

Screening for Chagas disease in East Boston, Massachusetts from 2017 - 2020 reveals 0.9% prevalence

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INTRODUCTION

Estimates suggest there are >300,000 people with Chagas disease in the US, among which >3000 reside in Massachusetts

Untreated, Chagas disease can lead to death in up to 25-30% of people affected

We report the results of a screening and referral program for Chagas disease at East Boston Neighborhood Health Center

METHODS

- Continuing education about Chagas disease was offered to healthcare providers & community-based education to patients
- One-time screening was recommended for all patients who had lived in Mexico, South or Central America for ≥6 months
- A commercial lab performs the initial screening test via Hemagen ELISA + confirmatory testing is performed at the US Centers for Disease Control and Prevention (CDC)
- For each patient, completion of screening requires a multistep process : splitting the serum sample, monitoring screening results, filling out the CDC requisition form, shipping the serum aliquot to the MA DPH, and monitoring the CDC results
- Patients with confirmed Chagas are referred to Boston Medical Center for further evaluation and treatment if indicated
- We compared prevalence of Chagas disease by age and sex

Figure 1. Strong Hearts Screening Outcomes, 3/2017 - 5/2020

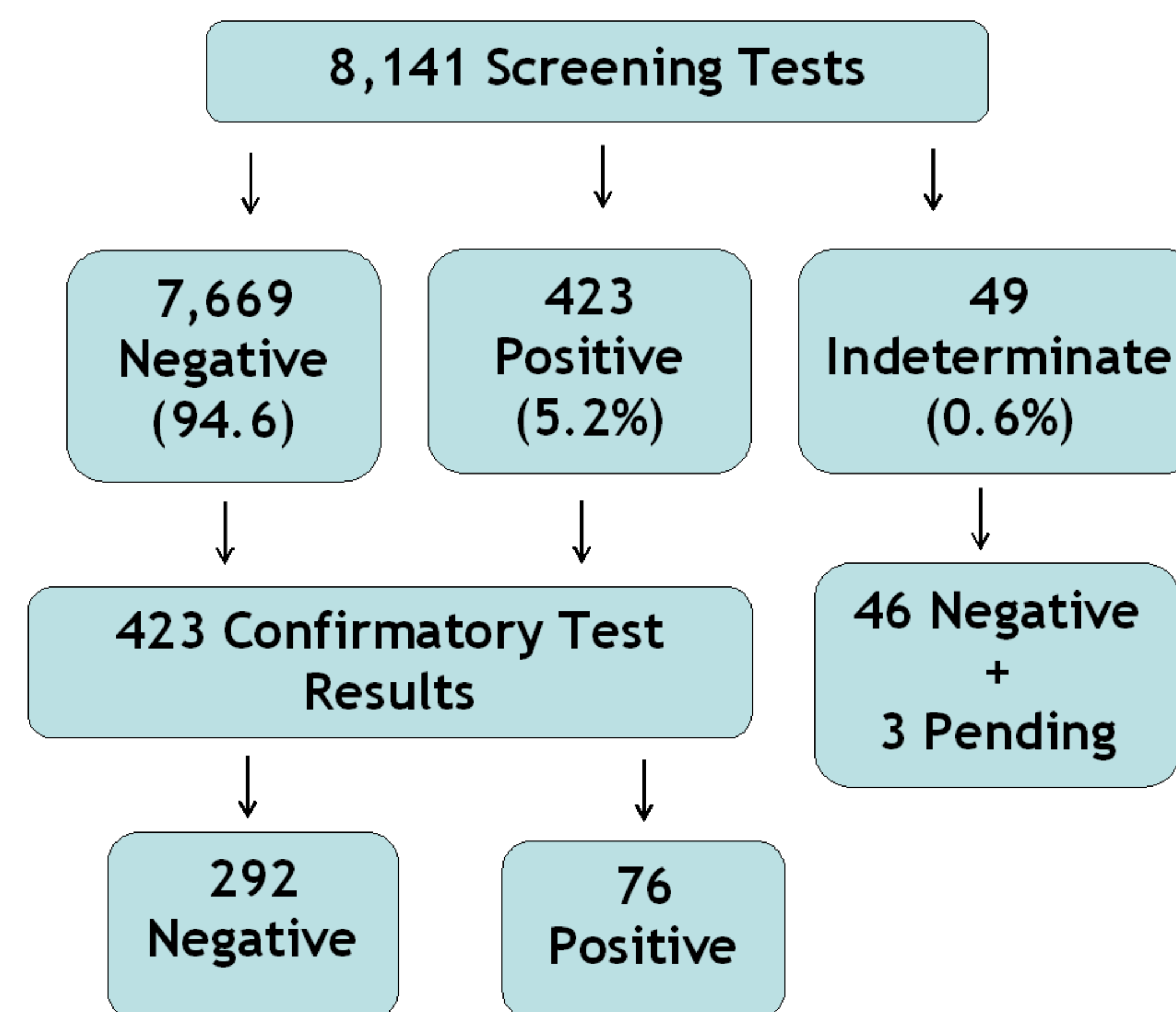


Table 1. Epidemiology of Chagas disease in East Boston, MA

| Prevalence | Overall (%) | Men (%) | Women (%) | p* |
|-----------------|---------------|---------------|---------------|-------|
| Region | | | | |
| North America | 1/347 (0.3) | 1/137 (0.) | 0/209 (0.0) | <0.01 |
| Central America | 72/5038 (1.4) | 33/1838 (1.8) | 39/3200 (1.2) | |
| South America | 2/2455 (0.1) | 2/948 (0.2) | 0/1507 (0.0) | |
| Age | | | | |
| <20 years old | 1/448 (0.2) | 1/195 (0.5) | 0/253 (0.0) | <0.01 |
| 20 – 29 years | 10/2273 (0.4) | 4/694 (0.6) | 6/1579 (0.4) | |
| 30 – 39 years | 19/2867 (0.7) | 8/980 (0.8) | 11/1887 (0.6) | |
| 40 – 49 years | 18/1672 (1.1) | 8/792 (1.0) | 10/898 (1.1) | |
| 50 – 59 years | 17/578 (3.0) | 12/266 (4.5) | 5/312 (1.6) | |
| 60+ years | 11/228 (4.8) | 4/94 (4.3) | 7/134 (5.2) | |
| Overall | 76/8084 (0.9) | 37/3021 (1.2) | 39/5063 (0.8) | 0.04 |

RESULTS

- The overall prevalence of *T. cruzi* infection was 0.93%; the greatest number of positive tests were from individuals from Central America and older age groups
- None of the indeterminate screening tests were positive following CDC confirmation
- Multiple steps of the screening process alone place a significant burden on individual providers and institutions that aim to address this neglected disease

CONCLUSIONS

The prevalence of *T.cruzi* infection was nearly 1.0% among patients in East Boston who had lived in Latin America

Diagnosis was challenging due to many false positive tests

Given the significant prevalence of Chagas disease that have been found in Latin American residents of the United States, increased access to screening and confirmatory testing and diagnostics with better sensitivity are needed

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