



Campylobacter and Non-typhoidal Salmonella infection among chicken shop workers in Tamil Nadu, India



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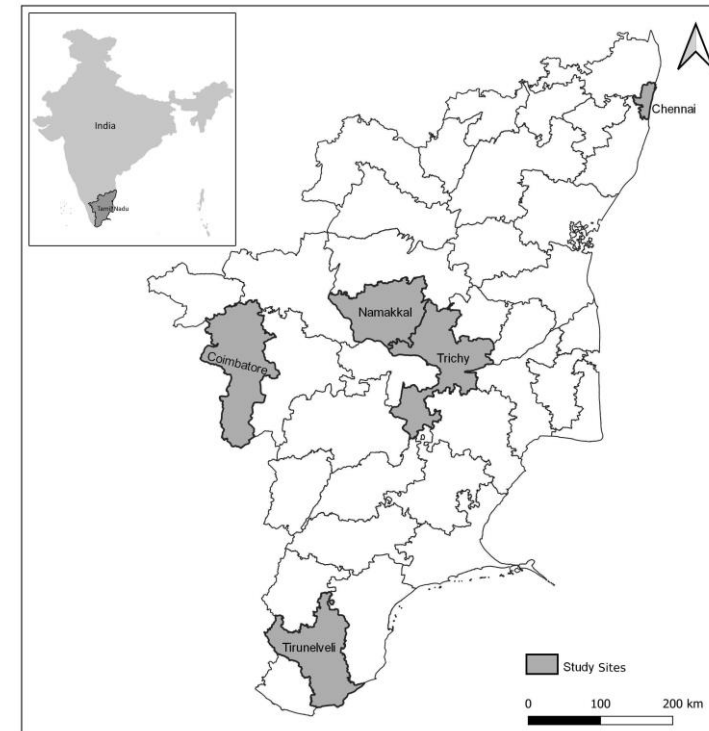
Introduction

- There is paucity of data on the *Campylobacter* and non-typhoidal *Salmonella* (NTS) infection among poultry workers in India.
- The knowledge gained will inform measures for the improved safety of these workers from future infectious disease threats and plan testing strategies.

Objectives

- To determine the prevalence of *Campylobacter* and NTS among poultry workers in Tamil Nadu, India
- To determine the risk of infection of *Campylobacter* and NTS among poultry workers

Study Sites



Methods

Study design: Cross-sectional study

Study period: December 2021 to April 2022

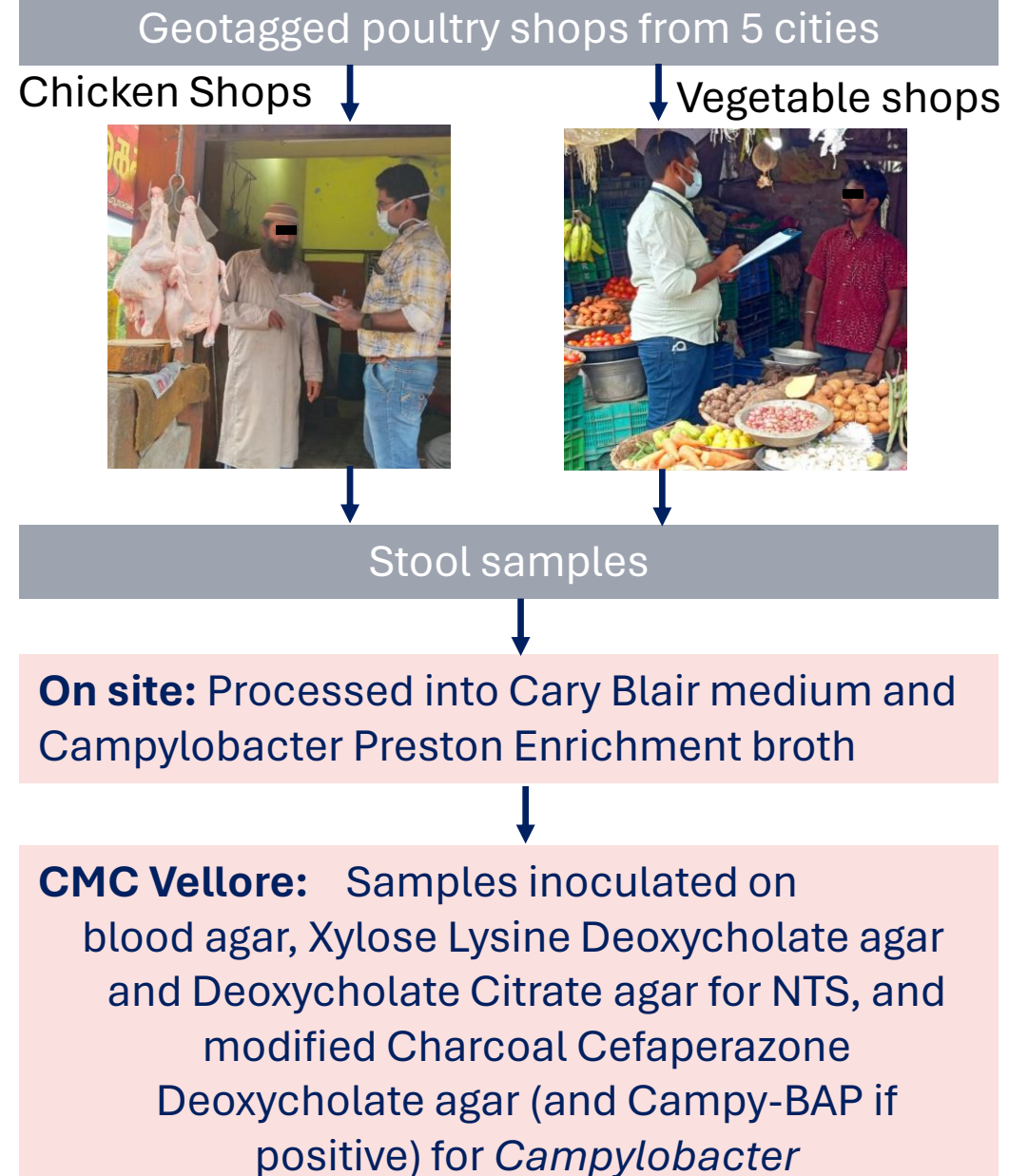
Study setting: 5 cities (Coimbatore, Namakkal, Trichy, Chennai, Tirunelveli) in Tamil Nadu

Sample size: 100 chicken shop and 50 vegetable shop worker

Approach:

- Ten chicken shops in each city were randomly selected from previously geospatially mapped poultry distribution networks
- Five vegetable/fruit shops within 5 meters of the poultry shop were selected to compare risk
- Two workers, ≥ 18 years of age working in each of the 10 chicken and 5 vegetable shops were recruited

Study Overview



Results

- 105 participants from the chicken shops and 50 from the vegetable shops provided stool samples
- **Prevalence of NTS infection:**
 - Chicken shop: 7.6% (8/105)
 - Vegetable shop: 6% (3/50)
- **No Campylobacter was identified in the samples.**

NTS serogroups and serotypes detected:

- *Salmonella* serogroup B: 3 (*S. Agona*- 1; *S. Chester*- 2)
- *Salmonella* serogroup C1: 3 (*S. Virchow*- 1
S. Mbandaka- 1; *S. Infantis*- 1)
- *Salmonella* serogroup C2: 4 (*S. Kentucky*- 4)
- *Salmonella* serogroup E: 1 (*S. Weltevreden*- 1)

Aeromonas: 3 (2.9%) chicken shop and 3 (6%) vegetable/fruit shop workers

Shigella flexneri: 1 (2%) vegetable shop worker

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Principal Investigator: F Tomley

Conclusion

- The prevalence of NTS is **slightly higher compared to the pooled estimate** (2.1%; 95% confidence interval: 1.2-3.2%) from **4 southeast Asian countries** (India, Bangladesh, Sri Lanka and Vietnam).
- **No significant difference in the risk of infection** between chicken shop and vegetable shop workers.
- The **failure to detect *Campylobacter*** may be attributed to its **fastidious nature** or the **extended transport time** between collection and laboratory processing.
- **Molecular methods may offer higher sensitivity** in detecting *Campylobacter* for future field studies that necessitate remote testing