

Emergency Department Visits for Lyme Carditis – New York, 2017–2021

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INTRODUCTION

- Lyme carditis is a rare and potentially fatal manifestation of Lyme disease, the most common tickborne disease in the United States.
- Although Lyme disease is nationally notifiable, data on clinical manifestations are not collected systematically.
- We developed and applied a novel syndromic surveillance query using diagnostic codes and key words in emergency department visit electronic medical records to identify patients with Lyme carditis in New York State (excluding New York City) during 2017-2021.

METHODS

- Using the US National Syndromic Surveillance Program (NSSP) BioSense Platform, we developed a query using ICD and SNOMED diagnostic codes and chief complaint text related to Lyme disease and myocarditis or heart block.
- We applied the query to all emergency department visits in New York that contribute data to NSSP (approximately 70% of facilities in NY).
- Using New York's regional health information exchange system, we systematically abstracted key information in each medical record identified by the query.
- Two physicians independently assigned a clinical case status (confirmed; probable; not a case) to each record; when these differed, an infectious disease physician adjudicated.

RESULTS

- The query identified 173 individuals with possible visits for Lyme carditis, of which 148 met criteria for full record review. Of those with records abstracted and reviewed, 37% (n = 55) were classified as confirmed, 18% (n = 27) as probable, and 45% (n = 66) as not a case.
- The positive predictive value of the query was 47%.
- Cases occurred in 28 of New York's 57 counties (excluding New York City).
- Most (69%) occurred during May–September.
- For records that were fully abstracted: median age was 62 years for cases (IQR 33–73) and 67 years for non-cases (IQR 42–78) (p = 0.11); 29% of cases and 38% of non-cases were female.
- Among cases, 51% had positive IgG and 55% had positive IgM immunoblots; 67% had second- or third-degree atrioventricular block.

CONCLUSION

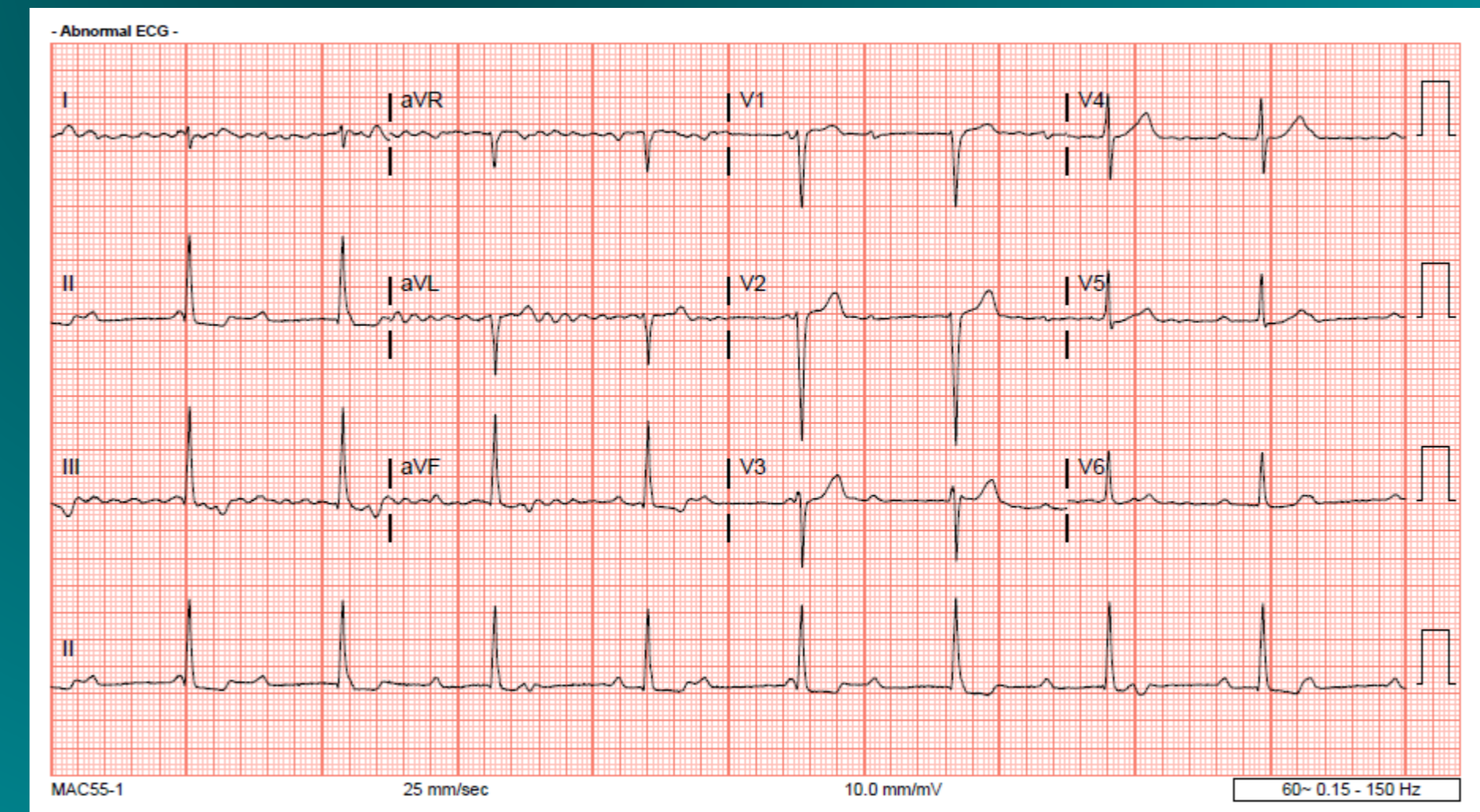
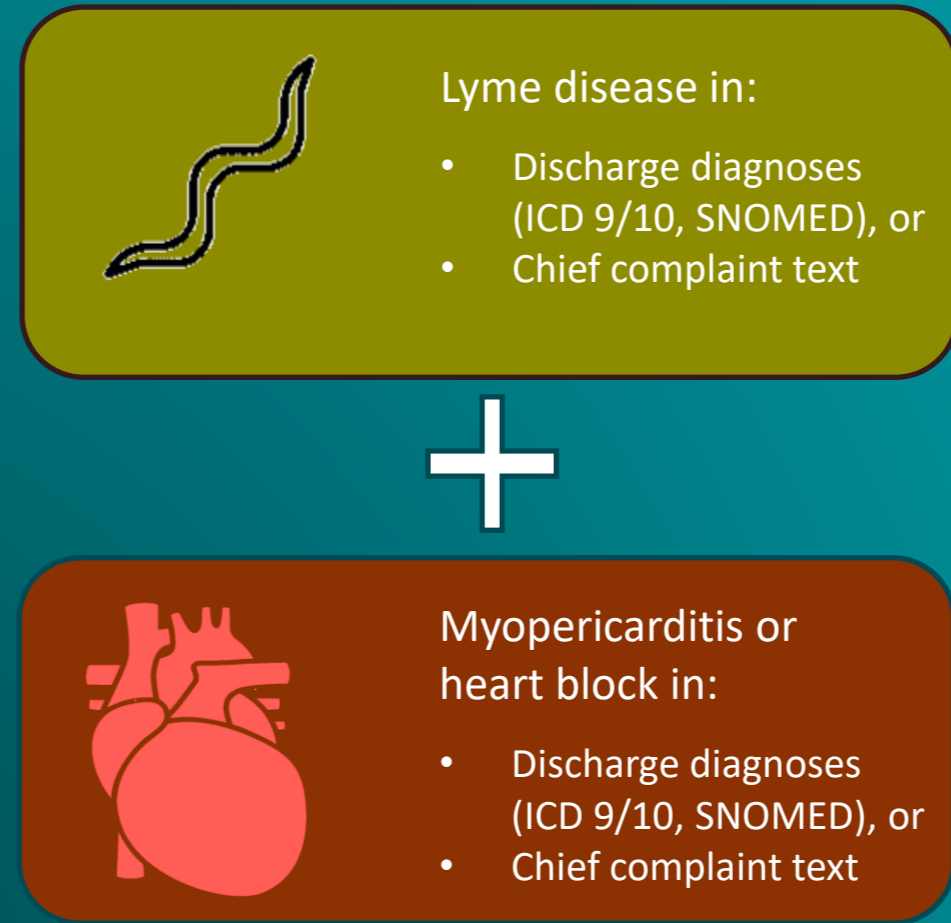
This query can be useful within syndromic surveillance systems in areas of high Lyme incidence to detect changing disease patterns, including temporal or spatial clusters of Lyme carditis.

Using diagnostic codes and key words in New York emergency department visits, we detected 82 cases of Lyme carditis, a rare disease of public health importance.

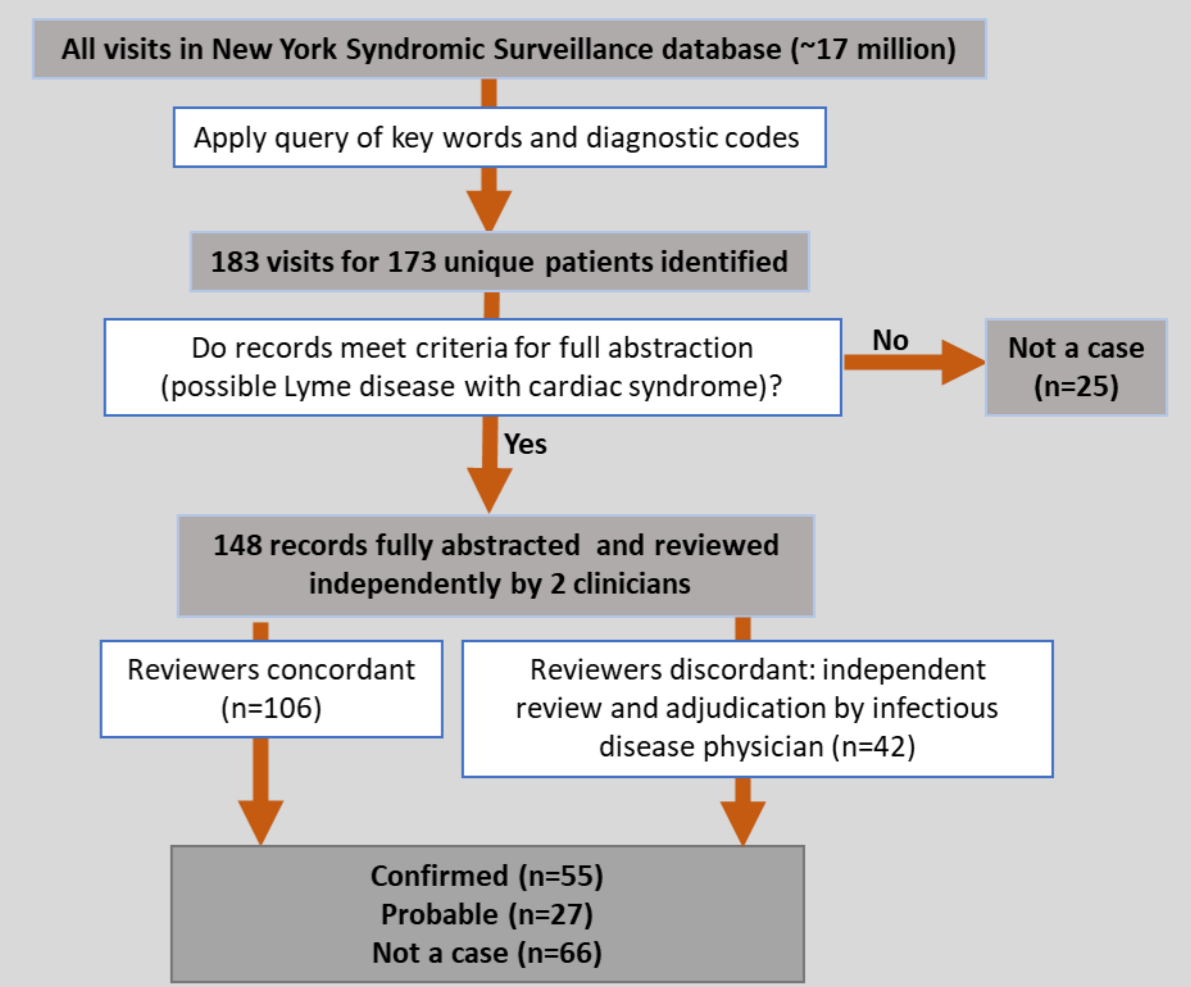


Scan for more information:

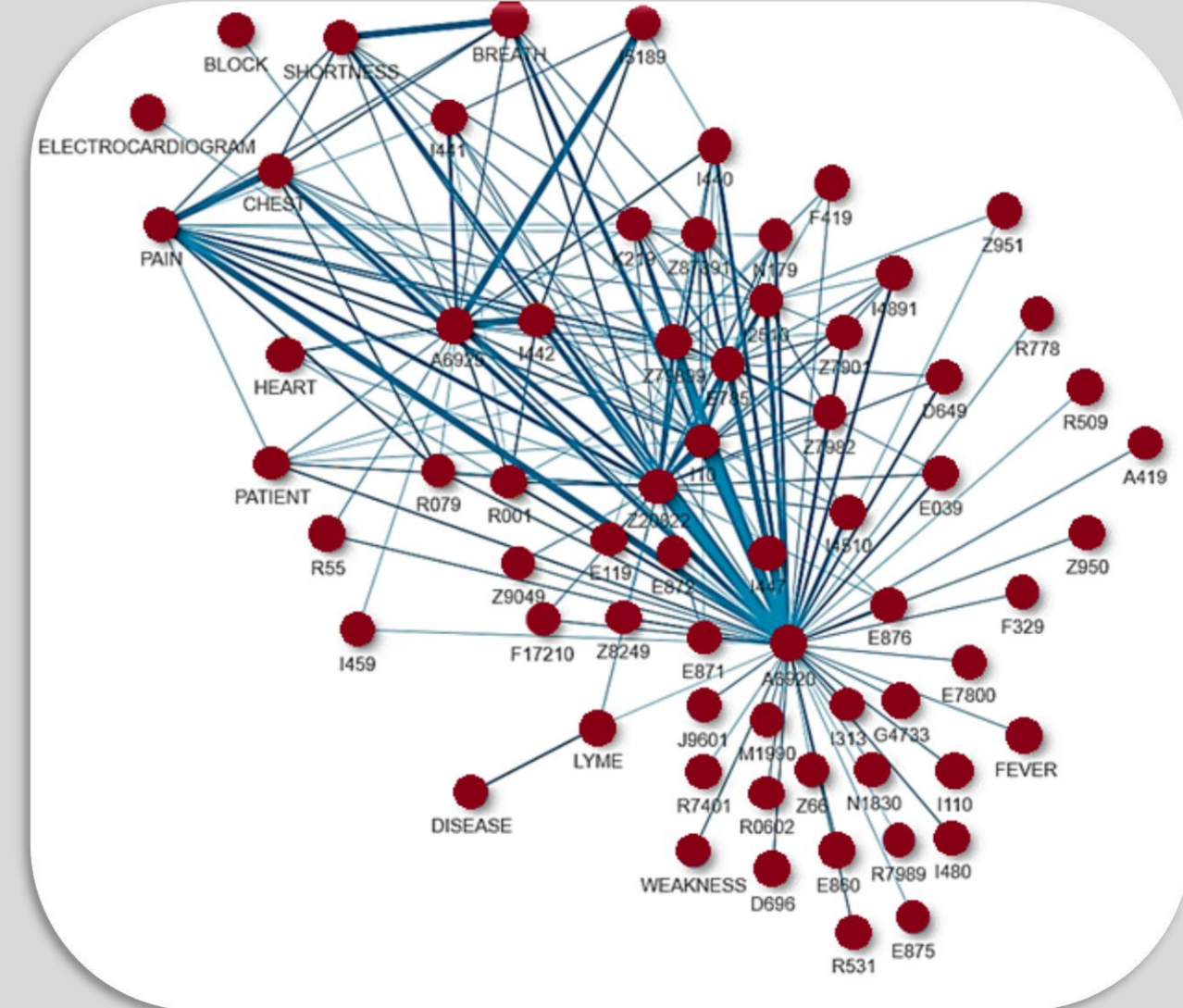
SYNDROMIC SURVEILLANCE QUERY



QUERY VALIDATION PROCESS



MAP OF DIAGNOSTIC CODES AND TEXT



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