

Temporary Notice: The new paradigm for Travax malaria maps is described in the pages below. Currently there are both new-format and older-style malaria maps in publication within Travax materials. Additional new maps are being released regularly, and the process will continue until all older-style maps have been replaced. Subscribers will be notified of newly released maps in the summary of updated Travax content. In the interim, the older-style maps will be maintained in the event that content revisions are necessary.

The colored shading scheme on Travax malaria maps is a clinical aid that portrays recommended traveler protection strategies geographically:

- **Darker colored shading:** The protective recommendation is chemoprophylaxis for **all** travelers (highest risk areas).
- **Lighter colored shading:** The protective recommendation is chemoprophylaxis for **some** travelers (moderate risk areas).
- **Gray stippled shading:** The protective recommendation is insect precautions only. These are areas where malaria transmission is reported to occur at negligible levels in local populations.
- **Non-shaded areas** represent areas where there is no reported evidence of malaria transmission.

Shading only represents the recommended protective action and does not correlate directly to a defined quantitative risk. For example, a region that is shaded with the darker color in a sub-Saharan African country will have much higher risk to travelers than a dark colored region in a South American country. The equal shading only means that the protective recommendation is the same in both locations: the degree of risk has surpassed the minimal benchmark for which chemoprophylaxis is recommended for all travelers.

Negligible risk areas: Insect precautions only

Gray stippled shading is used on the maps for areas where insect precautions are recommended but chemoprophylaxis is not, as risk is negligible for travelers. The use of gray shading instead of a color reinforces the recommendation that chemoprophylaxis is not needed for travel to such areas.

Moderate Risk Areas: *Issue for Medical Providers to Consider inset box*

In the Travax malaria mapping scheme, moderate risk areas are locations where chemoprophylaxis is recommended for some travelers based on factors including the characteristics of the itinerary, the characteristics of the traveler, and the traveler's aversion to risk. Medical providers should make their recommendation for these areas in consultation with the traveler based on an assessment of the factors. Key components of these factors are listed in the *Issues to Consider* inset box. Due to space limitations, the factors listed on the map itself are abbreviated. They should be understood as follows.

Factors favoring chemoprophylaxis

- *Adventure travel:* adventurous and other travelers without a set or planned itinerary, especially those with extensive outdoor exposure such as backpackers, campers, and hikers
- *Risk-averse travelers:* those who strongly prefer protective drugs even when risk may be below the usual threshold for chemoprophylaxis

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- *Vulnerable travelers*: those with underlying medical conditions and/or the potential for an especially adverse outcome from malaria (pregnant women, children, immune compromised individuals, or those with an underlying disease that could be intolerably exacerbated by malaria)
- *Immigrants visiting friends and relatives*: individuals and their families whose country of origin presents malaria risk, who have emigrated to a malaria-free country, and who are now returning to visit friends and relatives
- *Travel longer than 1 month*: malaria risk increases with the longer time of potential exposure
- *Unreliable availability of medical expertise at the destination and/or lack of appropriate and reliable treatment drugs*: travel to developing countries or other locations where the health care infrastructure would make malarial illness more problematic

Factors against chemoprophylaxis

- *Air-conditioned hotels only*: Overnight accommodations are with certainty in reliably air-conditioned hotels only
- *Urban areas only*: Travel restricted to urban areas of large cities
- *Non-transmission season*: Travel assuredly during non-transmission season (where seasonality is stated in the risk description)
- *Minimal nighttime exposure*: Minimal evening or nighttime exposure such as outdoor restaurants, unscreened windows, etc.
- *Travel shorter than 3 days*

“Rare Exceptions Apply”

- An example of a rare exception to the “Chemoprophylaxis for all travelers” recommendation would be an executive flying in to a high risk location for only a few hours with no evening exposure; chemoprophylaxis would not be recommended.
- An example of a rare exception to the “Insect precautions only” recommendation would be a traveler with an existing medical vulnerability for whom even an extremely low risk of malaria is unacceptable; chemoprophylaxis would be recommended.

City Symbols

In urban areas, malaria transmission and risk to travelers may be equal to or less than the level in the surrounding region. The indicated protective measures will vary accordingly and different symbols are used in the Key.

- A black-filled circle only appears in high or moderate areas and denotes the same recommendation as the region surrounding it. A black-filled circle in a high risk area means chemoprophylaxis is recommended for all travelers to that city. In a moderate risk area, it means chemoprophylaxis is recommended for some travelers, and the factors in the *Issues to Consider* inset box should be consulted.
- A gray-filled circle represents a city where insect precautions only are recommended.
- A white-filled circle with a black center-dot is used in the special situation where a city’s immediate outskirts present higher transmission and risk to travelers than the central urban areas of that city. The immediate outskirts may be poor, peri-urban sectors that sprawl into rural topography, or they may be transitional zones when the city is adjacent to jungle or forested terrain. This symbol indicates insect precautions only are recommended in central urban areas, but at the city outskirts the degree of risk should be considered the same as the surrounding

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region, whether high or moderate. As malaria is typically transmitted from dusk to dawn, the location of sleeping accommodations should also be considered.

- A white-filled circle represents a city with no evidence of malaria transmission.
- A star represents the national capital. White, black, gray, or white-with-center-dot corresponds to city levels above.

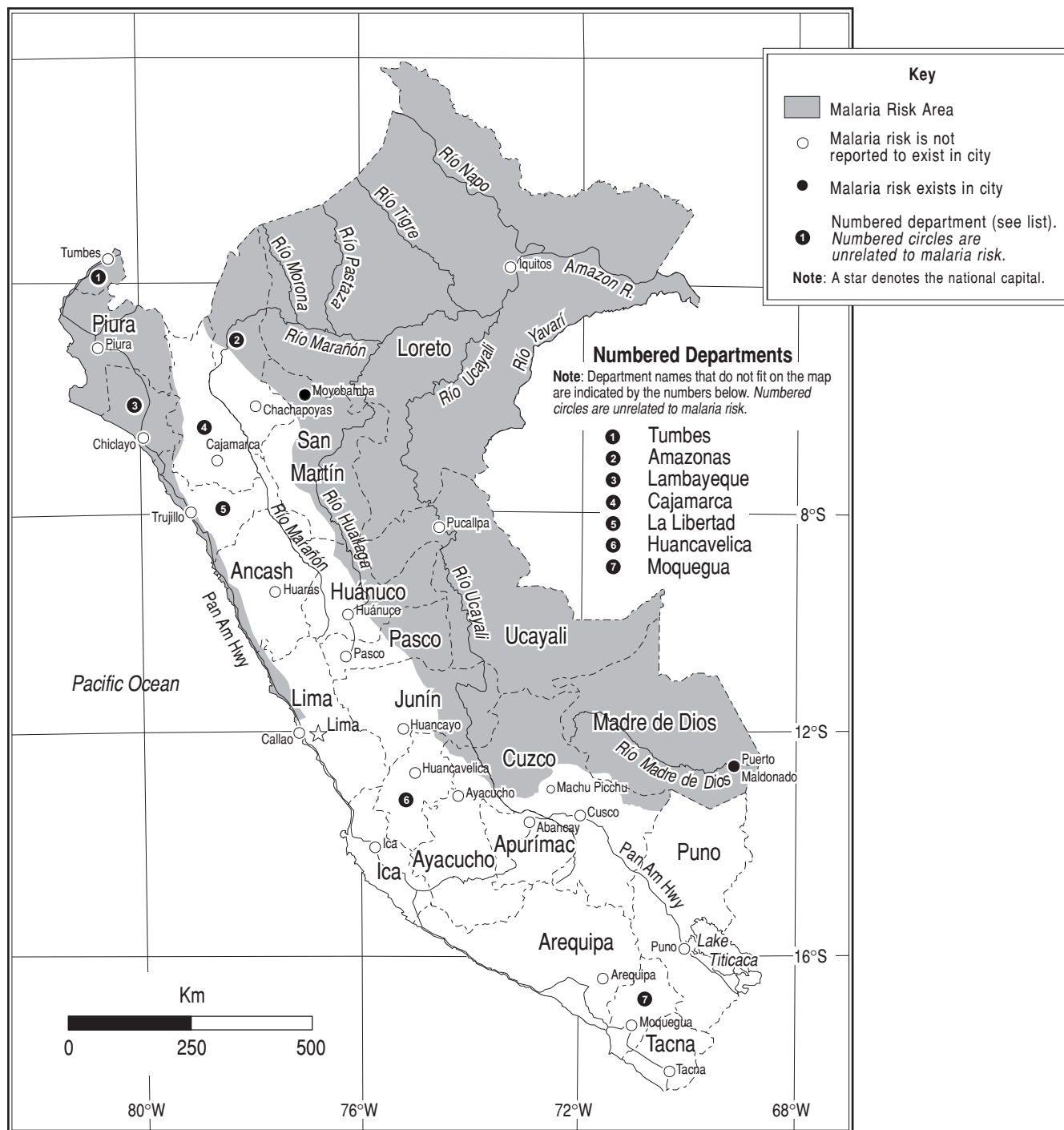
Towns and villages are considered rural in character, not urban. They are not displayed on Travax malaria maps, except in the case of small countries that have few or no actual cities. In those cases, city circles may be used to represent towns, and the same indications noted above apply for risk and protective measures in those towns.

Peru



Risk areas: Risk (84% *P. vivax*) exists throughout the year in nearly all rural areas below 2,000 meters (6,600 feet) except in the departments of Arequipa, Moquegua, Puno, and Tacna. Much of Peru is occupied by the Andes Mountains and is above 2,000 meters. Significant risk exists in the Amazon region and its tributaries, except there is no evidence of transmission in the central urban area of Iquitos city. The 23 highest risk districts are concentrated in the departments of Ayacucho, Junín, Loreto, Madre de Dios, and San Martín. Smaller cities in jungle areas are considered rural, not urban, in nature (e.g., risk exists in Moyobamba and Puerto Maldonado). There is no evidence of transmission in Lima city and vicinity, coastal areas south of Lima, or in the southern highland tourist areas of Ayacucho, Huancayo, Puno, Lake Titicaca, Cuzco city, Machu Picchu, any intermediate tourist points in the Urubamba Valley (the only route between Cuzco and Machu Picchu), or at altitudes above 2,000 meters.

Protective measures: Medicines that protect against malaria in this area include mefloquine, doxycycline, or atovaquone/proguanil (Malarone). Primaquine may be used in special circumstances (G6PD testing is required). The best drug for you depends on your itinerary and on a number of personal factors that should be discussed between you and your health care provider.



Peru



Shoreland's recommendation: Vaccination is recommended for persons over 9 months of age for travel to eastern and northern areas below 2,300 meters (7,500 feet). However, vaccination is not recommended for travel to urban or rural areas along the coast, in the far south, or to Andean highland destinations such as Cuzco city, Machu Picchu, any intermediate tourist points in the Urubamba Valley (the only route between Cuzco and Machu Picchu), Puno, Lake Titicaca, Arequipa, and Colca Canyon. Note: entry requirements may apply.

CDC: Vaccination is recommended for all travelers > 9 months of age traveling to the areas east of the Andes Mountains. Travelers who are limiting travel to the cities of Cuzco and Machu Picchu do not need vaccination. Peru recommends vaccination for those who intend to visit any jungle areas of the country < 2,300 m (< 7,546 ft.).

WHO: Yellow fever recommendation: recommended for those who intend to visit the jungle areas of the country below 2300m. Travelers who will only visit the cities of Cuzco and Machu Picchu do not need vaccination.

