

# EPIDEMIOLOGICAL BULLETIN

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## World Malaria Day 2023

World Malaria Day 2023 was marked under the theme "Time to deliver zero malaria: invest, innovate, implement" ..

World Malaria Day is observed annually on 25 April, to bring global attention to the efforts being made, to bring an end to malaria, and encourage action to reduce suffering and death from the disease.

### Global impact

Malaria is a life-threatening disease caused by parasites that are transmitted to people through the bites of infected female Anopheles mosquitoes. It is preventable and curable.

In 2020, there were an estimated 241 million cases of malaria worldwide. The estimated number of malaria deaths stood at 627 000 in 2020. In 2020, nearly half the world's population was at risk of malaria.

The WHO African region carries a disproportionately high share of the global malaria burden. In 2020, the region was home to 95% of malaria cases and 96% of malaria deaths. Children under 5 accounted for about 80% of all malaria deaths in the region.

There are six species of Plasmodium, the malarial parasite which is spread through the bite of the Anopheles mosquito:

*P. falciparum*

*P. vivax*

*P. ovale (wallickeri and curtisi)*

*P. malariae*

*P. knowlesi*

Of these, *P. falciparum* and *P. vivax* pose the greatest threat.

*P. falciparum* is the deadliest and predominant strain in Africa.

If untreated, *P. falciparum* can progress to severe illness and death within 24 hours.

*P. vivax* is the most widely geographically distributed parasite. *P. vivax* is dominant in other sub-tropical and tropical countries. There were between 5.9 and 7.1 million estimated cases of *P. vivax* malaria in 2019.

### The high risk population:

- Infants and children under the age of 5
- Pregnant women
- Immunocompromised people
- People with low immunity moving to intense malarial transmission areas (migrant workers, mobile populations, travelers)

### Clinical presentation

Fever, Headache, Chills. Onset is 10–15 days after the infective bite. It may be mild and difficult to recognize as malaria.

In severe cases: (WHO criteria)

Decreased consciousness, Significant weakness

Two or more convulsions, Low blood pressure (less than 70 mmHg in adults and 50 mmHg in children)

Breathing problems, Circulatory shock, Kidney failure or hemoglobin in the urine

Bleeding problems, or hemoglobin less than 50 g/L (5 g/dL)

Pulmonary edema, Blood glucose less than 2.2 mmol/L (40 mg/dL)

Acidosis or lactate levels of greater than 5 mmol/L



### Pathogenesis

Within 48 hours, *Plasmodium* can replicate from a single cell to 10,000 plus cells. During this replication, they destroy erythrocytes causing anemia and jaundice from the breakdown of hemoglobin and acidosis through the production of lactate dehydrogenase, which creates lactic acid. *Plasmodium* binds to cells by making them "sticky" and then enters the cell where it replicates asexually, first in the liver, where they are released into the blood stream as merozoites, and then in erythrocytes, where they form shizonts, which rupture the erythrocytes releasing the shizonts back into the bloodstream to infect new cells or to be taken back into a mosquito during a blood meal. *P. falciparum* can bind to endothelium in the brain to produce cerebral malaria, which is life-threatening. Typical malarial presentation can degenerate into a comatose state quickly (minutes to hours). In the long-term, survivors of cerebral malaria in childhood have shown increased risk of neurological and cognitive deficits, behavioral disorders, and epilepsy.

## Diagnosis

**Microscopy:** The global standard is identification of malarial parasites in blood films.

**Serology:** IFA or ELISA are used to measure past malaria experience, not current infections.

**Antigen detection:** Rapid diagnostic tests are useful where reliable microscopy is not available.

**Molecular diagnosis:** This is more accurate than microscopy but expensive and requires a specialist laboratory.

**Importance in travelers:** People who travel to malaria areas from outside of the country are at increased risk of contracting malaria through a lack of immunity to plasmodium. Travelers are often not aware of the risks, the importance of preventing bites, taking their prophylaxis properly, or of getting diagnosis and treatment promptly if they become ill. People who have moved from a malaria endemic area to a non-endemic area lose immunity. They are then at risk when they return to visit family or friends.

**Chemoprophylaxis** (Taking Malaria Prevention Tablets) It is important to discuss malaria tablet suitability with a travel clinic physician to ensure that it is suitable and appropriate for the destination(s).

Taking antimalarial tablets:

- Before arrival to malarial regions (2 to 3 weeks before).
- Regularly as directed.
- It is extremely important to continue taking antimalarial prophylaxis after return from travel as directed.

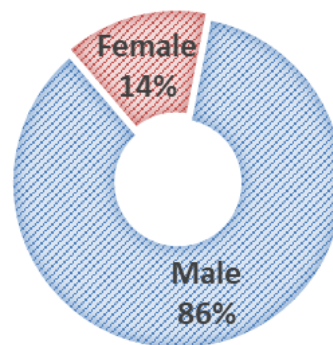
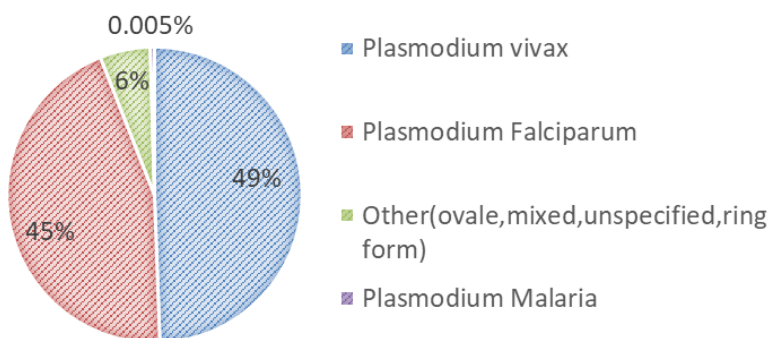
## Advice to the public to make the most of their visit to travel clinic services:

1. The Communicable Disease Centre recommends scheduling an early visit to the Travel clinic, ideally 4-6 weeks prior to departure.
2. It is important to decide about the desired travel destination before the clinic visit.
3. Ascertain the duration of the flight.
4. It is advisable for the companions of the traveler to also attend the clinic.
5. Consult the travel clinic doctor regarding the required vaccinations and medications, taking into account the travel destination, duration and planned activities
6. Contact the travel clinic immediately if you have any symptoms or health problems when you return home.

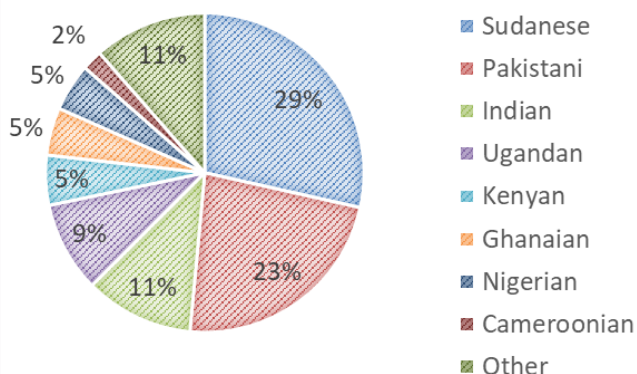
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## Imported Malaria cases - HMC 2022

### PLASMODIUM SPECIES- 2022 CASES



### PLASMODIUM CASES BY NATIONALITY



### PLASMODIUM CASES BY AGE GROUP 2022

