



CKDu Field Investigation  
Northeastern Peru  
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**A Region Abandoned**  
**Panorama of possible CKDu in Northeastern Peru**



*Edmundo Rafael Aguilar Vasquez, 32, has suffered from Chronic Kidney Disease since he was 18 years old, after working with his father in the pepper and tomato fields, but doctors are unsure as to what to attribute his condition to. El Chumpon, Paijan, La Libertad, Peru. Photo Tom Laffay for LIN*

## Introduction:

From March 6 to March 12, 2017 I travelled through Northeastern Peru, meeting with doctors and researchers and visiting communities to investigate possible cases of Chronic Kidney Disease of unknown causes (CKDu) (In Peruvian Spanish, *insuficiencia renal crónica de causas desconocidas*.) Based on the geography and climate of NE Peru, the types of labor common to the area, and the fact that there is at least one study being conducted in the city of Tumbes where there appeared to be cases of CKDu, the La Isla Network team decided it would be valuable to visit the region. The areas visited were Trujillo, Chiclayo, Piura and Tumbes, to try to gain a panorama of the CKDu situation in an understudied region.



## Locations and communities visited:

Capital: Lima

Department: La Libertad

- Trujillo (regional capital)
- Casa Grande
- Chocope
- Chumpon
- Huanchaco

\*Note: According to Dr. Alberto Ayquipa in Chocope, other areas to visit patients are Chiquin, Chicama, Farias, Mocoyope, Paijan

**Department: Lambayeque**

- Chiclayo (regional capital)
- Tucume
- Motupe
- Lambayeque

**Department: Piura**

- Piura (regional capital)
- Sullana
- El Salitral
- Chira River Valley (Macara, La Huaca, El Arenal)
- Talara\*

**Department: Tumbes**

- Tumbes (regional capital)
- Tacaral
- La Esperanza
- Zorritos

**Summary of possible CKDu situation by location:**

**La Libertad:**

The environment is desert, with sand dunes spilling over onto highways which give way to fertile valleys full of sugar cane just meters from arid, rocky ground. Water in this area is scarce and large reservoirs upstream near the mountains, or *sierras*, fuel the agricultural operations, mainly sugarcane. The towns mainly rely on large, concrete water towers to supply drinking water to the population. Many outlying villages do not have potable water and people's living conditions are very basic. In the villages, typical construction consists of adobe, bamboo, woven palm leaves and mud. Many houses are also made of concrete, but the communities are interspersed with these dwellings and many areas, the people must fetch water from wells, rivers or reservoirs. The Casa Grande mill sits outside of a small town, also called Casa Grande, similar to Chichigalpa, Nicaragua (home of Ingenio San Antonio) where many people are employed by the mill. Speaking with locals, no one was aware of this type of kidney disease affecting anyone, including workers, although many people spoke of diabetes as an issue. Nearby in the town of Chocope, I visited the MATER Esperanza Dialysis Unit. Here I was told that there was a concerning amount of young people, mainly from the countryside, who were currently receiving dialysis.

**Lambayeque:**

About 2 hours north of the capital Chiclayo is a town called Motupe which is known for having kidney issues among the population. Many small towns on the way there towards the mountains were completely inundated by flooding, their infrastructure of pipes and roads completely destroyed. The town of Tucume sits besides a massive, ancient indigenous pyramid thousands of years old, eroded, but still standing over a town utterly crippled by a few weeks of rain. There were a number of CKDu patients in the area, all young, all from the countryside. Motupe is small and most people cultivate rice on the outskirts. It is known for being very hot and many people only recently received potable water within the past few years.

### **Piura**

Allegedly, for national political reasons, Chiclayo receives much more resources to deal with health issues, although Piura is more affected across the board. Here, visiting Dr. Joel Zapata, head of nephrology at the local hospital, it was very apparent that there is a major issue with possible CKDu. Nearby, in Sullana, there were many young patients, in their 30's and 40's who had worked in agriculture like bananas or rice, or had worked as fishermen or stevedores who were affected and receiving dialysis. The area was reminiscent of Central America with large banana and rice plantations, and many relatively young men affected. Due West of Piura towards the coast, are some of the poorest communities and most desolate countryside. In the Chira River Valley lie the communities of Macara and La Huaca where there were large brickmaking operations run under a blazing sun, El Arenal with rivers and canals and family sized plots for rice cultivation and nearby, the Ingenio Escudero sugarcane mill where workers return home from the fields in the late afternoon. Some doctors spoke of the Bajo Piura region where most people work in fields, they consume too much salt, eat a lot of fish and do not hydrate properly in a zone where temperatures regularly reach 35-40 degrees Celsius. North along the coast lies Talara where a few dialysis patients were from and claimed there were many sick young men.

### **Tumbes:**

On the Northern coast, near Ecuador, Tumbes is a rapidly urbanizing population. It is also home to the Centro de Salud Global (Global Health Center) which houses the local CRONICAS office and team as well. The CSG, run by Dr. Percy Vilchez Barreto, and CRONICAS team, led by Sergio Mimbelia, has been carrying out a salt replacement study in communities around Tumbes to reduce hypertension in the population. While possible CKDu did not seem to be a major issue, they were aware of a few cases and introduced me to one young female patient there. In the coastal town of Zorritos, South of Tumbes, an old fisherman told me that many men in his community also suffer kidney problems and could it be from not drinking enough water. The CSG has the community's trust and the facilities to mount any data collection necessary for long term studies and is interested in continuing the conversation about possible CKDu.



*Workers load a truck in the desert outside of Chiclayo where temperatures regularly reach 35+ degrees Celsius. Photo Tom Laffay for LIN*

### **Summary of labor and working conditions**

Peru's Northeast is desolate and paradoxically fertile. Speaking with many workers and former, possibly CKDu affected workers, I gathered the following. The region is known for producing virtually every fruit and vegetable that can be produced in Peru: sugarcane, rice, bananas, grapes, peppers, passion fruit, tomatoes, asparagus and more. People also work in construction, sand mining and on docks. In the banana plantations, the testimony of one man is that workers had to bring their own water, maybe only two liters for a day's work, and would share amongst themselves when someone didn't have any. Otherwise they may drink out of the local irrigation canals. Dock workers do not tend to drink much water, nor do the fishermen who spend weeks at a time out at sea and bring a limited supply of fresh water. In the sugarcane fields, mainly machines appear to cut cane, but men at least cut cane for seed. There was also talk of men migrating from a town called Chota coming to cut cane who don't hydrate but rather chew coca, who may have kidney problems. They were well protected with boots, pants, jackets and hats, but there was no shade anywhere to be found. City workers in the streets also had decent protection from the sun.



*Juan Carlos Zapata Mojayan, 39, who suffers from CKDu worked in rice and later banana plantations since he was 6 years old and would regularly drink from irrigation canals. He claims workers there had to bring their own water to work, which they would share or drink corn alcohol, or chicha, during work. El Salitral, Sullana, Piura, Peru. Photo Tom Laffay for LIN*

#### **CKDu affected community members**

**29 and 32 years old sister and brother** of La Libertad both suffer from CKDu and are receiving dialysis. Both had worked in the pepper and tomato *chacras*, or agricultural fields, with their father since they were young. The brother had begun working around the age of 14 and was diagnosed with CKDu at 18, now on dialysis for 14 years paid for by an agricultural social security. The sister had worked less and also studied, when at 24 years old she claims she had problems with her vision, headaches, and after three months was diagnosed with CKDu and began dialysis. Both had worked around chemical herbicides and grew up carrying water from a community well a few kilometers from their home which is situated in the middle of agricultural fields of corn, asparagus, sugar cane, tomatoes, watermelon and peppers.

**23 years old man** from Motupe who currently studies in the city of Lambayeque and receives dialysis treatment three times a week at the nearby hospital in Chiclayo. Invited to his parents home, his father spoke of his son's condition as well as the family's. They had not had potable water until September 2016 and before hand had always had to fill barrels of water in Motupe

and bring it back to their home in the countryside. While the young man had always worked with his father in his brick making business during vacations, he had never worked strenuous manual labor for long periods of time. He hopes for a kidney transplant but does not have health insurance that would cover the operation.

**39 year old man** outside of Sullana had worked 10 years carrying bananas on a plantation before being diagnosed with CKDu. He claims workers there had to bring their own water to work, which they would share or drink corn alcohol, or chicha, during work. He had previously worked in the rice fields since he was 6 years old.

**67 year old man** outside of Sullana had also worked in banana plantations and in burning plantain leaves for a *tamale* business before being diagnosed and can no longer work. He spoke of local communities getting their water straight from the irrigation canals that run through the plantations.

**39 year old woman** from a coastal town two hours away called Talara. Just travelling to her dialysis treatment in Sullana costs her 40 Peruvian Soles or roughly US \$12, three times a week. At an average of US \$144 a month, the cost is significant and difficult for affected families to pay. She had only ever worked as a nurse, never hard physical labor, but she cited the lack of water in Talara, that only comes every two days and people don't consume much as they preserve it in their barrels. She recently lost a cousin, a young man who worked as a stevedore on the docks, to CKDu, and now his brother who worked with him has been diagnosed.

**23 year old woman** had moved to Tumbes at the age of 12 after being raised in Piura, her family having worked the banana plantations getting their water from local canals and wells. Unable to work, she assists her cousins around their home and goes to dialysis treatment three times a week in Tumbes which costs her about US\$3 each day for the trip.



*Team members of the Global Health Center visit communities to collect urine samples as part of a three year, salt replacement, study being carried out to try to reduce hypertension in the population. Tumbes, Peru. Photo Tom Laffay for LIN*

### **Institutions and individuals and their work:**

#### **Medical community**

##### **Dr. Antonio Ortiz**

CRONICAS Universidad Peruana Cayetano Heredia - Investigator - Lima / Tumbes  
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One of the lead investigators on a study his team is in the final stages of data collection in Tumbes which consists of a salt replacement study in 6 communities to reduce hypertension among the population.

##### **Dr. Abdias Hurtado**

Nephrologist - Lima  
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Currently near publication of a study about chronic renal problems associated with high altitude in Bolivia. Connected to nephrologists in Piura.

**Dr. Joel Zapata**

Nephrologist - Piura

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Chief nephrologist at the hospital in Piura very concerned about the possible CKDu situation in the area. He returned to work in Piura out of his concern after studying in Lima.

**Dra. Flor Sanchez**

Nephrologist - Piura / Lima

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**Dr. Jose Ramirez**

Nephrologist - Piura

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**Sergio Mimbela**

Project Coordinator Centro de Salud Global, Tumbes

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Leading the field team in data collection in Tumbes during the salt replacement study in 6 communities to reduce hypertension among the population.

**Dr. Percy Vilchez Barreto**

Direceto Centro de Salud Global - Tumbes

Focuses mainly on infectious tropical diseases, but is working together with CRONICAS as an included entity in studying chronic diseases, like hypertension in the case of Sergio Mimbela's study since 2014. He is interested in discussing the CKDu issue more with LIN and how we may collaborate and explained that in their very good labs and storage facilities, they have blood and urine samples from the region that could be useful for a future study.

**Sujeli**

Administrator - MATER Renal Dialysis Unit, Chocope, La Libertad

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Very helpful administrator concerned with possible CKDu affecting young people from the countryside.

**Dra. Carmen Suarez**

Chief Nephrologist Regional Hospital Chiclayo - Chiclayo, Lambayeque

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**Dr. William Cuzca**

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## **Local contacts**

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\* (Potential Media Fixer)

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### **Padre Davi Farfan**

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### **Juan Manuel Zapata**

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### **Jimmy Peña**

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### **Casimiro**

Driver / former fisherman - Tumbes  
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*Team members of the Global Health Center visit communities to collect urine samples as part of a three year, salt replacement, study being carried out to try to reduce hypertension in the population. Tumbes, Peru. Photo Tom Laffay for LIN*

### **Recommended next steps**

**Build our relationships** between La Isla Network and CRONICAS based in Lima and Tumbes, but begin to focus investigation in Piura, particularly focusing on Sullana, Talara and the Chira Valley. Another trip should be focused on this area, coordinated with Dr. Joel Zapata.

**More observation** could be done to understand labor habits and safety in the many industries and crops that exist in the region. There are large industrial agricultural operations, at least in sugarcane like Casa Grande and Escudero sugarcane mills, who could be contacted about their workers health and brought into discussion and should be contacted by the team that forms.

**Bring media attention** to the region and this issue in coordination with the ensuing research effort. The people, the landscape surrounding them, the variety of agricultural and other forms of labor and the fact that it is totally under addressed warrants media coverage in the form of photojournalism and documentary film which could follow the ensuing research effort as well as patient's personal stories in this abandoned region.

### **Conclusion:**

It seemed that the causes of much of CKD in the NE are unknown, however there is neither the financial support from the government or elsewhere, nor the coordination or infrastructure in place among the regional health systems to carry out any major studies on the affected populations. Piura is the epicenter of what appears to be a CKDu issue in the region, including outlying towns like Sullana, the Chira River Valley and Talara. This area needs to be investigated in depth, and fortunately the local medical actors are keenly interested in the issue and in collaborating with international and national networks to address it.

### **See more photographs**

to accompany the report by following the link below. For captions and information see the “Details” tab on the right hand side of the Google Drive:

<https://drive.google.com/open?id=0B6bD-E2w1IzoZ1I3WE54UHpDa2M>



*Dr. Joel Zapata, chief nephrologist of the hemodialysis ward in Piura says that that 30% of his dialysis patients are young men, 20-30 years old suffering from CKDu. Photo Tom Laffay for LIN*



Thank you for reading. Please contact us at [jason@laislanetwork.org](mailto:jason@laislanetwork.org)

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