

Improving **Diagnos**tics and **Treatment** of Infectious Diseases in Venezuela

Host Club:
Rotary Club of Nueva Segovia
International Club:
Rotary e-Club of Houston



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The Venezuelan humanitarian crisis is a public health emergency that needs to be addressed. The International Monetary Fund forecasts hyperinflation rates to reach 10,000,000%, and as a consequence, the Venezuelan health care system is in free fall. The country is experiencing a massive exodus of biomedical scientists and qualified health professionals. Sixty-six percent of the population lives in extreme poverty, amid escalating violence and a crumbling healthcare infrastructure resembling those of war-torn nations. Reemergence of arthropod-borne and vaccine-preventable diseases, along with the abandonment of all epidemiological surveillance and treatment programs, have turned Venezuela into a fertile ground for infectious disease epidemics with a documented spill-over effect to neighboring countries, becoming a regional health threat to the Americas.

Background

Long-term shortages of essential medicines and medical supplies, interruption of epidemiologic surveillance systems, weakening of immunization programs, and an unprecedented exodus of trained medical personnel have set the stage for the resurgence of previously-controlled infectious diseases.

Lara state is hyperendemic for a vast number of infectious diseases including American trypanosomiasis (Chagas disease), cutaneous Leishmaniasis, intestinal parasitosis and arboviral infections. Poor urban and rural communities are disproportionately affected due to the systematic marginalization from the already decaying health system.

Essential steps to addressing this health emergency include prompt and precise diagnosis and treatment, epidemiological surveillance, and educational campaigns on preventing medicine.

Molecular diagnosis in particular, is a valuable epidemiological tool with virtually no development in Venezuela. These modern techniques significantly increase diagnostic precision, since they detect the presence of pathogen's genetic material directly. Additionally, nucleic acid sequencing can provide information about microorganism's susceptibility to drugs, allowing the confection of tailor-made pharmaceutical schemes.

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The Project

The project focuses on the supply of medical and laboratory equipment and reagents necessary for low-cost molecular diagnostic as well as nucleic acid sequencing for the identification of infectious agents in vulnerable and high-risk populations in Venezuela.

In this sense, quickly and opportunely diagnosis on the etiology of infectious agents constitutes a critical step to guarantee the successful management and adequate containment of diseases and, even more so, in times of health emergency.

Although COVID-19 patients are currently restricted to government and selected private hospitals, should the situation change, this equipment is available and can be used for COVID-19 patients as required going forward.

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The project has 3 long term **milestones** after the reception and installation of the equipment:

1. **Detect** and **identify** infectious agents of viral, bacterial, fungal and parasitic origin through real-time PCR techniques.
2. **Monitoring** the course of diseases and the spread of emerging and re-emerging pathogens, allowing timely health responses to be carried out.
3. **Create** Epidemiological-Molecular Monitoring Programs as a response strategy to outbreaks caused by emerging pathogens aimed at symptomatic and asymptomatic infected individuals.



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Expected Results

- Contribute with local health services, specially Rotarians hospitals, in the appropriate diagnosis of infectious diseases (intestinal parasites, arboviruses, Leishmaniasis, Chagas disease, respiratory pathogens, among others), providing molecular diagnosis which allow the correct canalization and timely treatment of affected patients.
- Improve the diagnosis quality and accuracy, that can be offer to rural and urban communities in Lara state.
- Identification of WASH and Public Health needs to establish control programs to prevent and stop the transmission routes of infectious diseases.
- Evaluate in real-time the course of emerging and re-emerging infectious diseases outbreaks, with the aim of conditioning health centers to face relevant health situations.

Shipping of Equipment/Supplies

The shipping of equipment/supplies will be done through a “door-to-door” service by the U.S. based company Rudy Export. Rudy Export is an International company registered with the Federal Maritime Commission of the United States, with offices in the United States, including in Houston Texas and in the main cities of Venezuela.

Contact Information:

<http://rudyexport.com/>

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