

## Burden of Typhoid in

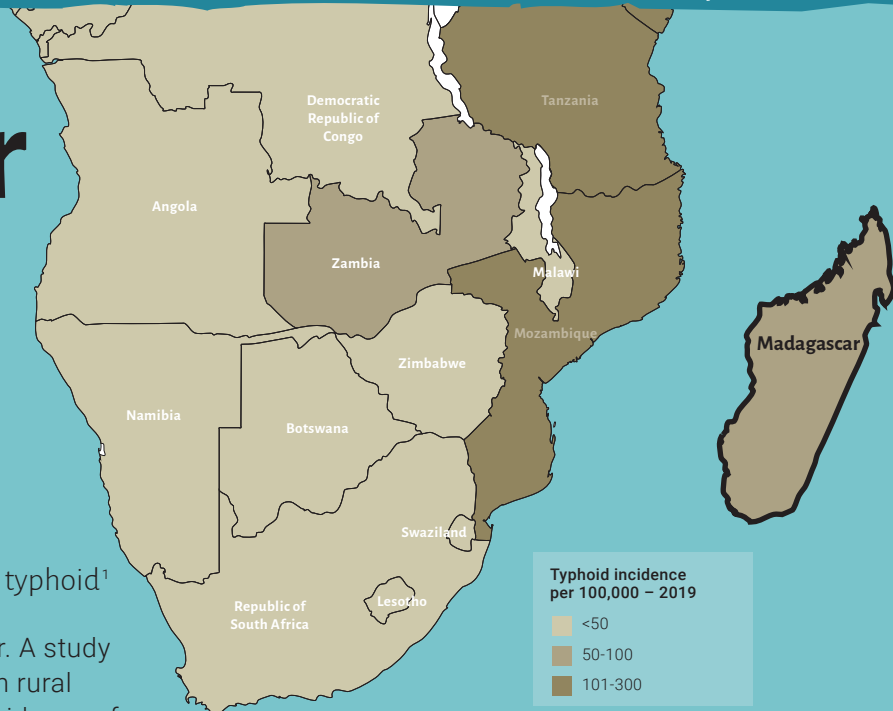
# Madagascar

Madagascar is a typhoid-endemic country. The Global Burden of Disease 2019 study estimated that Madagascar experienced at least:

**20,983** typhoid cases (79 cases per 100,000)  
**264** typhoid deaths  
**19,834** disability-adjusted **life-years lost** to typhoid<sup>1</sup>

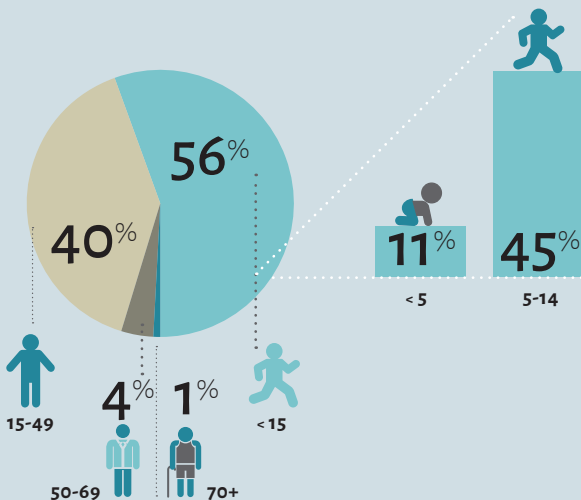
The country's true typhoid burden may be even higher. A study by the Typhoid Fever Surveillance in Africa Program in rural Imerintsiatosika, Madagascar, found an estimated incidence of 171 cases per 100,000.<sup>2</sup>

While typhoid is rarely fatal, the recovery is long and difficult. The disease steals time, money, and productivity from those infected and their families and is associated with numerous long-term complications.



Most typhoid cases in Madagascar occur in children **younger than 15 years old**.

### TYPHOID CASES IN MADAGASCAR BY AGE (2019)



### The risk of typhoid may be increasing in Madagascar.



Global data show that multidrug-resistant (MDR) typhoid prevalence has **increased dramatically since 1992**.<sup>3</sup> While only one drug-resistant typhoid isolate has been isolated in Madagascar,<sup>2</sup> drug-resistant typhoid has been extensively found in other East African countries.<sup>4</sup> Diseases such as typhoid do not respect borders, and as drug-resistant typhoid becomes more common, **it will likely spread to Madagascar**, forcing **the use of more expensive and less readily-available** treatment options.



Madagascar ranks **112<sup>th</sup> of 117 countries investigated for water, hygiene, and sanitation (WASH) performance**. 40% of the population practices open defecation and, in rural settings, only 35% of the population have access to water. This drastically increases risk of typhoid infections.<sup>5</sup>



Health-care-seeking behavior in Madagascar is often limited due to low availability of medical personnel and curative medicines at health-care facilities. Data show that severely sick people often remain at home as **families cannot afford transportation and health-care costs**.<sup>5</sup>



**Extreme weather events** like cyclones have become more frequent and intense in Southern Africa due to climate change, risking displacement, **further disruption to water and sanitation, and increased infections** such as typhoid. Recent storms such as Cyclone Ana, which landed in Madagascar, have highlighted these countries' vulnerability.

# Typhoid conjugate vaccines (TCVs) in Madagascar

The World Health Organization (WHO) recommends the introduction of prequalified TCVs be prioritized in countries with a high burden of typhoid disease or a high burden of drug-resistant typhoid. Support for introduction from Gavi, the Vaccine Alliance is available now. TCVs:



Are highly effective and safe for children as young as **6 months** of age;



Require a **single dose** to prevent 79-85% of typhoid cases in children;<sup>6</sup>



Offer strong protection for **at least 4 years**; and



Can be **co-administered** with measles vaccine.<sup>7,8</sup>

Findings from an economic analysis predict that, even in the absence of a Gavi subsidy, a catch-up campaign with TCV could be cost-effective in Madagascar.<sup>9</sup>

## Let's Take on Typhoid in Madagascar

- ✓ Typhoid is endemic in Madagascar, with more than **20,000** cases per year.
- ✓ Madagascar's burden of typhoid is most heavily borne by children **younger than 15** years of age.
- ✓ Data show a global increase in **drug-resistant typhoid**, which could spread to Madagascar.
- ✓ **TCVs** are safe, effective, and WHO-recommended for routine immunization as part of a cost-effective, integrated approach to typhoid prevention and control alongside safe water, sanitation, and hygiene interventions.
- ✓ **Gavi support** for TCV introduction is available **now**.

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