Introduction

• American Trypanosomiasis is one of 20 recognized categorical NTDs.
• Trypanosoma cruzi (T. cruzi) is a bloodborne parasite, which causes the disease.
• Transmission and infection occurs a number of ways, principally via triatomine bugs.
• Acute and chronic phases uniquely characterize the disease.
• 6-7 million are infected worldwide. 10,000 die every year.
• There are only two drugs, Benznidazol and Nifurtimox, that are used for treatment. Serology tests are not cheap enough and most are limited to specific phases of the disease.

Methods

• The project generally consisted of two methodologies: Interviews and the common procedures of a library thesis.
• Interviews were conducted with a wide variety of experts, professionals, and researchers whose work relates in some way to Chagas disease or other infectious diseases to learn about new developments.
• Research of the landscape of Chagas disease treatment and diagnostics.

Objective of the Study

To determine the status of new treatment and diagnostic tools (drugs and serology tests), in addition to the feasibility of their implementation into current Chagas relief strategies.

Results & Takeaways

• There are a number of drugs that are under development.
• These drugs are being developed primarily in the endemic countries of South America and the United States.
• Very little can be said about their potential effectiveness and ease of implementation in the United due to the need for FDA approval, which is quite hard to attain.
• Drug developers are still hopeful.
• Talking to a diverse groups of professionals revealed a different school of thought that will be future investigated.
• Slowing down the parasite instead of trying to kill it might be a better strategy.
• The disease has spread has spread considerably into the United States. Chagas complications are already being seen in many hospital departments.

Future Research

• A model will be the primary focus of the thesis moving forward.
• It will model the development and spread of the T. cruzi parasite within the body.
• The model will then be used to determine the best phase of within-human-host T. cruzi development to stop activity.
• This potential finding could be a tremendous asset in developing a new drug.

Questions

• When is the right phase/time in T. cruzi development to slow down the parasite?

Acknowledgements

Thank you to Professor Andrew Dobson and the Smithsonian Tropical Research Institute. Thank you to the Center for Health and Wellbeing and the Health Grand Challenge, the EEB Department, and the Program in Latin American Studies.

Figure 1: T. cruzi life cycle. The various morphological phases of T cruzi.
Introduction

- American Trypanosomiasis is one of 20 recognized categorical NTDs.
- Trypanosoma cruzi (T. cruzi) is a bloodborne parasite, which causes the disease.
- Transmission and infection occurs a number of ways, principally via triatomine bugs.
- Acute and chronic phases uniquely characterize the disease.
- 6-7 million are infected worldwide. 10,000 die every year.
- There are only two drugs, Benznidazol and Nifurtimox, that are used for treatment. Serology tests are not cheap enough and most are limited to specific phases of the disease.

Methods

- The project generally consisted of two methodologies: Interviews and the common procedures of a library thesis.
- Interviews were conducted with a wide variety of experts, professionals, and researchers whose work relates in some way to Chagas disease or other infectious diseases to learn about new developments.
- Research of the landscape of Chagas disease treatment and diagnostics.

Objective of the Study

To determine the status of new treatment and diagnostic tools (drugs and serology tests), in addition to the feasibility of their implementation into current Chagas relief strategies.

Results & Takeaways

- There are a number of drugs that are under development.
- These drugs are being developed primarily in the endemic countries of South America and the United States.
- Very little can be said about their potential effectiveness and ease of implementation in the United due the need for FDA approval, which is quite hard to attain.
- Drug developers are still hopeful.
- Talking to a diverse groups of professionals revealed a different school of thought that will be future investigated.
- Slowing down the parasite instead of trying to kill it might be a better strategy.
- The disease has spread has spread considerably into the United States. Chagas complications are already being seen in many hospital departments.

Future Research

- A model will be the primary focus of the thesis moving forward.
- It will model the development and spread of the T. cruzi parasite within the body.
- The model will then be used to determine the best phase of within-human-host T. cruzi development to stop activity.
- This potential finding could be a tremendous asset in developing a new drug.

Questions

- When is the right phase/time in T. cruzi development to slow down the parasite?

Acknowledgements

Thank you to Professor Andrew Dobson and the Smithsonian Tropical Research Institute. Thank you to the Center for Health and Wellbeing and the Health Grand Challenge, the EEB Department, and the Program in Latin American Studies.