Abstract 1369

Ten Year Trends of Typhus Fever in North Texas: Epidemiologic Characteristics and Clinical Manifestations

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Background

- Murine Typhus remains endemic in southern California and in southern Texas where it is transmitted by fleas, with opossums serving as the amplifying host.
- In Texas, the disease is increasingly recognized in municipalities outside its historic rural range and is spreading in a northward distribution.
- Since its expansion, we have observed increased cases in the Dallas-Fort Worth (DFW) area and aim to describe murine typhus in North Texas from 2011-2021.

Methods

- Leveraging the electronic health record, we retrospectively identified 482 individuals tested for murine typhus by *Rickettsia typhi* (*R. typhi*) serology in 2 Dallas hospitals.
- We subsequently collected epidemiologic characteristics, clinical features, and outcomes of 58 patients with positive *R. typhi* serologies (>1:64).

Results

- Of the **58 patients** with positive *R. typhi* serology, 39 (67%) **male**, 45 (78%) **White**, and 23 (40%) Hispanic.
- 79% had symptom onset between **May and November**, and 36/58 (62%) diagnosed in 2020 and 2021 (Figure 1).
- 26 (45%) had exposure to dogs, 18 (31%) to cats, and 13 (22%) to opossums.
- 12 (21%) patients immunocompromised.
- 52 (90%) had **fever**, 35 (60%) **headache**, 26 (45%) nausea and vomiting, 26 (45%) rash, 25 (43%) myalgia, 20 (34%) cough, and 17 (29%) abdominal pain.
- In 2020 and 2021, 35/36 (97%) patients were additionally tested for COVID-19, and 29/35 (83%) patients had **more than one negative SARS-CoV-2 test** prior to *R. typhi* serologies being sent.
- 21/50 (42%) had an abnormal chest x-ray (CXR) and 28/30 (93%) had an **abnormal chest computed tomography (CT)**. Nine (16%) had hypoxia, 9 (16%) required an intensive care unit, and 3 (5%) required mechanical ventilation.
- No patients died within 30 days of diagnosis.

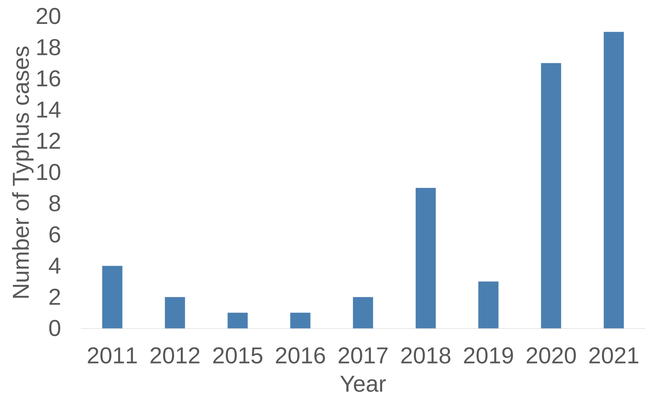
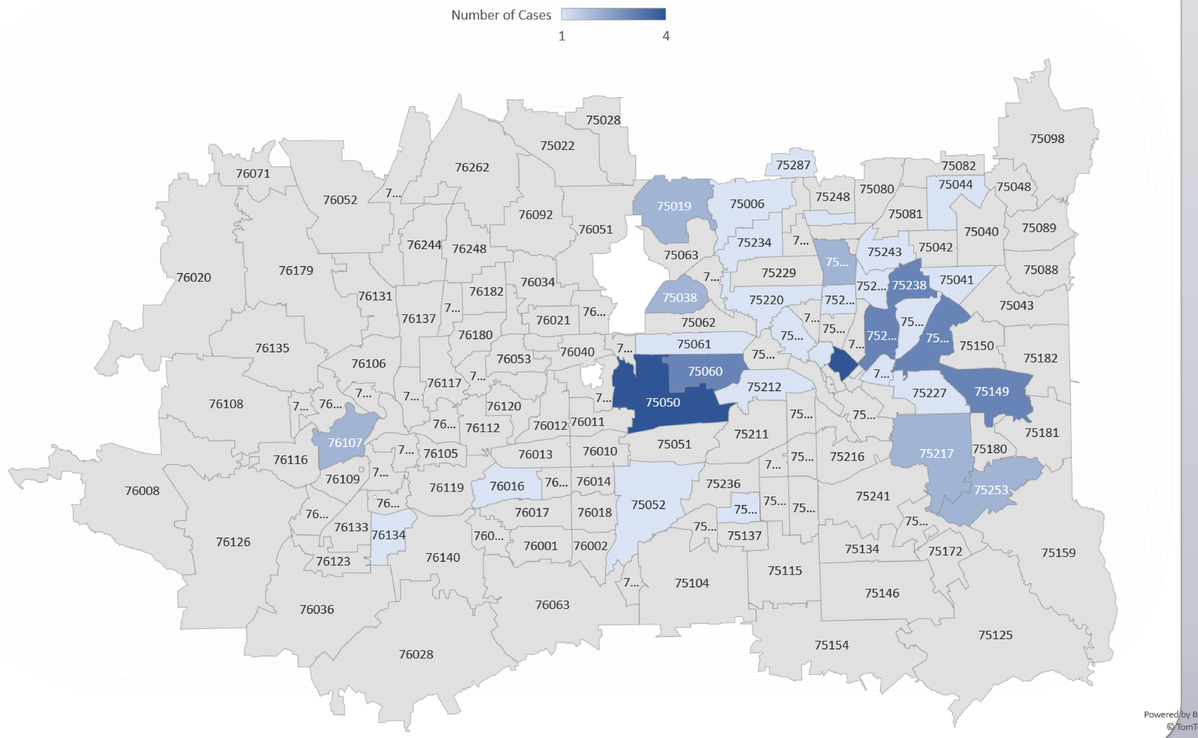


Figure 1: Ten Year Epidemiological Curve of Murine Typhus in Dallas - Fort Worth Metroplex (2011-2021) From 2 Hospital Systems

Results

Figure 2. Heatmap distribution of Murine Typhus in Dallas - Fort Worth Metroplex (2011-2021) From 2 Hospital Systems



Conclusions

- Our study highlights the **expansion of murine typhus in North Texas** (Figure 2) and demonstrates the heightened need for clinicians to be aware of this disease in the appropriate epidemiologic and clinical settings.
- We also describe **increasing rates of respiratory findings**, demonstrated through over half of patients having at least one respiratory symptom, and 93% having an abnormal chest CT (findings traditionally associated with severe disease).
- We are currently working on training a predictive model to early detect murine typhus among admitted patients with fever of unknown origin.

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