Chagas Disease: Quality Improvement at East Boston NeighborHealth Center

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Background

Chagas Disease (CD)

- Parasitic disease endemic to Mexico, Central America and South America.
- >7 million people infected, rural/underserved areas.

Transmission:

- Bite/fecal contamination from "kissing bug", oral ingestion, perinatal, blood transfusion/organ transplantation.

Most infections are asymptomatic:

- Manifestations: 20-30% cardiac; 10% gastrointestinal.

Infectious Diseases Society of America Guidelines

Who Should be Screened for Chagas Disease (CD) in the United States?

#1: People who were born or lived for a prolonged period (>6 months) in areas of Mexico, Central or South America with endemic CD (strong, low).

#2: Close (first-degree) relatives of people previously diagnosed with Chagas disease (strong, low).

#5: Women of childbearing age who have lived in a region of Mexico, South or Central America with endemic Chagas disease (strong, moderate).

Host Organization

East Boston NeighborHealth Center (EBNHC)

Accessible, affordable primary care for all in East Boston without regard to age, income, insurance status, language, culture, or social circumstances.

- Located in East Boston.
- High concentration Latinx population.
- Many undocumented, no/low insurance.
- Pioneering Chagas disease screening program since 2017.
- Partnered with Boston Medical Center.

Objectives

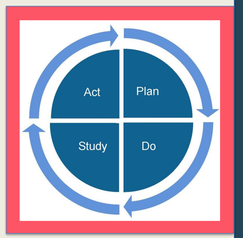
Quality Improvement (QI) approach

Recurrent PDSA cycles to improve processes and care.

QI goal:

To ensure 90% of women of childbearing age newly diagnosed with Chagas disease at EBNHC in the next 6 months have:

1) children screened, and
2) siblings screened, as per IDSA guidelines.



Are there gaps in EBNHC's CD screening?
Can QI methodology help address gaps?

Methods

Gap Analysis = audit

- Create a point estimate.
- If goal performance percentage is known (i.e. >80%), 95% confidence interval (CI) determine if it is included/excluded.

$$\text{CI:} \quad p \pm 1.96 \sqrt{\frac{p(1-p)}{n}}$$

Steps:

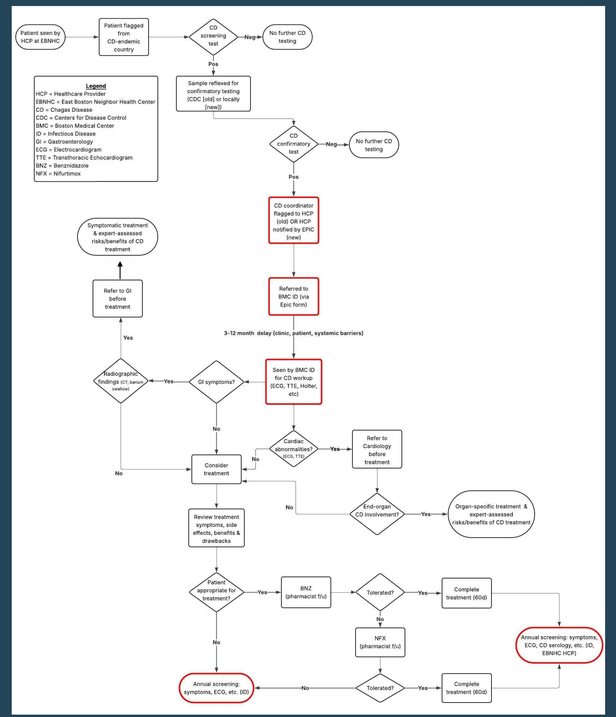
1) Filtered database of confirmed (+) Chagas tests to:
   - Women.
   - Between ages 18-50 at time of diagnosis.
2) 20 charts randomly selected from alphabetical order.
3) Chart reviewed for documentation that patients were counselled that 1) children and 2) siblings require CD screening *after* diagnosis.
4) CIs calculated and compared against target.
5) Process map created to examine points of potential intervention.
6) Stakeholder interviews

Results

- **Met 90% goal** of CD testing advised for **children**.
- **Did not meet 90% goal** of CD testing advised to **siblings**
  While not in the CD guidelines, also **did not meet 90% goal** of counselling patients **not to donate blood**.
- Process map and potential intervention below.

EBNHC's CD screening has (some) gaps.
Next steps: QI approach for progress.

Process Map, CIs, Checklist



	# children mentioned?	Children advised to be tested?	Siblings mentioned?	Siblings advised to be tested?	Discussed avoiding blood donation?
# of "Y"/ total #	18/20	16/20	6/20	2/20	5/20
Point estimate (p)	0.90	0.8	0.3	0.1	0.25
Confidence interval (CI)	68.3% to 98.8%	56.3-94.3%	11.9-54.3%	1.2-31.7%	8.7-49.1%
Is 90% contained within this CI?	Yes	Yes	No	No	No

Chagas Disease Fan-Out Screening

Children

Is the patient a woman? Yes☐ No☐

If yes, does she have children? Yes☐ No☐ N/A☐

If yes, has she been advised the children should be tested for Chagas Disease? Yes☐ No☐ N/A☐

Siblings

Does the patient have siblings? Yes☐ No☐

Do they have the same mother, or did they grow up in the same house/area? Yes☐ No☐ N/A☐

If yes, has she been advised her siblings should be tested for Chagas Disease? Yes☐ No☐ N/A☐

Challenges & Lessons Learned

Study

- Assumptions of how well/poorly a system is working may not reflect practice.
- Approval/access takes longer than anticipated.
- Building a practicum with few prior connections takes time!

Personal

- Patients are dealing with multiple complex issues at once – CD treatment may not be a priority.
- Personal events can limit project movement: licensing exam, wedding, issues in lives of collaborators, etc.

References

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2) Ayres J, Marcus R, Standley CJ. The Importance of Screening for Chagas Disease Against the Backdrop of Changing Epidemiology in the USA. *Curr Trop Med Rep*. 2022;9(4):185-193.
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