part 1, Ch. 23, . . . *perspectives*: Testing Travelers for *Mycobacterium tuberculosis* Infection.

Sexually Transmitted Infections & HIV

Sexually transmitted infections (STIs), including chlamydia, gonorrhea, HIV, and syphilis, are a

growing problem in China, particularly along the booming eastern seaboard. Drug-resistant gonorrhea is increasingly prevalent. Make travelers aware of STI risks and the importance of using condoms when having sex with anyone whose HIV or STI status is unknown. As previously noted, travelers also should receive hepatitis B vaccination before travel.

Soil- & Waterborne Infections

SCHISTOSOMIAS & LEPTOSPIROSIS

Although eradication programs have been quite successful, schistosomiasis (see Sec. 5, Part 3, Ch. 20, Schistosomiasis), primarily due to *Schistosoma japonicum*, continues to be reported in various areas, including the Yangtze and Mekong River basins. Advise travelers to avoid freshwater swimming, which also decreases their risk of contracting the bacterial illness, leptospirosis (Sec. 5, Part 1, Ch. 10).

Vectorborne Diseases

CHIKUNGUNYA & DENGUE

Chikungunya has been reported in China, but the level of risk is not well quantified. Dengue, however, is known to be a more significant health risk (see Sec. 5, Part 2, Ch. 4, Dengue). In 2014, China experienced its worst dengue outbreak in decades; Guangdong province reported >40,000 cases in just 2 months. Dengue epidemics occur in China every 4–6 years, mostly in the southern provinces. Travelers should practice insect bite precautions during the summer months (see Sec. 4, Ch. 6, Mosquitoes, Ticks & Other Arthropods).

JAPANESE ENCEPHALITIS

Japanese encephalitis (JE) occurs in all regions of China except Qinghai, Xinjiang, and Xizang (Tibet) (see Table 5-13). China has successfully reduced the incidence of JE through vaccination and, as of 2008, included JE in its expanded national immunization program; JE remains a potential threat to unvaccinated travelers, however.

Although JE season varies by region, most cases occur in local residents during June–October. In addition to season of travel, the risk to travelers depends on their activities, destination, and duration of stay. JE vaccine is recommended for