



TyphiNET Report for *Salmonella* Typhi

Tue Feb 18 2025 14:10

This report was generated at Tue Feb 18 2025 14:10, using TyphiNET (<https://www.typhi.net>), a data visualisation platform that draws genome-derived data on antimicrobial resistance and genotypes from Typhi Pathogenwatch (<https://pathogen.watch>), curated by the Global Typhoid Genomics Consortium (<https://www.typhoidgenomics.org>).

Source Data

TyphiNET data were last updated on 24 March 2024. For code and further details please see: (<https://github.com/typhoidgenomics/TyphiNET>).

TyphiNET presents data aggregated from >100 studies. Data for country Pakistan are drawn from studies with the following PubMed IDs (PMIDs) or Digital Object Identifier (DOI): 27069781, 25961941, 27703135, 32883020, 33704480, 33496224, 34370659, 31513580, 29216342, 34543095, 35750070.

Individual genome information, including derived genotype and AMR calls, sequence data accession numbers, and source information (PubMed ID for citation) can be downloaded as a spreadsheet from the TyphiNET website (<https://www.typhi.net>).

Variable definitions

The genotypes reported here are defined in Dyson & Holt (2021), J. Infect. Dis. (<https://doi.org/10.1093/infdis/jiab414>).

Travel-associated cases are attributed to the country of travel, not the country of isolation, Ingle et al. 2019, PLoS NTDs., (<https://doi.org/10.1371/journal.pntd.0007620>).

Antimicrobial resistance determinants are described in the Typhi Pathogenwatch paper, Argimon et al. 2021, Nat. Commun., (<https://doi.org/10.1038/s41467-021-23091-2>).

Abbreviations

1. MDR, multi-drug resistant (resistant to ampicillin, chloramphenicol, and trimethoprim-sulfamethoxazole)
2. XDR, extensively drug resistant (MDR plus resistant to ciprofloxacin and ceftriaxone)
3. Ciprofloxacin NS, ciprofloxacin non-susceptible (MIC ≥ 0.06 mg/L, due to presence of one or more *qnr* genes or mutations in *gyrA/parC/gyrB*)
4. Ciprofloxacin R, ciprofloxacin resistant (MIC ≥ 0.5 mg/L, due to presence of multiple mutations and/or genes, see Carey et al, 2023 <https://doi.org/10.7554/eLife.85867>)

Funding

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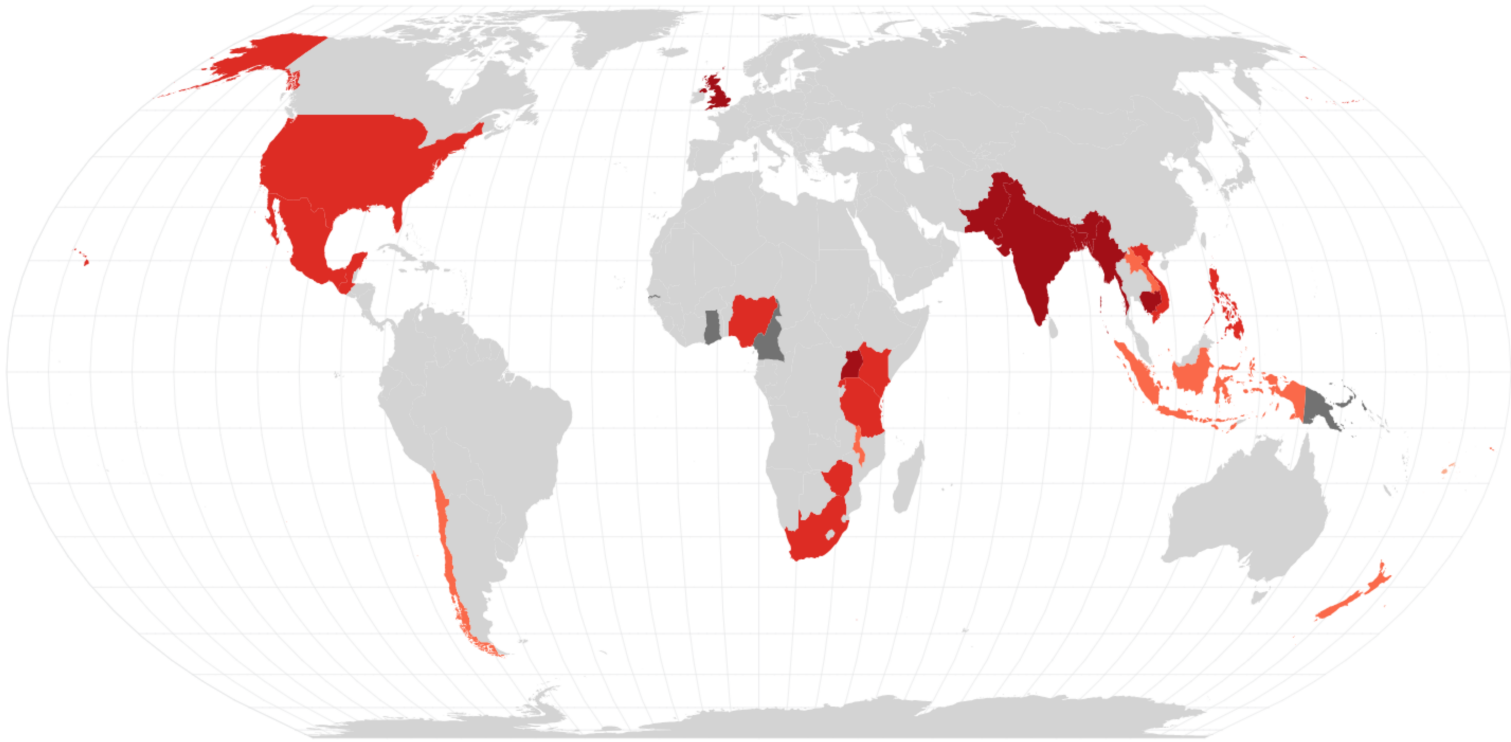
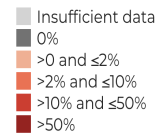
Global Overview of *Salmonella* Typhi

Total: 1526 genomes
Country: Pakistan
Time period: 1958 to 2021

Map

Map View: Ciprofloxacin non-susceptible (CipNS)

Dataset: All (local + travel)



Resistance frequencies within genotypes

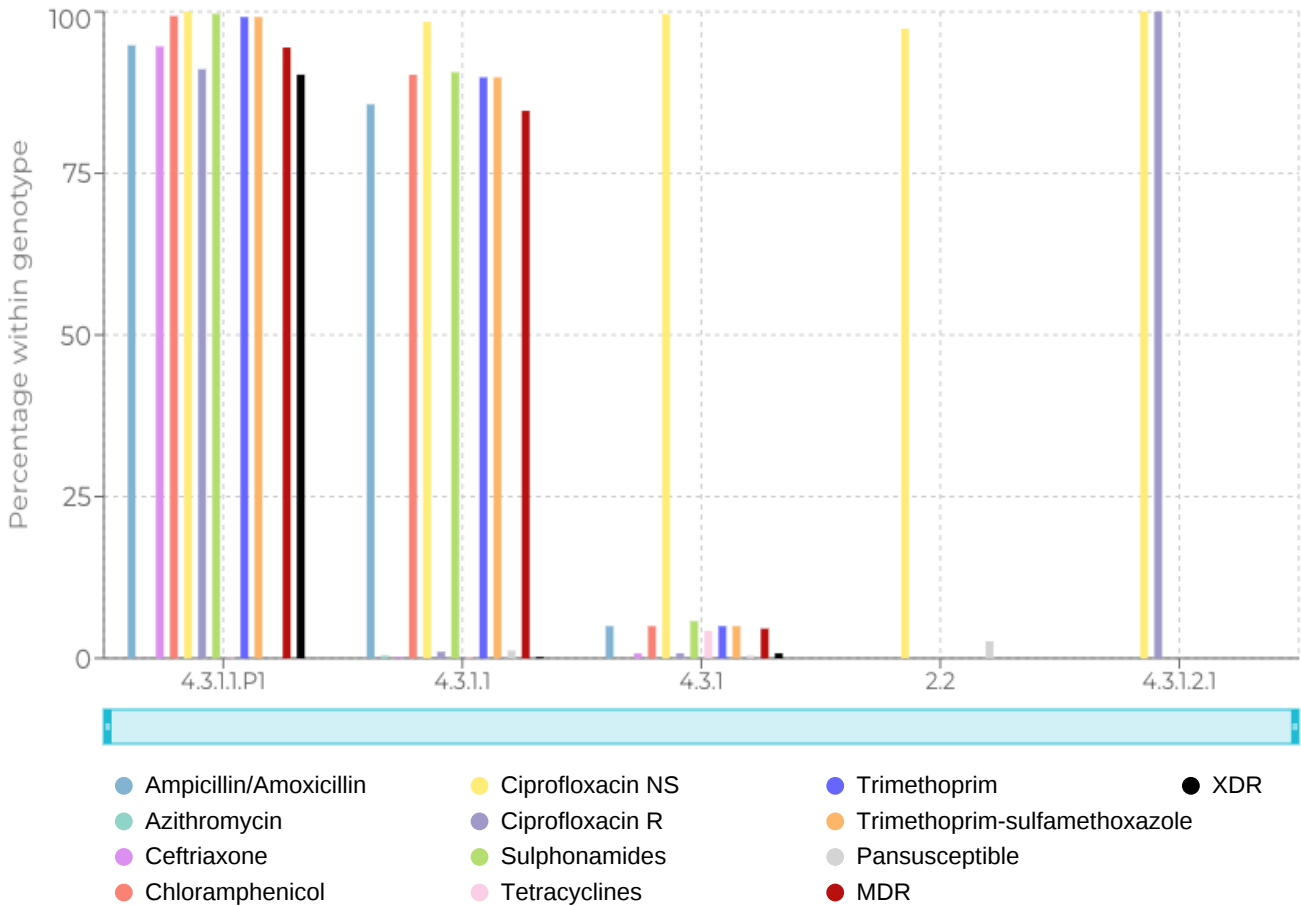
Top Genotypes (up to 7)

Total: 1526 genomes

Country: Pakistan

Time period: 1958 to 2021

Dataset: All (local + travel)



Drug resistance trends

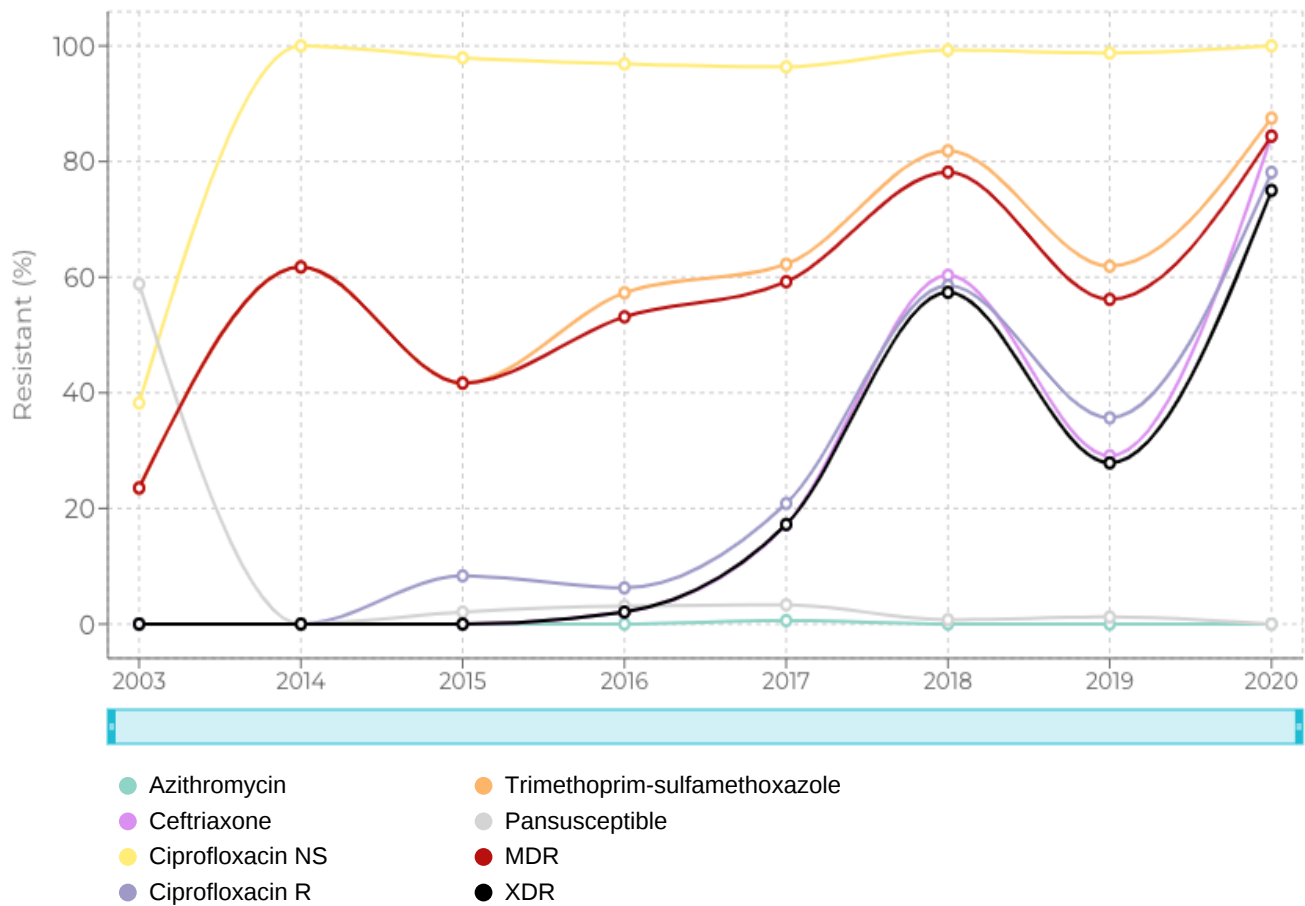
Data are plotted for years with N $\geq$ 10 genomes

Total: 1526 genomes

Country: Pakistan

Time period: 2003 to 2020

Dataset: All (local + travel)



Resistance determinants within genotypes: Ciprofloxacin NS

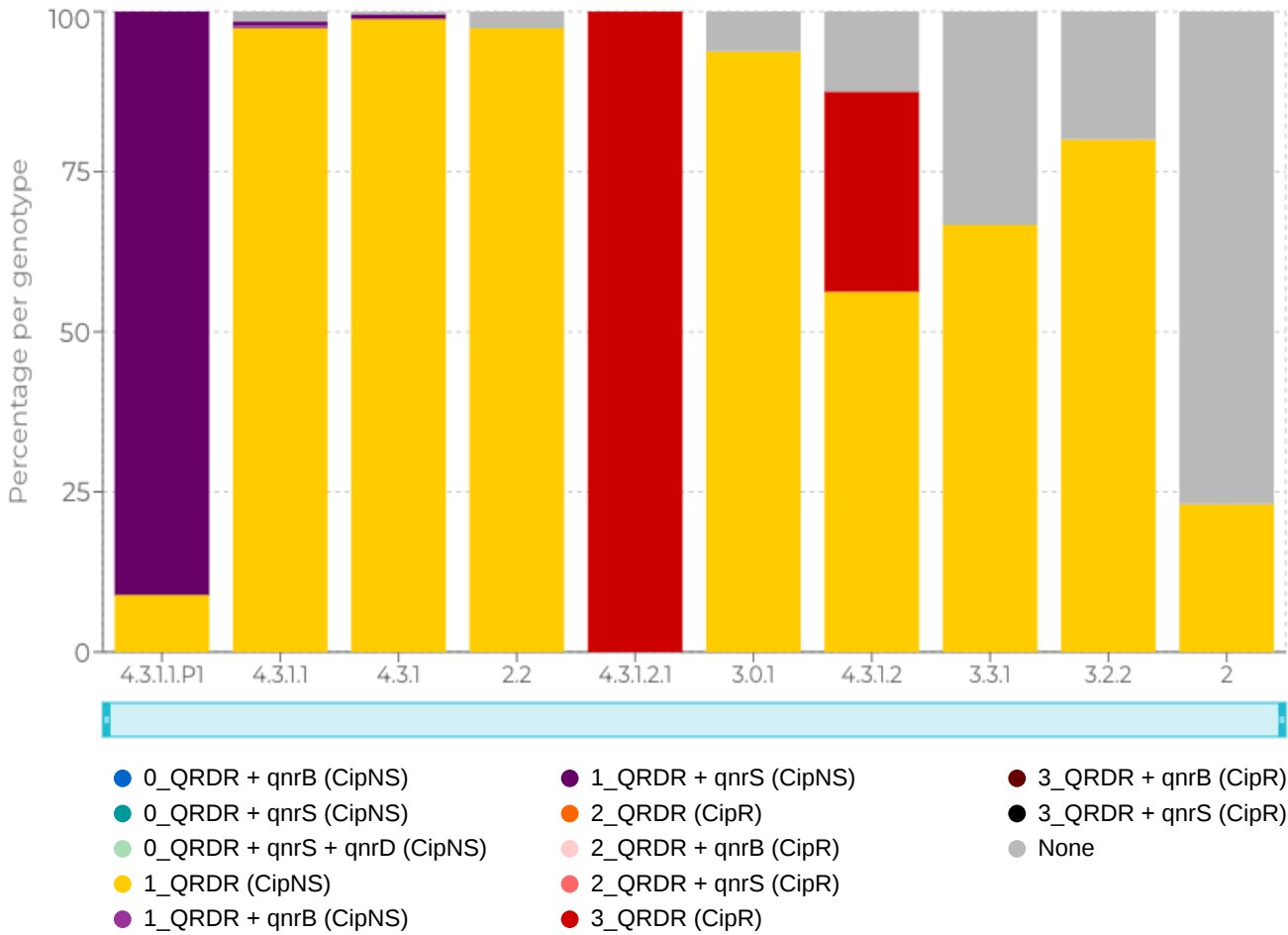
Top Genotypes (up to 10)

Total: 1526 genomes

Country: Pakistan

Time period: 1958 to 2021

Dataset: All (local + travel)



Genotype distribution

Total: 1526 genomes
Country: Pakistan
Time period: 2003 to 2020
Dataset: All (local + travel)

