



INTERNATIONAL ASSOCIATION
FOR MEDICAL ASSISTANCE
TO TRAVELLERS

IAMAT

World Immunization Chart

Required and recommended immunizations for all countries, and specific immunizations for selected groups of travellers and persons on working assignments.

Status as at March 15, 2010

Canada: 1287 St. Clair Avenue West, Toronto, Ontario M6E 1B8
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World Immunization Chart

Status as at March 15, 2010

Afghanistan	Y6δ, V4: RI, PO3, HA8, TF8 SV: C9, HB36, PL13, RA16	Botswana	Y6γ, V4: RI, HA8, TF8 SV: HB36, PL13, RA16	Cook Islands	V2: RI, HA8 SV: HB36
Albania	Y6γ, V4: RI, HA8, TF8 SV: HB36	Brazil	Y35, V4: RI, HA7, TF7 SV: PL13, RA16	Costa Rica	Y6β, 42, V4: RI, HA8, TF7 SV: RA16
Algeria	Y6γ, V4: RI, HA8, TF8 SV: RA16	Brunei Darussalam	Y6γ, 30, V4: RI, HA8, TF8 SV: HB36, JE37	Côte d'Ivoire	Y5γ, V4: RI, PO3, HA8, M29, TF8 SV: C9, HB36, RA16
American Samoa	V4: RI, HA8, TF8 SV: HB36	Bulgaria	V2: RI, HA8, TF8 SV: HB36	Croatia	V1, RI SV: TBE20
Andorra	V1, RI	Burkina Faso	Y5γ, V4: RI, PO3, HA8, M29, TF8 SV: C9, HB36, RA16	Cuba	V1, RI
Angola	Y5γ, V4: RI, PO3, HA8, TF8 SV: C9, HB36, PL13, RA16	Burundi	Y5γ, V4: RI, HA8, TF8 SV: C9, HB36, RA16	Cyprus	V2: RI, HA7 SV: HB36
Anguilla	Y6γ, RI	Cambodia	Y6δ, V4: RI, HA8, TF8 SV: JE37, PL13, RA16	Czech Republic	V1, RI SV: TBE20
Antigua and Barbuda	Y6γ, RI	Cameroon	Y5γ, V4: RI, HA, M29, PO3, TF8 SV: C9, HB36, RA16	Denmark	V1, RI
Argentina	Y14, V4: RI, HA7, TF7 SV: RA16	Canada	V1, RI SV: HB25, L18	Djibouti	Y6γ, V4: RI, HA8, M29, TF8 SV: HB36, RA16
Armenia	V2: RI, HA8, TF8 SV: HB36, PL13, RA16	Canary Islands	V1, RI	Dominica	Y6γ, RI
Australia	Y6γ, 30, RI SV: HB24, JE37	Cape Verde	Y6γ, V4: RI, HA8, TF8 SV: HB36	Dominican Republic	V2: RI, HA8, TF7 SV: HB36
Austria	V1, RI SV: TBE20	Cayman Islands	V1, RI	East Timor	Y6γ, V2: RI, HA8, TF8 SV: JE37
Azerbaijan	V2: RI, HA8, TF8 SV: HB36, PL13, RA16	Central African Republic	Y5γ, V4: RI, PO3, HA8, M29, TF8 SV: HB36, RA16	Ecuador	Y6γ, 10, V4: RI, HA8, TF8 SV: PL13, RA16
Azores	V1, RI	Chad	Y6δ, 8c, V4: RI, PO3, HA8, M29, TF8 SV: C9, HB36, RA16	Egypt	Y6γ, 31, V4: RI, HA8, TF8 SV: HB36, RA16
Bahamas	Y6γ, RI	Chile	V2: RI, HA7, TF7	El Salvador	Y6γ, V4: RI, HA8, TF8 SV: RA16
Bahrain	Y6γ, V4: RI, HA8, TF8	China – Mainland	Y6δ, V4: RI, HA8, TF8 SV: C9, HB36, JE37, PL13, RA16, TBE20	Equatorial Guinea	Y6δ, 8c, V4: RI, HA8, TF8 SV: HB36, RA16
Bangladesh	Y6γ, V4: RI, HA8, PO3, TF8, RA16 SV: HB36, JE37	– Macao	V2: RI, HA8, TF8 SV: HB36	Eritrea	Y6δ, V4: RI, HA8, M29, TF8 SV: HB36, RA16
Barbados	Y6γ, RI	– Hong Kong	V2: RI, HA8, TF8 SV: HB36	Estonia	V1, RI SV: TBE20
Belarus	V2: RI, HA7, TF7 SV: TBE20, RA16	– Taiwan	V2: RI, HA8, TF8 SV: HB36, JE37	Ethiopia	Y6γ, 8c, V4: RI, PO3, HA8, M29, TF8 SV: HB36, RA16
Belgium	V1, RI	Christmas Island	Y6γ, 30, RI	Falkland Islands	V1, RI
Belize	Y6γ, V4: RI, HA8, TF8 SV: RA16	Colombia	Y6γ, 38, V2: RI, HA8, TF8 SV: RA16	Faroe Islands	V1, RI
Benin	Y5γ, V4: RI, PO3, HA8, M29, TF8 SV: C9, HB36, RA16	Comoros	V2: RI, HA8, TF8 SV: C9, HB36	Fiji	Y6γ, V4: RI, HA8, TF8 SV: HB36
Bermuda	V1, RI	Congo (Republic of)	Y5γ, V4: RI, HA8, TF8 SV: C9, HB36, RA16	Finland	V1, RI SV: TBE20
Bhutan	Y6δ, V4: RI, HA8, TF8 SV: HB36, RA16	Congo, Dem. Rep.	Y5γ, V4: RI, PO3, HA8, TF8 SV: C9, HB36, PL13, RA16	France	V1, RI
Bolivia	Y6γ, 41, V4: RI, HA8, TF8 SV: C9, PL13, RA16			French Guiana	Y5γ, V4: RI, HA8, TF8
Bosnia and Herzegovina	V1, RI				

French Polynesia	V2: RI, HA8, TF8 SV: HB36
Gabon	Y5γ, V4: RI, HA8, TF8 SV: HB36, RA16
Gambia	Y6γ, 8ε, V4: RI, HA8, M29, TF8 SV: C9, HB36, RA16
Georgia	V2: RI, HA8, TF8 SV: HB36, PL13, RA16
Germany	V1, RI SV: TBE20
Ghana	Y5β, V4: RI, PO3, HA8, M29, TF8 SV: C9, HB36, RA16
Gibraltar	V1, RI
Greece	V1, RI SV: HB36
Greenland	V1, RI SV: HB26
Grenada	Y6γ, RI
Guadeloupe	Y6γ, RI
Guam	V2: RI SV: HB36, JE37
Guatemala	Y6γ, V4: RI, HA8, TF8 SV: C9, RA16
Guinea	Y6γ, 8ε, V4: RI, PO3, HA8, M29, TF8 SV: C9, HB36, RA16
Guinea-Bissau	Y5γ, V4: RI, HA8, M29, TF8 SV: C9, HB36, RA16
Guyana	Y6δ, 8ε, 44, V4: RI, HA8, TF8
Haiti	Y6δ, V4: RI, HA8, TF8 SV: HB36, RA16
Honduras	Y6γ, V4: RI, HA8, TF8 SV: RA16
Hungary	V1, RI SV: TBE20
Iceland	V1, RI
India	Y6α, 45, V4: RI, PO3, HA8, TF8, RA16 SV: C9, HB36, JE37, PL13
Indonesia	Y6β, V4: RI, HA8, TF8 SV: HB36, JE37, PL13, RA16
Iran	Y6δ, V2: RI, HA8, TF8 SV: C9, HB36, PL13, RA16
Iraq	Y6δ, V4: RI, HA8, TF8 SV: C9, HB36, PL13, RA16
Ireland	V1, RI
Israel	V1, RI
Italy	V1, RI
Jamaica	Y6γ, RI
Japan	V1, RI SV: JE37
Jordan	Y6γ, V4: RI, HA8, TF8 SV: HB36, RA16
Kazakhstan	Y6δ, V4: RI, HA8, TF8 SV: HB36, PL13, RA16
Kenya	Y6γ, 8ε, V4: RI, PO3, HA8, TF8 SV: C9, HB36, PL13, RA16
Kiribati	Y6γ, V4: RI, HA8, TF8 SV: HB36
Korea, North	Y6γ, V2: RI, HA8, TF8 SV: HB36, JE37, RA16
Korea, South	V2: RI, HA8, TF8 SV: HB36, JE37, RA16
Kuwait	V2: RI, HA8, TF8
Kyrgyzstan	V2: RI, HA8, TF8 SV: HB36, RA16
Laos	Y6δ, V4: RI, HA8, TF8 SV: HB36, JE37, PL13, RA16
Latvia	V1, RI SV: TBE20
Lebanon	Y6α, V4: RI, HA8, TF8 SV: HB36
Lesotho	Y6β, V4: RI, HA8, TF8 SV: HB36, PL13, RA16

Liberia	Y5γ, V4: RI, PO3, HA8, TF8 SV: C9, HB36, RA16
Libya	Y6δ, V4: RI, HA8, TF8 SV: PL13, RA16
Liechtenstein	V1, RI SV: TBE20
Lithuania	V1, RI SV: TBE20
Luxembourg	V1, RI
Macedonia	V1, RI
Madagascar	Y6δ, V4: RI, HA8, TF8 SV: C9, HB36, PL13, RA16
Madeira Islands	V1, RI
Malawi	Y6δ, V4: RI, HA8, TF8 SV: C9, HB36, PL13, RA16
Malaysia	Y6γ, 30, V4: RI, HA8, TF8 SV: HB36, JE37
Maldives	Y6γ, V4: RI, HA8, TF8
Mali	Y5γ, V4: RI, PO3, HA8, M29, TF8 SV: C9, HB36, RA16
Malta	Y6β, 19, RI
Marshall Islands	V2: RI, HA8, TF8 SV: HB36
Martinique	Y6γ, RI
Mauritania	Y6γ, 8ε, V4: RI, HA8, M29, TF8 SV: C9, HB36, RA16
Mauritius	Y6γ, RI
Mayotte & French Territorial Islands	V2: RI, HA8, TF8 SV: HB36
Mexico	V2: RI, HA8, TF7 SV: RA16
Micronesia, Federated States	V2: RI, HA8
Moldova	V2: RI, HA8, TF8
Monaco	V1, RI
Mongolia	V2: RI, HA8, TF8 SV: HB36, PL13, RA16
Montenegro	V1, RI
Montserrat	Y6γ, RI
Morocco	V2: RI, HA8, TF8 SV: RA16
Mozambique	Y6γ, V4: RI, HA8, TF8 SV: C9, HB36, PL13, RA16
Myanmar (Burma)	Y6δ, 12, V4: RI, PO3, HA8, TF8 SV: C9, HB36, JE37, PL13, RA16
Namibia	Y6γ, 11, 33, V4: RI, HA8, TF8 SV: HB36, PL13, RA16
Nauru	Y6γ, V4: RI, HA8, TF8 SV: HB36
Nepal	Y6δ, V4: RI, PO3, HA8, TF8 SV: HB36, JE37, PL13, RA16
Netherlands	V1, RI
Netherlands Antilles	Y6α, RI
New Caledonia	Y6γ, V4: RI, HA8, TF8 SV: HB36
New Zealand	V1, RI SV: HB23
Nicaragua	Y6γ, V4: RI, HA8, TF8 SV: RA16
Niger	Y5γ, V4: RI, PO3, HA8, M29, TF8 SV: C9, HB36, RA16
Nigeria	Y6γ, 8ε, V4: RI, PO3, HA8, M29, TF8 SV: C9, HB36, RA16
Niue	Y6γ, V4: RI, HA8, TF8 SV: HB36
Northern Mariana Islands	V2: RI, HA8 SV: HB36
Norway	V1, RI SV: TBE20
Oman	Y6γ, V4: RI, HA8, TF8 SV: HB36, RA16

Pakistan	Y6δ, 32ε, V4: RI, PO3, HA8, TF8, RA16 SV: HB36, JE37, PL13
Palau	V2: RI, HA8 SV: HB36
Panama	Y6γ, 34, V4: RI, HA8, TF8 SV: RA16
Papua New Guinea	Y6γ, V4: RI, HA8, TF8 SV: HB36, JE37
Paraguay	Y6δ, 8ε, 15, V4: RI, HA8, TF8 SV: RA16
Peru	Y21γ, V4: RI, HA8, TF8 SV: PL13, RA16
Philippines	Y6γ, V4: RI, HA8, TF8 SV: HB36, JE37, RA16
Pitcairn Island	Y6γ, RI
Poland	V1, RI SV: TBE20
Portugal	V1, RI
Puerto Rico	V1, RI
Qatar	V2: RI, HA8, TF8 SV: HB36
Réunion	Y6γ, RI, HA8 TF8
Romania	V2: RI, HA8, TF8 SV: HB36, TBE20, RA16
Russia	Y6β, V4: RI, HA8, TF8 SV: JE37, TBE20, RA16
Rwanda	Y5γ, V4: RI, HA8, TF8 SV: C9, HB36, RA16
Saint Helena	Y6γ, RI
St. Kitts and Nevis	Y6γ, RI
Saint Lucia	Y6γ, RI
Saint Pierre and Miquelon	V1, RI
Saint Vincent and the Grenadines	Y6γ, RI
Samoa	Y6γ, V4: RI, HA8, TF8 SV: HB36
San Marino	V1, RI
São Tomé and Príncipe	Y5γ, V4: RI, HA8, TF8 SV: C9, HB36
Saudi Arabia	Y6δ, V4: RI, PO46, HA8, M39, TF8 SV: HB36, RA16
Senegal	Y6δ, 8ε, V4: RI, HA8, M29, TF8 SV: C9, HB36, RA16
Serbia	V1, RI
Seychelles	Y6γ, 30, V4: RI, HA8, TF8
Sierra Leone	Y5δ, V4: RI, PO3, HA8, TF8 SV: C9, HB36, RA16
Singapore	Y6γ, 30, RI SV: HB36, JE37
Slovakia	V1, RI SV: TBE20
Slovenia	V1, RI SV: TBE20
Solomon Islands	Y6δ, V4: RI, HA8, TF8 SV: HB36
Somalia	Y6δ, 8ε, V4: RI, HA8, PO3, TF8 SV: C9, HB36, RA16
South Africa	Y6γ, V4: RI, HA7, TF7 SV: C9, PL13, RA16
Spain	V1, RI
Sri Lanka	Y6γ, V4: RI, HA8, TF8 SV: HB36, JE37, RA16
Sudan	Y6β, 8ε, 17, V4: RI, PO3, HA8, M29, TF8 SV: HB36, RA16
Suriname	Y6γ, 8ε, V4: RI, HA8, TF8 SV: RA16
Swaziland	Y6δ, V4: RI, HA8, TF8 SV: C9, HB36, RA16

Sweden	V1, RI SV: TBE20
Switzerland	V1, RI SV: TBE20
Syria	Y6δ, V4: RI, HA8, TF8 SV: HB36, PL13, RA16
Tajikistan	V2: RI, HA8, TF8 SV: HB36, RA16
Tanzania	Y6γ, 8ε, V4: RI, HA8, TF8 SV: C9, HB36, PL13, RA16
Thailand	Y6β, V4: RI, HA8, TF8 SV: HB36, JE37, RA16
Togo	Y5γ, V4: RI, PO3, HA8, M29, TF8 SV: C9, HB36, RA16
Tokelau	V2: RI, HA8 SV: HB36
Tonga	V2: RI, HA8 SV: HB36

Trinidad and Tobago	Y6γ, 43, RI
Tunisia	Y6γ, V4: RI, HA8, TF8 SV: RA16
Turkey	V2: RI, HA8, TF8 SV: HB36, RA16
Turkmenistan	V2: RI, HA8, TF8 SV: HB36, PL13, RA16
Turks and Caicos	Y6γ, RI
Tuvalu	V2: RI, HA8 SV: HB36
Uganda	Y6γ, 8ε, V4: RI, HA8, M29, TF8 SV: C9, HB36, PL13, RA16
Ukraine	V2: RI, HA7, TF7
United Arab Emirates	V2: RI, HA8, TF8 SV: HB36, RA16
United Kingdom	V1, RI
United States of America	V1, RI SV: HB27, L18, PL13

Uruguay	Y6δ, V4: RI, HA7, TF7
Uzbekistan	V2: RI, HA8, TF8 SV: HB36, RA16
Vanuatu	V2: RI, HA8, TF8 SV: HB36
Venezuela	Y40ε, V2: RI, HA7, TF7 SV: HB28, RA16
Vietnam	Y6γ, V4: RI, HA8, TF8 SV: HB36, JE37, PL13, RA16
Virgin Islands – British	V1, RI
Virgin Islands – U.S.A.	V1, RI
Wake Island	V1, RI
Yemen	Y6γ, V4: RI, HA8, TF8 SV: HB36, RA16
Zambia	Y22, V2: RI, HA8, TF8 SV: C9, HB36, PL13, RA16
Zimbabwe	Y6δ, V4: RI, HA8, TF8 SV: C9, HB36, PL13, RA16

Immunization Code

C = Cholera
HA = Viral hepatitis A (immune globulin or vaccine)
HB = Viral Hepatitis B
JE = Japanese encephalitis
L = Lyme disease
M = Meningococcal meningitis
PL = Plague

PO = Poliomyelitis
RA = Rabies
RI* = Routine Immunizations
SV = Selective vaccination/s (These apply only to specific groups of travellers or persons on specific working assignments).

T = Louse-borne typhus
TBE = Tick-borne encephalitis (central European encephalitis)
TF = Typhoid fever
V = Vaccination/s
Y = Yellow fever

α = A vaccination certificate is required for children over six months of age. †
β = A vaccination certificate is required for children over nine months of age.
γ = A vaccination certificate is required for children over one year of age.

δ = A vaccination certificate is required for children of all ages. †
ε = Vaccination is not advised for children under 9 months of age.

† Yellow Fever vaccination is not recommended for children under nine months of age. If travel is unavoidable and the child's physician considers vaccination unwise, ask for a certificate on the physician's own stationary stating the child's age being less than one year as a contraindication to vaccination. Although this is in accordance with World Health Organization resolutions, some countries may not honour such a certificate and the infant may be put under surveillance upon arrival.

* **Your trip is a good occasion for a reminder to keep your routine immunizations updated;** more than 80% of adults in developed countries have not maintained their immunization status. The following vaccinations are recommended for your protection and to prevent the spread of infectious diseases.

HEPATITIS A: All travellers should be vaccinated against this food and water transmitted world-wide occurring viral disease. An anti-HAV antibody test is advised for persons born before 1945 or in developing countries to determine immunity.

HEPATITIS B: This vaccine is now given routinely as a childhood immunization. Unvaccinated frequent travellers should receive this vaccine, possibly in combination with hepatitis A. The combined vaccine (3 doses) affords excellent long term protection for both viral diseases.

TETANUS-DIPHTHERIA (Tetanus-Diphtheria toxoids, adult type) booster, given in a single injection, is recommended for all adult travellers and children over seven years of age, regardless of destination. A primary series is required for those not previously vaccinated. (Boosters: every ten years).

POLIOMYELITIS: booster is recommended for all travellers to areas where Polio has not been eradicated: Afghanistan, India, Nigeria and Pakistan. A booster is also recommended for travellers to countries who reported cases of imported Polio: Angola, Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Democratic Republic of Congo, Ethiopia, Ghana, Guinea, Kenya, Liberia, Mali, Nepal, Niger, Sierra Leone, Somalia, Sudan,

Togo and Uganda. A primary series is necessary for those not previously or only partially vaccinated. Adults who have been fully vaccinated as children should receive a polio booster once only.

MEASLES vaccine is not required for persons born before 1963, who are regarded as immune as a result of previous illness or clinically inapparent infections when the organism circulated freely among the population before the advent of the vaccine. Unvaccinated adolescents and young adults with no documented history of measles infection should be vaccinated, since mass vaccination in the US, Canada and some other countries, interrupting transmission of the organism, makes them susceptible to the disease. If such persons become infected overseas, upon return they may cause outbreaks in schools, on University campuses and in other congregational places. Persons immunized before 1980 should receive a booster before travelling to developing countries.

MUMPS vaccine is indicated for adolescents and children approaching puberty. Adults born before 1957, can be considered immune as a result of previous illness or clinically inapparent infections acquired when the virus was widely circulating among the population before the availability of the vaccine. Unvaccinated

adults should receive the vaccine if they are travelling to under-developed areas.

RUBELLA vaccine is recommended for women of child-bearing age who are not immune (after blood testing for rubella antibodies) provided they are not pregnant. Women who are vaccinated under these conditions should be advised not to become pregnant for the 30 days following vaccination.

INFLUENZA vaccine is recommended yearly for persons over 50 years of age, and for those of any age suffering from chronic heart disease, emphysema, asthma, renal disorders, organ transplant recipients and immunosuppressed patients. Flu seasonal patterns in the Southern hemisphere are opposite to the Northern patterns, therefore, if the vaccine is not available for a traveller, influenza anti-viral drugs may be an option for high risk travellers.

PNEUMOCOCCAL vaccine is recommended, one time only, for the groups described above, since pneumonia, ear infections, or meningitis are more severe in such cases.

INFANTS AND CHILDREN must follow the recommended immunization schedule for diphtheria, tetanus, pertussis, poliomyelitis, measles, mumps, rubella and haemophilus B, meningitis, varicella and viral hepatitis B.

The recommendations for immunizations outlined in this document are intended as guidelines only. Your immunization needs depend on your health status, previous immunizations received, and your travel itinerary. Seek further advice from your physician or travel health clinic.

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- 1 = No vaccinations are required to enter this country.
- 2 = No vaccinations are required to enter this country. The vaccinations listed for this country are recommended for the traveller's protection.
- 3 = A poliomyelitis booster is indicated for this country (see RI*).
- 4 = The following vaccination/s listed for this country is/are recommended for the traveller's protection.
- 5 = A vaccination certificate is required on arrival from all countries.
- 6 = A vaccination certificate is required **only** for travellers coming from, or in transit through, infected countries. The vaccination requirement is imposed by this country for protection against the introduction of Yellow Fever since the vector *Aedes aegypti* is present in its territory.

The following countries are considered infected:
AFRICA – Angola, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Republic of the Congo, Democratic Republic of the Congo, Côte d'Ivoire, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Mali, Mauritania, Niger, Nigeria, Rwanda, São Tomé and Príncipe, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Togo, Uganda.
AMERICAS – Argentina, Bolivia, Brazil, Colombia, Ecuador, Guyana, French Guiana, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Venezuela.

- 7 = Vaccination is recommended when going outside the areas usually visited by tourists such as travelling extensively in the interior of the country (trekkers, hikers) and for persons on working assignments in remote areas.
- 8 = Vaccination is highly recommended for all travellers, for your own protection.
- 9 = Although Cholera is active in parts of this country, the risk of infection to travellers is low and vaccination is advised only for medical and rescue personnel working in endemic areas.

The best protection is to avoid potentially contaminated water and food. See IAMAT's 24 World Climate and Food Safety Charts describing the sanitary condition of water, dairy products, and food in 1440 cities. Meticulous food and water hygiene are essential when travelling in endemic areas.

Persons living and working in inadequate sanitary conditions and those with impaired defence mechanisms (deficient production of gastric acid due to surgery for duodenal or gastric ulcers), persons on antacid therapy, and users of cannabis (smoking marijuana reduces acid secretion of the stomach) are more susceptible to cholera infection. The World Health Organization announced in 1991 that Cholera vaccination certificates are no longer required by any country or territory.

- 10 = Yellow Fever vaccination is highly recommended for travellers, over nine months of age, entering the Amazonian provinces of Orellana, Morona Santiago, Napo, Pastaza, Sucumbios, and Zamora-Chinchipec. Nationals and residents leaving Ecuador are required to have certificates on their departure for a Yellow Fever infected country.

There is no risk of Yellow Fever transmission in the cities of Quito and Guayaquil, or the Galapagos Islands.

- 11 = Travellers on scheduled airlines whose flights have originated, or are in transit, from areas considered infected are not required to possess a certificate provided they have remained at the scheduled airport or in the adjacent town during transit.
- 12 = Nationals and residents leaving this country are required to have a vaccination certificate on their departure to a Yellow Fever risk area.
- 13 = Most travellers are not at risk from the Plague, however, persons who may be occupationally exposed to wild rodents (anthropologists, archaeologists, geologists, spelunkers) or hunters, hikers, and campers in endemic areas must avoid contact with rodents. Plague is mostly a zoonotic bacterial infection of rodents caused by *Yersinia pestis* and is transmitted to humans and animals through bites by infected fleas. Person to person infection can occur through respiratory secretions. Rapid diagnosis and treatment with antibiotics is imperative since untreated infection has a high mortality rate. The Plague vaccine is no longer commercially available. Geographical distribution of risk for each country is listed below.

Afghanistan: A small area of risk is present in the extreme northeastern part of Afghanistan.

Angola: Areas of risk are present in the southern part of Angola along the border with Namibia (middle third).

Armenia: Areas of risk are scattered throughout Armenia.

Azerbaijan: Areas of risk are scattered throughout Azerbaijan.

Bolivia: Risk is present along the border with Peru (middle third) north of Lake Titicaca (province of La Paz) and the Cordillera Oriental between the provinces of Cochabamba and Santa Cruz.

Botswana: Risk is present in the northern part of the country. An outbreak was reported in the district of Boteti.

Brazil: Risk is present in the northeastern part of Brazil in the states of Bahia, Ceará, and Paraíba. Localized risk is present in the area of Redonda (southern part of Minas Gerais).

Cambodia: Areas of risk are scattered throughout Cambodia.

China: Risk is present in the following provinces: Xinjiang, Heilongjiang, Jilin, the eastern part of Qinghai, the southern part of Gansu, Hunan and Jiangxi.

Congo, Dem. Rep.: areas of risk are present in the northeastern part of the country in the areas of Mts. Bleus (Haute Zaire) and Mts. Mitumba (Kivu). An outbreak occurred recently in the region of Ituri (Haute Zaire) around the towns of Bunia and Magagi.

Ecuador: known areas of risk are present in the southern part of the country in Loja province.

Georgia: Areas of risk are scattered throughout Georgia.

India: Known areas of risk are present in the states of Himachal Pradesh, the northern part of Uttar Pradesh, and the northwestern part of Tamil Nadu. Outbreaks have also occurred in the city of Surat in Gujarat and in Beed District in Maharashtra.

Indonesia: Risk is present on the island of Java, south of Surakarta.

Iran: Known areas of risk are present in the northwest of the country in the region around Manjil where the Talish Mountains meet the Elburz Mountains.

Iraq: Known areas of risk are present in the eastern part of Iraq, with a major focus of activity around Khanaqin.

Kazakhstan: Risk is present in the region of Gur'Yev on the northern shore of the Caspian Sea and in the Taldy Kurgan region south of Lake Balkash.

Laos: In recent years plague has been identified in Laos. No official details have been made available.

Kenya: Risk is present around Nairobi, the district of Machakos (Eastern Province), the region southward to the border with Tanzania, including the areas of Amboseli and Tsavo National Parks.

Lesotho: Risk is present in the western half of Lesotho.

Libya: Risk is present in the areas around Tobruk (northeastern part of the country) and in the areas around Sidra.

Madagascar: Areas of risk are present in the central highlands. Outbreaks have been reported from the provinces of Antananarivo, Antsiranan, Fianarantosa, Mahajanga and Toamasina.

Malawi: Risk is present along the border with Mozambique, Nsanje, Chikwawa and Ntchisi districts.

Mongolia: Areas of risk are scattered throughout Mongolia and outbreaks have occurred in the districts of Bayanhongor, Bayan-Olgii, Govi-Altai and Dzavhan.

Mozambique: Known areas of risk are present in the north of the country: Niassa, Tete and Zambezia provinces. Outbreaks have occurred in Mutarara district (Tete) and in Murumbala district (Zambezia).

Myanmar: Outbreaks have been reported from the districts of Magway, Mandalay and Sagaing in central Myanmar.

Namibia: Known areas of risk are present in the north (Etosha national park) and along the eastern border with Botswana and South Africa.

Nepal: Risk is present in the western part of the country.

Pakistan: Risk is present in northern Kashmir.

Peru: Risk is present in northern part of Peru in the Department of Cajamarca (Chota, San Miguel, and San Pablo provinces), La Libertad, Lambayeque, Piura (Ayabaca, Huancabamba, Piura provinces), and Ancash (southern part).

South Africa: Known areas of risk are present along the northern and western border with Lesotho and in the Mountain Zebra National Park north of Port Elizabeth.

Syria: Known areas of risk are present in the northern and eastern parts of Syria bordering Iraq.

Tanzania: Known areas of risk are present south of Lake Victoria (provinces of Shinyanga and Tabora) and along the eastern part of the border with Kenya (including Kilimanjaro area). Outbreaks have been reported from Lushoto and Tanga districts (Tanga Province).

Turkmenistan: A large focus of risk is present in the area east of the Caspian Sea.

Uganda: Areas of risk are present along the border with the Democratic Republic of the Congo and Sudan. Outbreaks have occurred in Nebbi District of Western Region, Auru District of Northern Region, and Masindi District (near Lake Albert).

USA: Known areas of risk are present in remote areas of Arizona (northeastern part), California (all areas bordering Nevada from Lake Tahoe to the Mexican border), Colorado (the central part of the state with scattered areas in the south bordering New Mexico), Idaho (areas bordering the southern part of western Montana and areas bordering Wyoming), Montana (southwest part), Nevada (northeastern part), New Mexico (the entire state), Oregon (all areas bordering California and Idaho), Texas (areas extending from the city of Lubbock to the border with New Mexico), Utah (scattered areas in the central and southern parts of the state), Washington (central and eastern parts of the state), Wyoming (the southern half and in the north around the Big Horn Mountains).

Vietnam: Risk is present in the central provinces from Da Nang and Quang Nam extending south to Lam Dong province. Outbreaks have occurred in G.A. Lai, Kon T.m., Lam Dong, and Phu-Khan provinces.

Zambia: Risk is present in the district of Namwala (Southern Province). The towns of Katengwa, Makobo, Chilala, and Kabulamwanda have reported outbreaks.

Zimbabwe: Risk is present in the western part of the country where outbreaks have occurred in the Lupane and Nkayi districts north of Bulawayo.

- 14 = IAMAT highly recommends Yellow Fever vaccination for all travellers over 9 months of age going to the provinces of Jujuy (departments of Ledesma, Santa Bárbara, San Pedro, and Valle Grande), Salta (departments of Anta, General San Martín, Orán, and Rivadavia), Formosa (all areas), Misiones (all areas), Chaco (department of Bermejo), Corrientes (departments of Berón de Astrada, Capital, General Alvear, General Paz, Itatí, Ituzaingó, Paso de los Libres, San Cosme, San Miguel, San Martín, and San Tomé). This recommendation includes visits to Iguazu Falls.
- 15 = A vaccination certificate is required for travellers leaving Paraguay for an endemic region (see list of countries under code 6). IAMAT's Yellow Fever recommendation is advised for all travellers over one year of age visiting rural and forested areas, including Iguazu Falls.
- 16 = In this country, where Rabies is a constant threat, the pre-exposure rabies vaccination (3 shots) is advised for persons planning an extended stay or on working assignments. Although this provides adequate initial protection, a person bitten by a potentially rabid animal will require 2 additional post-exposure inoculations. Children should be cautioned not to pet dogs, cats or other mammals. Any animal bite or scratch must be washed repeatedly with copious amounts of soap and water. Seek medical attention immediately.
- 17 = A vaccination certificate may be required from travellers leaving Sudan since part of the country is in the Yellow Fever endemic zone. IAMAT's Yellow Fever recommendation is advised for travellers over one year of age, especially those travelling south of 15° North latitude.
- 18 = Persons who have been bitten by a tick in a Lyme disease endemic area should seek medical attention. Studies have shown that a one time dose of 200mg doxycycline (adult dose) administered within 72 hours after exposure to the tick can prevent the development of the disease. Persons working in agricultural and forestry professions, or hiking and camping in high risk should use clothing treated with permethrin solution (available from Sawyer Products, Safety Harbour, FL 34695-0188). Use anti-tick measures such as long pants tucked into socks or boots, insecticidal sprays and daily checks for ticks when engaged in outdoor activities. **High risk areas in Canada:** Populations of infected ticks are established in parts of southern Ontario, the southeastern corner of Manitoba, areas along the

south shore of Nova Scotia and in British Columbia. Lyme disease does not seem to be very prevalent in Canada. The disease is often concentrated in specific regions that have large populations of deer or other wildlife. **High risk areas in U.S.A.:** Lyme disease has been reported from all continental states, except Alaska. High risk states are Connecticut, Delaware, District of Columbia, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Wisconsin. States with moderate to high risk are Arkansas, Indiana, Iowa, Kansas, Kentucky, Mississippi, Missouri, North Carolina, Oklahoma, Oregon, Virginia, West Virginia, Wyoming. See www.iamat.org for risk in Europe.

- 19 = If indicated on epidemiological grounds, children under nine months of age coming from infected areas are subject to surveillance or isolation.
- 20 = Vaccination is recommended for persons involved in recreational activities in forested areas (camping, hiking) or working in forestry occupations. Risk season: March to November.
 - Austria:** Risk is present in all forested areas of southern, eastern, and northern Austria (areas around Klagenfurt, Graz, Wiener Neustadt, Vienna, and Linz, extending to the border with Germany along the Danube River).
 - Belarus:** Risk is present in all forested areas bordering Poland.
 - China:** Risk is present in Heilongjiang province.
 - Croatia:** Risk is present in the forested areas north and east of Zagreb, extending to the borders with Slovenia and Hungary.
 - Czech Republic:** Risk is present in forested areas south and west of Prague, north of Brno, and the areas west of Plzen (Pilsen).
 - Estonia:** Risk is present in all wooded and forested areas with high risk along the Gulf of Finland, the southern border areas with Latvia and a large belt along the shores of Lake Peipus.
 - Finland:** Risk is present in forested areas along the coast of the Gulf of Finland from Kotka to the border with Russia, and all the islands south of Turku, including the Åland islands.
 - Germany:** Risk is present in forested areas around Karlsruhe, Pforzheim, Stuttgart, Tübingen, and in areas around Regensburg extending south to Landshut and to Passau on the border with Austria. Risk is also present in forested areas south of Rostock and Schwerin, west of Frankfurt am der Oder, west of Erfurt including the areas of Gotha and Eisenach, as well as the areas around Dresden and Zwickau.
 - Hungary:** Risk is present in forested areas extending from the Austrian border east to the outskirts of Budapest.
 - Latvia:** Risk is present in all wooded and forested areas of Latvia, including city parks.
 - Liechtenstein:** Risk is present in the area of Vaduz.
 - Lithuania:** Risk is present in the areas bordering Poland.
 - Norway:** Scattered areas of risk are present around Bergen.
 - Poland:** Risk is present in the northern part of the country extending from the forested areas around Gdansk south and eastward to the Russian border, including the areas around Białystok. Other areas of risk include forested lands around Warsaw, Łódź, and Łuków, and along the border with the Czech Republic and Slovakia south of Wrocław.
 - Romania:** Risk is present in forested areas in the western part of Romania.
 - Russia:** Risk is present in the western parts bordering Poland (Kalinigrad province) and throughout Siberia. The infection is also known as Russian Far Eastern Encephalitis.
 - Slovakia:** Note: Risk is present in all western and southern regions of Slovakia. A focus of risk is also present in the area of Povazská Bystrica.
 - Slovenia:** Risk is present in all forested areas of Slovenia.
 - Sweden:** Risk is present in an approximately 100km deep coastal strip extending from the area of Uppsala southwards to Kristianstad, including the archipelago around Stockholm and the islands of Gotland and Öland. Infection is also present in the wooded areas around Götterborg.
 - Switzerland:** Known areas of risk are present in the following cantons: Schaffhausen (Hallau, Osterfingen, Stein am Rhein), Zürich (Unter, Glatt, Egli, Elikon am Rhein, Ossingen, Rehin, Horgen), Graubünden (Grüsch, Seewis, Landquart), Bern (Erlenbach, Thun, Steffisburg, Spiez, Grosse Moos, Belp), and Luzern (Dagmersellen, Nebikon, Egolzwil and Santenberg area).
- 21 = IAMAT highly recommends Yellow Fever vaccination for all travellers over one year of age going to rural areas of Peru, especially jungle areas below 2300m / 7546ft in the Amazon Basin. Travellers only visiting Machu Picchu (2430m / 7972ft) and Cuzco (3300m / 10,827ft) do not need to be vaccinated.
- 22 = Travellers leaving Zambia may be required to possess a Yellow Fever vaccination certificate since part of the country (area west of 25° longitude, bordering Angola) is located within the formerly endemic Yellow Fever endemic zone. Vaccination is recommended for travellers going to this area.
- 23 = Due to the high rate of Hepatitis B carriers among the Maori population, vaccination is recommended for persons working in healthcare, education, or living in close contact with locals. This vaccine is often combined with the Hepatitis A vaccine and affords excellent long term protection for both viral diseases.
- 24 = Due to the high rate of Hepatitis B carriers among the Aboriginal population in the interior (mainly in the Warburton Creek area of central Australia), vaccination is recommended for persons working in healthcare, education, or living in close contact with locals. This vaccine is often combined with the Hepatitis A vaccine and affords excellent long term protection for both viral diseases.
- 25 = Due to the high rate of Hepatitis B carriers among the Inuit population in northern Canada, vaccination is recommended for persons working in healthcare, education, or living in close contact locals. This vaccine is often combined with the Hepatitis A vaccine and affords excellent long term protection for both viral diseases.
- 26 = Due to the high rate of Hepatitis B carriers among the Inuit population, vaccination is recommended for persons working in healthcare, education, or living in close contact with locals. This vaccine is often combined with the Hepatitis A vaccine and affords excellent long term protection for both viral diseases.
- 27 = Due to the high rate of Hepatitis B carriers among the local indigenous populations of Alaska, vaccination is recommended for persons working in healthcare, education, or living in close contact with locals. This vaccine is often combined with the Hepatitis A vaccine and affords excellent long term protection for both viral diseases.

- 28 = Due to the high rate of Hepatitis B carriers among the local Indigenous population of western Zulia state (on the border with Colombia) vaccination is recommended for persons working in healthcare, education, or coming in close contact with locals. This vaccine is often combined with the Hepatitis A vaccine and affords excellent long term protection for both viral diseases.
- 29 = Vaccination is advised for persons travelling extensively or on working assignments in the meningitis belt of Africa's northern Savannah. This semi-arid area extends from the Atlantic to the Red Sea. Peak season for transmission of the infection occurs in March and April.
- Benin:** The entire country is infected.
Burkina Faso: The entire country is infected.
Cameroon: The northern third of the country is infected.
Central African Republic: The northern half of the country is infected.
Chad: The southern half of the country is infected.
Côte d'Ivoire: The northern area bordering Mali and Burkina Faso.
Djibouti: Risk is present in the entire country.
Eritrea: Risk is present in the southeastern corner of the country.
Ethiopia: The entire country is infected.
Gambia: Risk is present in the entire country.
Ghana: The areas bordering Burkina Faso are infected.
Guinea: The entire country is infected.
Guinea-Bissau: The entire country is infected.
Mali: The southern half of the country is infected.
Mauritania: Risk is present in the southern third of the country.
Niger: The southern third of the country is infected.
Nigeria: The northern half of the country is infected.
Senegal: The entire country is infected.
Sudan: The southern two-thirds of the country is infected.
Togo: The entire country is infected
- 30 = A vaccination certificate is required from travellers over one year of age, who have stayed overnight or longer in a country with risk of Yellow Fever transmission within 6 days prior to arrival.
- 31 = In addition to the Yellow Fever endemic countries listed under code 6, Egypt also requires a certificate from travellers coming from the following formerly endemic countries: Zambia, Belize, and Panama.
- Air passengers in transit coming from infected countries or areas without a certificate will be detained in the precincts of the airport until they resume their journey. All travellers arriving from Sudan must possess a vaccination certificate or a location certificate issued by a Sudanese official stating that they did not visit the country south of the 15°N within the last 6 days.
- 32 = A vaccination certificate is required for children of all ages, but infants under six months of age are exempt if the mother's certificate shows that she has been duly vaccinated prior to the birth of the child.
- 33 = Children under one year of age coming from infected areas are subject to surveillance if indicated on epidemiological grounds.
- 34 = IAMAT highly recommends Yellow Fever vaccination for all travellers over one year of age going to the provinces of Darién (the indigenous region of Emberá), Panamá (eastern part, including the districts of Chepo, Chiman, and Balboa) and the indigenous region of Kuna Yala (formerly San Blas), Panama City and the Panama Canal Zone are risk free.
- 35 = IAMAT highly recommends vaccination for all travellers, over nine months of age, going to the following states and regions: Acre, Amapá, Amazonas, Federal District of Brasília, including the capital city of Brasília, Goiás, Maranhão, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Pará, Piauí, Rondônia, Roraima, Tocantins, rural areas of the western half of Bahia, northwest and west central parts of Rio Grande do Sul, western half of São

- Paulo, northern part of Espiritu Santo, western half of Santa Caterina, and the western half of Paraná. Vaccination is highly recommended for travellers visiting Iguazu Falls.
- 36 = Due to the high rate of Hepatitis B carriers in this country, vaccination is recommended for persons on working assignments in the health care field (dentists, physicians, nurses, laboratory technicians), or for those working in close contact with the local population (teachers, aid workers, missionaries), or persons foreseeing sexual relations with locals. This vaccine is often combined with the Hepatitis A vaccine and affords excellent long term protection for both viral diseases.
- 37 = Vaccination is recommended for persons travelling extensively in rural areas, living and working near rice growing rural and suburban areas, as well as other irrigated land where exposure to mosquitos transmitting the disease is high. Children are especially susceptible to the infection.
- Australia:** Risk is present all year on the Torres Strait Islands and Cape York peninsula.
Bangladesh: Sporadic cases are reported throughout Bangladesh. Transmission occurs from July to December.
Brunei Darussalam: From the scant data available on the infection in Brunei Darussalam, it is believed that transmission occurs all year as in neighbouring areas.
Cambodia: The infection is endemic throughout Cambodia. Transmission most likely occurs from May to October.
China: Cases have been reported from all provinces except Xinjiang (Tibet), Xinjiang, and Qinghai. Infection is most prevalent in central and eastern China, and is endemic in southern and southeastern China. Occasional outbreaks also have been reported throughout Taiwan. Transmission occurs from May to September in northern China and from April to October in southern China and Taiwan. Children under 15 years of age are at high risk.
East Timor: The infection is endemic and transmission occurs all year.
Guam: The last outbreak in Guam occurred in 1947/48, and in Saipan in 1990.
Hong Kong: Sporadic cases are reported. Period of transmission: all year.
India: Infection is present throughout India, however, data is incomplete. Transmission occurs from May to October in Goa; from October to January in Tamil Nadu; from August to December in Karnataka, with a second peak occurring from April to June in Mandya District; from September to December in Andhra Pradesh; and from July to December in northern India. Children under 15 years of age are at high risk.
Indonesia: Note: Sporadic cases are reported throughout Indonesia and transmission occurs all year. Children under 15 years of age are at high risk.
Japan: Outbreaks occur in western and southern Japan, especially on the islands of Kyūshū and Okinawa. Transmission occurs from June to October, and on Okinawa from April to December. The elderly are at high risk.
Korea, North: Outbreaks happen occasionally and transmission occurs from June to October.
Korea, South: Note: The infection is reported from all provinces, especially in the southwest. Transmission occurs from June to October. Children and young adults are at high risk.
Laos: The infection is endemic throughout Laos and transmission occurs all year.
Malaysia: Sporadic cases are reported throughout Malaysia and transmission occurs all year.
Myanmar (Burma): The infection is believed to be endemic and transmission occurs from May to October. Persons of all ages are at high risk.
Nepal: The infection is endemic in the southern plains bordering India (Terai Districts) and transmission occurs from June to January. Persons of all ages are at high risk.
Pakistan: Reports suggest that risk is present in the lower Indus valley and the Karachi area. Transmission occurs from June to January.
Papua New Guinea: Transmission occurs all year.
Philippines: Infection is present on all islands. Transmission occurs all year, with peaks from April to January.
Russia: Outbreaks occur occasionally in the southeast of Russia between the border with China and the Sea of Japan, with prevalence in the

- area of Vladivostok. The period of transmission is from June to October.
- Singapore:** Sporadic cases have been reported from the island and transmission occurs all year.
- Sri Lanka:** Sporadic cases occur throughout Sri Lanka with prevalence in the western part of the country. Transmission occurs all year. Children under 15 years of age are at high risk.
- Taiwan:** Occasional outbreaks occur throughout the country. Period of transmission: April to October
- Thailand:** Outbreaks occur mostly in the northern region (Chiang Mai valley) with sporadic cases reported from the areas of Sukhothai, the suburbs of Bangkok and Phitsnulok, as well as from the southern regions of the country. Transmission occurs from May to October in the north and all year in the south.
- Vietnam:** The infection is endemic throughout the country. Transmission occurs from May to October.
- 38 = IAMAT highly recommends Yellow Fever vaccination for all travellers over one year of age going to the following areas: The middle valley of the Magdalena River; the eastern and western foothills of the Cordillera Oriental which extends from the border with Ecuador to the border with Venezuela; the entire south-eastern part of the country, including the Amazon Basin; and all areas bordering Panama (northern part of Choco and Urabá).
- 39 = All Hajj pilgrims to Mecca, Umra visitors, and seasonal workers are required to possess a certificate of vaccination upon arrival issued not more than three years and not less than 10 days before the date of arrival. Non-pilgrim travellers may also be asked to show proof of vaccination during the yearly pilgrimage season. Persons without a certificate may be subjected to vaccination upon arrival.
- 40 = IAMAT highly recommends Yellow Fever vaccination for all travellers over one year of age going outside the areas usually visited by tourists, travelling extensively in the interior of the country (trekkers, hikers, bird watchers), and for persons on working assignments in remote areas.
- 41 = IAMAT highly recommends Yellow Fever vaccination for all travellers, over one year of age, going to the provinces of Beni, Cochabamba, Santa Cruz, and the subtropical areas of La Paz. The cities of La Paz and Sucre are risk free.
- 42 = Travellers under nine months or over 60 years of age, pregnant and breast-feeding women, persons with immuno-suppressed conditions, and persons who have experienced adverse effects to the Yellow Fever vaccine in the past, do not need a certificate.
- 43 = A Yellow Fever vaccination is recommended for all travellers over the age of nine months travelling to the island of Trinidad. Persons visiting only Tobago do not need to be vaccinated.
- 44 = In addition to the Yellow Fever endemic countries listed above (under Code 6), Guyana also requires a vaccination certificate from travellers coming from the following formerly endemic country: Belize.
- 45 = In addition to the Yellow Fever endemic countries listed above (under code 6), India also requires a certificate from travellers coming from Zambia, formerly a Yellow Fever endemic country. A vaccination certificate is also required for travellers coming from, or in transit through, an infected Yellow Fever area within six days prior to arrival.
- 46 = All travellers coming from Afghanistan, India, Nigeria and Pakistan, regardless of age and previous vaccinations, should receive 1 OPV dose six weeks before departure for Saudi Arabia. They also should receive 1 OPV dose at border entry points. All visitors under the age of 15 years coming from countries reporting imported polio cases (see list of countries under POLIOMYELITIS) must be vaccinated with OPV. Proof of vaccination 6 weeks prior to application is required for an entry visa. Upon arrival they will receive an additional OPV dose.

