

# Mitigating Hansen's Disease: A Quantitative Analysis of Cases in Brazil and A Scientific Analysis of Prognostic Tests for Contacts



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## Introduction:

Brazil has the second-highest volume of cases in Hansen's Disease. For a large percentage of patients, the disease is commonly misdiagnosed at first glance, and this can lead to the worsening of symptoms.

## Objective of Internship:

To conduct scientific experiments on possible prognostic tests and conduct a study to analyze socioeconomic factors that can influence the migration of patients to different areas for treatment.

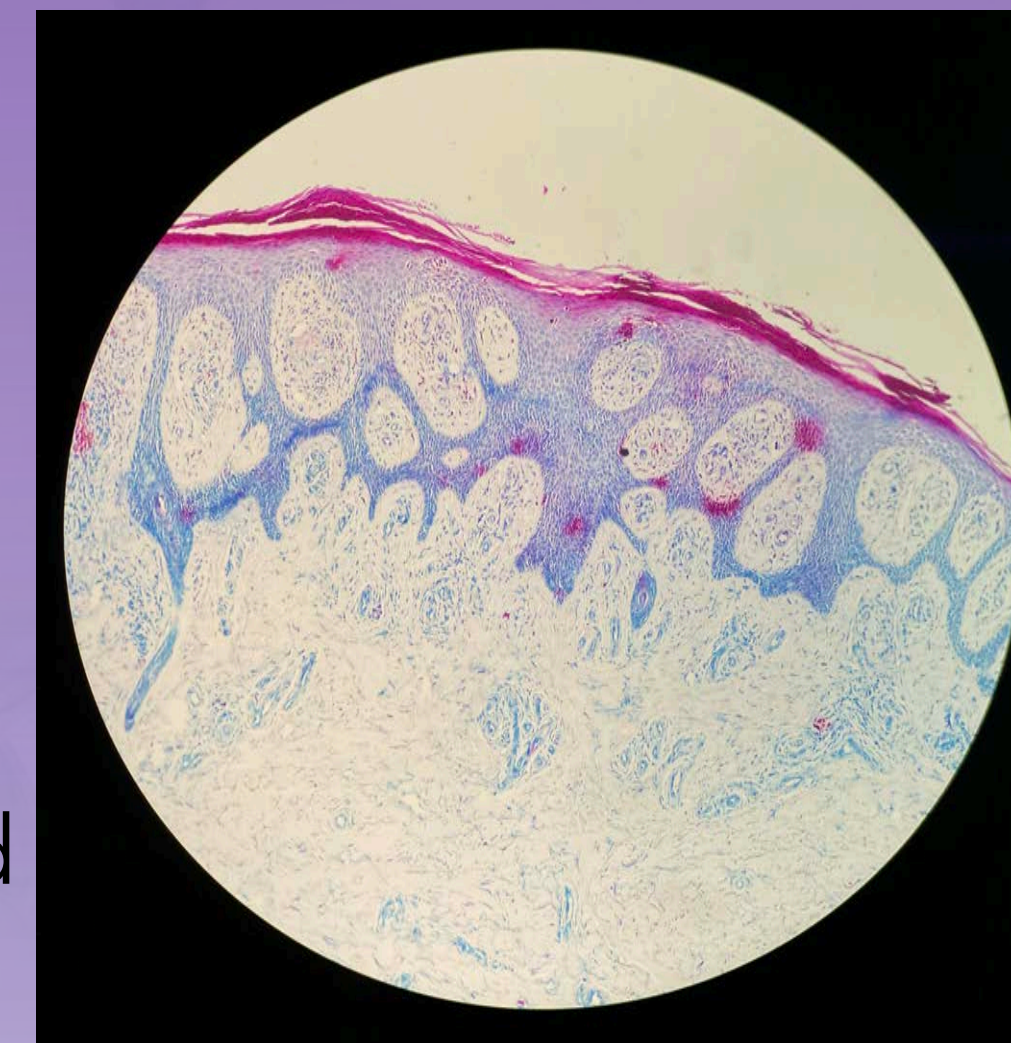
## Work Profile:

- Shadowed doctors who work with patients of Hansen's disease
- Conducted experiments in the lab working with blood serums of patients
- Created a project using Python to analyze clinical data from patients

## Reflection

When I went to Dia Nacional da Ciencia at Quinta da Boa Vista to spread awareness about Hansen's disease, I realized that many are aware that the disease exists but do not know important facts about transmission and treatment. There is a cure for Hansen's disease, which is taking a series of antibiotics for 12 months, and Hansen's disease is spread by repeated respiratory contact. With the time allotted, I was not able to complete my experiments, but based on previous discussions and research,

it is important to advance these prognostic tests for Hansen's disease, as patients who test positive for anti-PGL-1 are three times more likely to develop the disease. Early diagnosis is extremely important as the symptoms of Hansen's disease can develop into debilitating health issues like paralysis, blindness, and nose disfigurement.



Example of skin biopsy of patient with Hansen's Disease



Dia Nacional da Ciencia with members from ASA Clinic

**Discussion:** It is important to look for biological markers that can aid in early diagnosis and prevention of the disease because it can aid in its eradication. Furthermore, although the number of cases has been decreasing, the same amount of people are being transferred to different health centers, and understanding how Brazil's healthcare system works can provide faster and more integrated treatment.

## Questions:

- Can we create a vaccine other than the BCG vaccine to help patients develop immunity against *M. leprae*?
- Can we train dermatologists to become more familiar with diseases like Hansen's disease that affect the skin?

**Conclusion:** Hansen's disease is one of the many neglected tropical diseases that need increased attention, and even developing a prognostic test can profoundly accelerate progress in eradicating the disease. Spreading knowledge of this disease is important to dispel stigma and increase the proactiveness of symptoms.

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