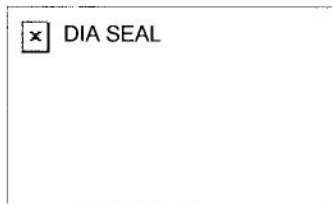


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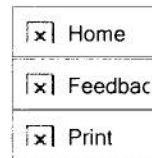
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Defense Intelligence Agency

Defense Intelligence Assessment



(U) Infectious Disease Risk Assessment: Afghanistan

August 2005

DI-1812-AFG-05

Information Cutoff Date: 19 August 2005

Key Judgments

- AFMIC assesses Afghanistan as **HIGH RISK** for infectious diseases. Without force health protection measures, mission effectiveness will be seriously jeopardized. [See map for comparison of overall disease risk worldwide.](#)
- **High Risk Diseases:** The main force health protection emphasis should be on these diseases, which are the most likely to degrade operations by affecting a large percentage of personnel, or by causing severe illness in a smaller percentage. High risk diseases are grouped into transmission categories that are prioritized in descending order of risk.

<u>Foodborne And Waterborne Diseases</u>	<u>Diarrhea - bacterial, Hepatitis A, Diarrhea - protozoal, Typhoid / paratyphoid fever</u>
<u>Vector-borne Diseases</u>	<u>Malaria</u>
<u>Animal-contact Diseases</u>	<u>Rabies</u>

- **Intermediate Risk Diseases:** These diseases also warrant force protection emphasis. They are less likely to degrade operations because they generally affect smaller numbers of personnel, or cause mild symptoms. Other intermediate risk diseases are those assessed to be present at unknown levels that, under conditions favorable for transmission, could degrade operations. See [Detailed Information on Intermediate Risk Diseases.](#)

Contents

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Maps

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Map of
Afghanistan

World Map of
Risk
Assessment

- **Low Risk Diseases:** Other militarily significant diseases that are likely to have a minimal impact on operational readiness. See List of Diseases of Low Risk or the Summary Table.

Appendix

- Organization of this Document
 - Key Definitions
 - AFMIC Risk Assessment Methodology
 - Diseases not covered in AFMIC Infectious Disease Risk Assessments
-

Foodborne And Waterborne Diseases of High Risk

Overview:

Sanitation is extremely poor throughout the country, including major urban areas. Local food and water sources (including ice) are heavily contaminated with pathogenic bacteria, parasites, and viruses to which most US service members have little or no natural immunity.

Effective disease surveillance does not exist within the country. Only a small fraction of diseases are identified or reported.

Diarrheal diseases can be expected to temporarily incapacitate a very high percentage of personnel within days if local food, water, or ice is consumed. Hepatitis A and typhoid fever can cause prolonged illness in a smaller percentage.

In addition, though not specifically assessed in this document, viral gastroenteritis (e.g., norovirus) and food poisoning (e.g., *Bacillus cereus*, *Clostridium perfringens*, *Staphylococcus*) may cause significant outbreaks.

The diseases of high risk are listed first, in descending order of expected impact. Diseases of intermediate risk, with a lower or unknown likelihood to degrade operations, are listed alphabetically in tabular form.

Diarrhea - bacterial

Risk Assessment:

- An extremely high attack rate (approaching 100% per month) could occur among personnel consuming local food, water, or ice. Field conditions (including lack of handwashing and primitive sanitation) may facilitate person-to-person spread and epidemics.
- Typically mild disease treated in outpatient setting; recovery and return to duty in less than 72 hours with appropriate therapy.

Risk Period: Year-round

Risk Distribution: Countrywide (including urban areas)

Typical Incubation Period: 1 to 3 days

Epidemiology Comments: In general, bacterial agents such as enterotoxigenic *E. coli*, *Campylobacter*, *Shigella*, and *Salmonella* are the most common causes of "traveler's diarrhea" wherever sanitary conditions are significantly below US standards.

Surveillance and Survey Data: Specific surveillance data for bacterial diarrhea cases are lacking; assessment of endemicity was based primarily on the nonexistent public health infrastructure to ensure safe food and water.

Hepatitis A

Risk Assessment:

- An operationally significant attack rate (potentially 1-10% per month) could occur among unvaccinated personnel consuming local food, water, or ice. Field conditions (including primitive sanitation and lack of handwashing) may facilitate person-to-

person spread and epidemics.

- Typical case involves 1 to 3 weeks of debilitating symptoms, sometimes initially requiring inpatient care; recovery and return to duty may require a month or more.

Risk Period: Year-round

Risk Distribution: Countrywide (including urban areas)

Typical Incubation Period: 28 to 30 days (maximum range: 15 to 50 days)

Epidemiology Comments: In non-indigenous personnel, hepatitis A typically occurs after consumption of contaminated food or water. Infection also may occur through direct fecal-oral transmission under conditions of poor hygiene and sanitation. Childhood hepatitis A infections tend to be asymptomatic or have mild symptoms, while adults typically develop jaundice and other symptoms. In areas where high levels of hepatitis A virus circulate, the number of reported cases in the local population is usually low because asymptomatic childhood infections confer lifelong immunity.

Surveillance and Survey Data: Specific surveillance data are lacking. Due to the nonexistent public health protection of food and water, most Afghans contract hepatitis A virus infection during childhood.

Diarrhea - protozoal

Risk Assessment:

- An operationally significant attack rate (potentially 1-10% per month) could occur among personnel consuming local food, water, or ice
- Symptomatic cases vary in severity, with most treated in an outpatient setting; severe cases may require 1-7 days of inpatient care, followed by return to duty.

Risk Period: Year-round

Risk Distribution: Countrywide (including urban areas)

Typical Incubation Period: 7 to 28 days (maximum range: 3 to 90 days)

Epidemiology Comments: In general, *Cryptosporidium* spp., *Entamoeba histolytica*, and *Giardia lamblia* are the most common protozoal causes of diarrhea wherever sanitary conditions are significantly below US standards.

Surveillance and Survey Data: Although surveillance data are very limited, amoebiasis infection rates up to 3 percent have been estimated for the general population. Giardiasis has been found in up to 11 percent of surveyed children.

Because specific surveillance data for protozoal diarrhea cases are lacking, assessment of risk was based, in part, on the nonexistent public health infrastructure to ensure safe food and water.

Typhoid / paratyphoid fever

Risk Assessment:

- An operationally significant attack rate (potentially 1-10% per month) could occur among unvaccinated personnel consuming local food, water, or ice.

- Debilitating febrile illness typically requiring 1-7 days of inpatient care, followed by return to duty.

Risk Period: Year-round; risk may be elevated during warmer months (usually May through October).

Risk Distribution: Countrywide (including urban areas); risk may be elevated in populated areas with poor sanitation.

Typical Incubation Period: 8 to 14 days (maximum range: 3 to 30 days)

Epidemiology Comments: Typhoid and paratyphoid are clinically similar, and in endemic areas typhoid typically accounts for 90 percent of cases. Asymptomatic carriers are common with typhoid and contribute to sustained transmission. In countries where hygiene and sanitation are poor or nonexistent, adult cases and outbreaks are rare because of immunity acquired in infancy or early childhood. In countries with a mixture of primitive and modern sanitation and hygiene, outbreaks of typhoid fever occur and may involve all age groups.

Surveillance and Survey Data: Specific surveillance data for typhoid cases are lacking; assessment of endemicity was based primarily on the nonexistent public health infrastructure to ensure safe food and water.

Human Outbreak Information: Though incomplete, reported outbreaks include:

- November 2002, Oruzgan Province: 140 deaths.
- 1997, Nazian (34-07-00N 070-48-00E): Outbreak occurred, according to UN reports.

Drug Resistance:

Based on data from Pakistan, *Salmonella paratyphi* resistant to fluoroquinolones likely occurs.

Foodborne And Waterborne Diseases of Intermediate Risk

Click on disease for additional information	Potential rates per month in the absence of countermeasures
Brucellosis	Rare cases could occur
Diarrhea - cholera	A small number (less than 1%)
Hepatitis E	Risk present, level unknown

Vector-borne Diseases of High Risk

Overview:

During the warmer months (typically March through November), the climate and ecological habitat support populations of arthropod vectors, including mosquitoes, ticks, and sand flies. Significant disease transmission is sustained countrywide, including urban areas.

Serious diseases are not recognized or reported due to the lack of surveillance and diagnostic capability.

Malaria is the major vector-borne risk in Afghanistan, capable of debilitating a high percentage of personnel for up to a week or more. In addition, other vector-borne diseases are transmitted at low or unknown levels, and may constitute a significant risk.

The disease of high risk is listed first. Diseases of intermediate risk, with a lower or unknown likelihood to degrade operations, are listed alphabetically in tabular form.

Malaria Details on assessment methodology

Risk Assessment:

- An operationally significant attack rate (potentially 1-10% per month) could occur among personnel exposed to mosquito bites
- Debilitating febrile illness typically requiring 1-7 days of inpatient care, followed by return to duty. Severe falciparum cases may require intensive care or prolonged convalescence, and fatalities can occur.

Agent/Subtype: 80-90 percent *P. vivax*, 10-20 percent *P. falciparum*

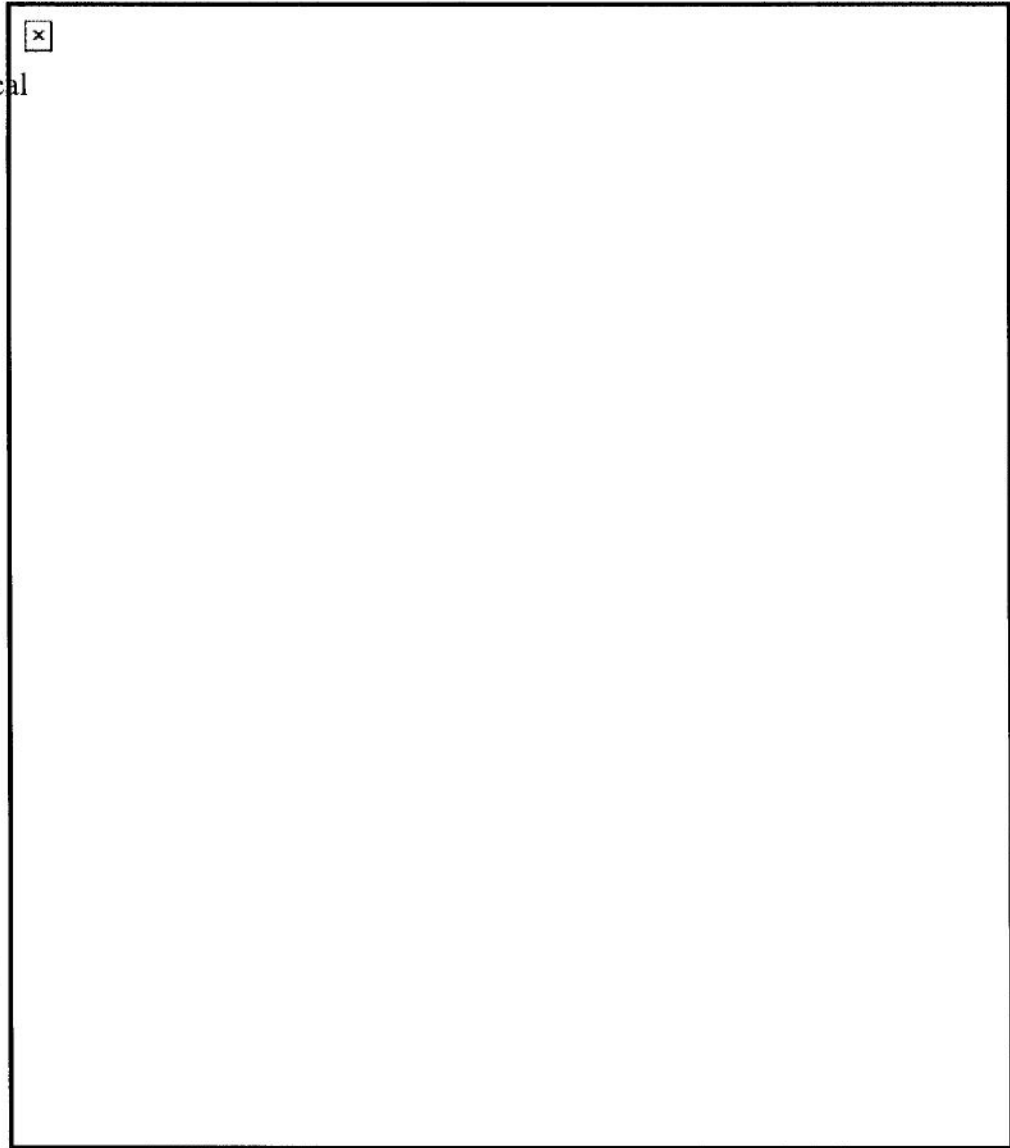
Risk Period: Seasonal (typically Mar through Nov); transmission generally is limited to the warmer months with seasonal variations dependent on elevation. The Ministry of Health reported in 2003 that malaria incidence exhibited a bimodal pattern, with *P. vivax* cases peaking in July-August and *P. falciparum* cases peaking in October each year.

Risk **Unclassified**

Distribution:

Countrywide
(including
urban
areas);
below 2,000
meters
elevation.
Active
malaria
transmission
occurs in
Kabul even
though
some areas
are above
2,000
meters.

However, abnormal meteorological conditions may trigger P. falciparum outbreaks at altitudes as high as 2,400 meters. A major determining factor for malaria in Afghanistan is the presence of paddy fields. Another important factor is the presence of huge arid areas surrounding ancient and well-developed irrigation systems. These irrigation systems are usually poorly maintained and provide opportunities for mosquito breeding.



(U) Afghanistan IDRA Map, May 2005 update

Typical Incubation Period: 7 to 14 days (maximum range: 7 to 30 days)

Epidemiology Comments: In areas where malaria transmission occurs at high levels, much of the indigenous adult population may be chronically infected but relatively asymptomatic due to partial immunity. Risk to susceptible non-indigenous populations may be high despite a low incidence of clinical cases in the indigenous population.

Vector Information: Transmitted by Anopheles spp., which typically bite at night, and breed in a variety of locations including streams, marshes, and lagoons, typically associated with rural environments.

Reservoir Information: Humans are the only important reservoir for malaria.

Surveillance and Survey Data: A 2001 World Health Organization (WHO) report classified Afghanistan as mesoendemic to hypoendemic in low lying areas and as non-malarious at higher altitudes.

The WHO estimated that 2 to 3 million clinical cases of malaria occurred in 1999, in a population of 12 million living in risk areas. An estimated 300,000 to 450,000 cases were due to *P. falciparum*. Countrywide, up to 40 percent of the population is infected.

Human Outbreak Information: An outbreak of *P. vivax* occurred in US forces operating in this region during OEF. Forty-two cases were confirmed between September 2002 and October 2003.

Though incomplete, reported outbreaks among the local populations include:

- 2003: Sporadic outbreaks reported, including an outbreak in Parvan Province that reportedly affected 30 percent of the population. Other provinces reporting outbreaks included Herat, Balkh, Faryab, Konduz, and Samangah.
- 2002: Sporadic outbreaks reported, including an outbreak in Badghis Province with more than 90 percent *P. falciparum* cases and an outbreak in Sar-e Pol Province (number of cases and deaths unspecified).
- September-November 2001: A primarily *P. falciparum* outbreak in Nangarhar Province in eastern Afghanistan (near Jalalabad) with more than 250 children hospitalized (numbers of deaths unknown); additional outbreak of *P. falciparum* in Konduz, with number of cases unknown.
- September 2000: 15 deaths (number of cases unknown) in Yakawlang district (elevation 2,400 meters) of Bamyan Province.

Drug Resistance Assessment:

- Chloroquine-resistant *P. falciparum* is assessed to occur at operationally significant levels
- Mefloquine-resistant *P. falciparum* has not been reported, and is assessed as unlikely to occur at operationally significant levels
- Doxycycline resistance has not been well studied, but is assessed as unlikely to occur at operationally significant levels
- Chloroquine-resistant *P. vivax* has not been reported, and is assessed as unlikely to occur at operationally significant levels

Drug Resistance Data:

A 2001 study found chloroquine resistance in up to 67 percent of *falciparum* cases in eastern areas.

Vector-borne Diseases of Intermediate Risk

The seasonality and geographic distribution of vector-borne diseases may vary considerably. Click on the disease for details

Click on disease for additional information	Potential rates per month in the absence of countermeasures
Crimean-Congo hemorrhagic fever	Rare cases could occur
Leishmaniasis - cutaneous	A small number (less than 1%)
Leishmaniasis - visceral	Rare cases could occur
Sand fly fever	Risk present, level unknown
Typhus - miteborne (scrub typhus)	Risk present, level unknown
West Nile fever	Risk present, level unknown

Animal-contact Diseases of High Risk

Rabies

Risk Assessment:

- Rabies risk is assessed as among the highest in the world; personnel bitten by potentially infected reservoir species are at high risk for developing rabies in the absence of appropriate prophylaxis. The circumstances of the bite should be considered in evaluating individual risk; bats or wild carnivores should be regarded as rabid unless proven otherwise.
- Very severe illness with near 100% fatality rate in the absence of post-exposure prophylaxis.

Risk Period: Year-round

Risk Distribution: Countrywide (including urban areas)

Typical Incubation Period: 21 to 56 days (maximum range: 9 to 180 days)

Epidemiology Comments: Rabies is transmitted by exposure to virus-laden saliva of an infected animal, typically through bites. Theoretically, transmission may occur by scratches contaminated with the saliva of a rabid animal or by the respiratory route in caves with large numbers of infected bats. Transmission by these routes is unlikely.

Reservoir Information: Worldwide, dogs, cats, and bats are principal sources of human exposure. Coyotes, foxes, jackals, marmosets, mongooses, raccoons, skunks, and wolves also may transmit infection to humans. Chipmunks, livestock, mice, opossums, rabbits, rats, and squirrels also can be rabies-infected but rarely, if ever, transmit infection to humans.

Surveillance and Survey Data: In 2002 the World Health Organization reported that approximately 400 people a month were bitten by dogs suspected of having rabies.

From March to April 2001 in Kabul, more than 80 people were attacked by rabid dogs.

Animal Surveillance and Survey: Rabies is reportedly a major public health problem in Afghanistan. Rabies-infected dogs are extremely common.

Human Outbreak Information: Though incomplete, human rabies reporting includes:
- May to June 1999, Ghazni and Kabul Provinces: An epizootic resulted in hundreds of human cases, most from dog bites.

Animal-contact Diseases of Intermediate Risk

Click on disease for additional information	Potential rates per month in the absence of countermeasures
Anthrax	Rare cases could occur
Q fever	Risk present, level unknown

Other Diseases of Intermediate Risk

Click on disease for additional information	Potential rates per month in the absence of countermeasures
Sexually Transmitted Diseases	
Gonorrhea / chlamydia	Potentially 1-50%
HIV/AIDS	Rare cases could occur
Hepatitis B	Rare cases could occur
Water-contact Diseases	
Leptospirosis	Risk present, level unknown
Respiratory Diseases	
Tuberculosis Tuberculin skin test (TST) conversion rates may be elevated over baseline for personnel with prolonged close exposure to local populations	

List of Diseases of Low Risk

Meningococcal meningitis

Administrative Notes

Prepared by: (b)(3):10 USC 424,(b)(4)

This report contains information as of 19 August 2005.

This publication supersedes Infectious Disease Risk Assessment: Afghanistan, DI-1812-AFG-05, dated February 2005, which should be destroyed.

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Limited Value ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 High Value

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