

## Peruvian Amazon Elective: A Reflective Essay

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**Adam Pearce - 1209400**

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## Summary of elective placement

My elective period was spent working with a small NGO named DB Peru<sup>[1]</sup>. They are based in Lima, and carry out the majority of their work in the Amazon River basin in north-east Peru. They have 13 years of experience working with small village communities on the banks of the Napo River, which is a tributary of the main Amazon. Their work consists of many aspects of healthcare, including provision of medical supplies, running of village-based medical and dental clinics, delivery of screening programmes, as well as a large focus on healthcare education.

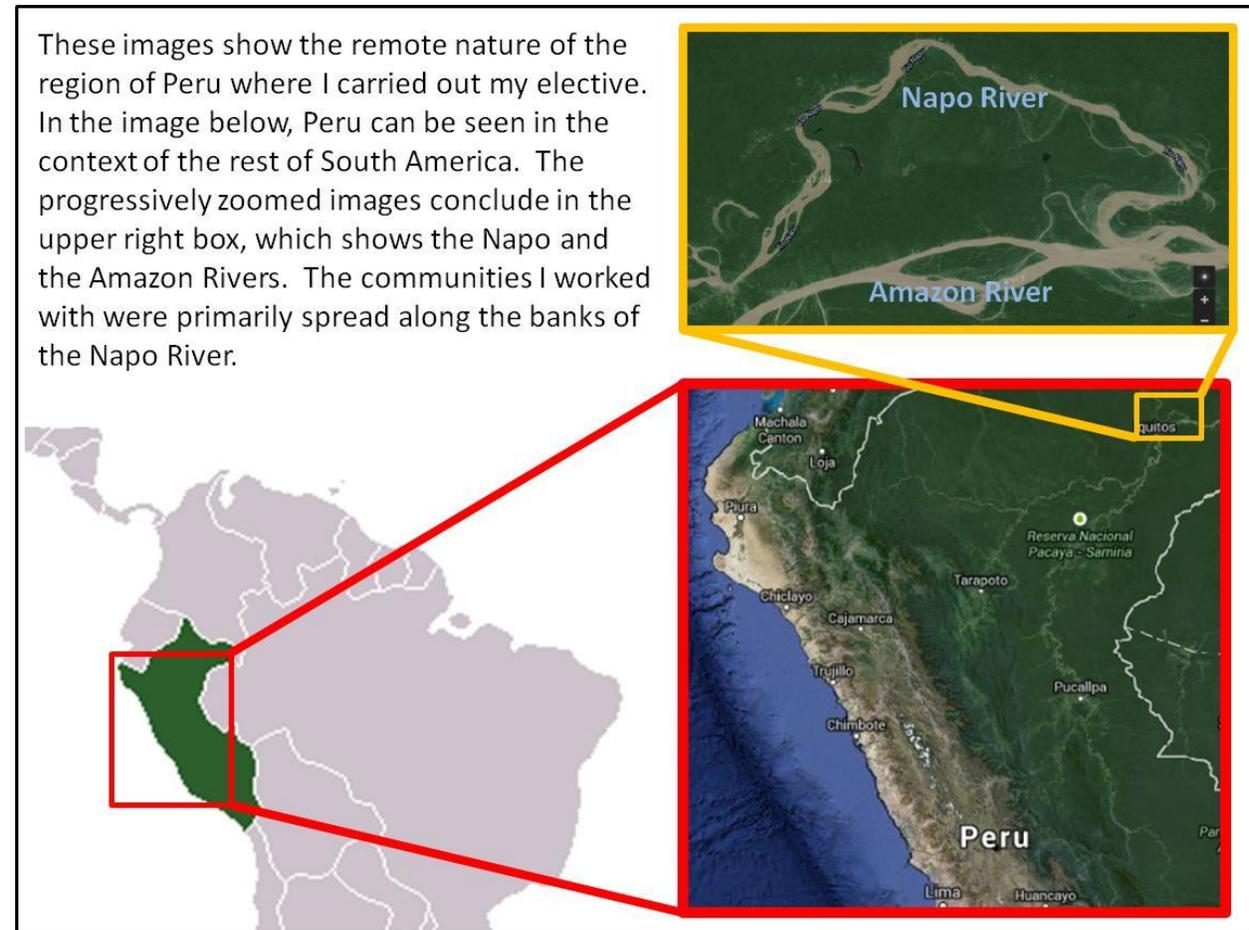


Figure 1 - Map showing area of Peru where I spent my Elective. Images © Google Images / Google Maps

I chose to approach a small NGO for my Elective, as I hoped that this would give me an opportunity to see first-hand the full range of activities involved in delivering humanitarian healthcare to people in such a remote setting. Similarly, I was aware that DB Peru's contacts would also afford me the option to visit and participate in delivery of care within Peru's national healthcare system. I felt that this would give me a better chance to witness the full range of healthcare that people living in this region have available to them.

The intersection of the Napo and the Amazon Rivers occurs approximately 50 miles downriver from the city of Iquitos. This is the main Amazonian city in Peru and is the largest city in the world that cannot be

accessed by road. I spent some of my time in Iquitos and the majority of my time in the river basin region shown above.

My work with DB Peru included the following assignments, in approximate chronological order.

- A one-day visit to the regional hospital in Iquitos.
- Delivery of medical clinics – both village-based and at a local government-run Health Centre
- Organisation and delivery of teaching for local health workers
- Planning and delivery of a village-based research questionnaire on women's health issues
- Additional organisational and administrative duties as needed

Outside of my work with the NGO, I also made time to engage in some social and welfare-based activities. This included a two-day period of voluntary work over the Easter holiday at an Orphanage / Residence for socially disadvantaged children.

## Summary of personal learning objectives

Before embarking on my elective, my overall objectives were to develop:

- my clinical skills in a resource-poor environment without access to the full range of diagnostic technologies available in the UK
- my understanding of global healthcare assessment and planning
- my knowledge of Spanish within a medical context

Within the headings of Knowledge, Skills, Attitude and Context-Specific, I set myself the following learning objectives:

<p><b><u>KNOWLEDGE</u></b></p> <ol style="list-style-type: none"><li>1. Develop knowledge of epidemiology, assessment, management and other issues related to infectious/tropical diseases endemic to this region. Examples may include Tuberculosis, Dengue Fever, Malaria and Leishmaniasis.</li><li>2. Develop existing Spanish knowledge to a level sufficient to conduct medical consultations.</li></ol>
<p><b><u>SKILLS</u></b></p> <ol style="list-style-type: none"><li>3. Perform general health assessments based on history and examination only, and formulate a basic management plan. Check assessment and plan with medical supervisor.</li><li>4. As part of planned work on DB Peru's Women's Project, design and conduct at least one Verbal Autopsy – a retrospective interview-based method for determining causes of death - according to guidelines provided by the World Health Organisation*.</li></ol>
<p><b><u>ATTITUDE</u></b></p> <ol style="list-style-type: none"><li>5. Work effectively within a resource-limited team of medical, nursing and dental professionals in temporary clinics, delivering healthcare to people with little access to or knowledge of modern medicine.</li></ol>
<p><b><u>CONTEXT-SPECIFIC:</u></b></p> <ol style="list-style-type: none"><li>6. Plan and deliver at least one session of healthcare education to the local people.</li></ol>

**Table 1- Personal Learning Objectives**

I feel that I was able to go beyond achieving these learning objectives during my time in Peru. The following chapters provide evidence for this via a consideration of the experiences I gained within each setting where I worked. I also highlight the ways in which each experience contributed to my personal and professional development and reflect on how this may shape my future career.

\*By the time of my elective, the methodology of this part of the Women's Project had been changed slightly. The surveys I conducted were therefore done in line with both the USAID Demographic and Health Survey<sup>[2]</sup> and The WHO World Health Survey questionnaire<sup>[3]</sup>, adjusted to focus specifically on women's reproductive and sexual health outcomes.

## Elective Experiences

### Visit to the regional hospital

My first experience of healthcare in this region of Peru came during a one-day visit to the Regional Hospital in Iquitos. This is a tertiary care centre that receives referrals not only from various clinics around the city, but from the entire surrounding region, including the villages that I was due to work in for the rest of my elective. A contact of the NGO was available to provide a tour of the hospital, which is shown below.

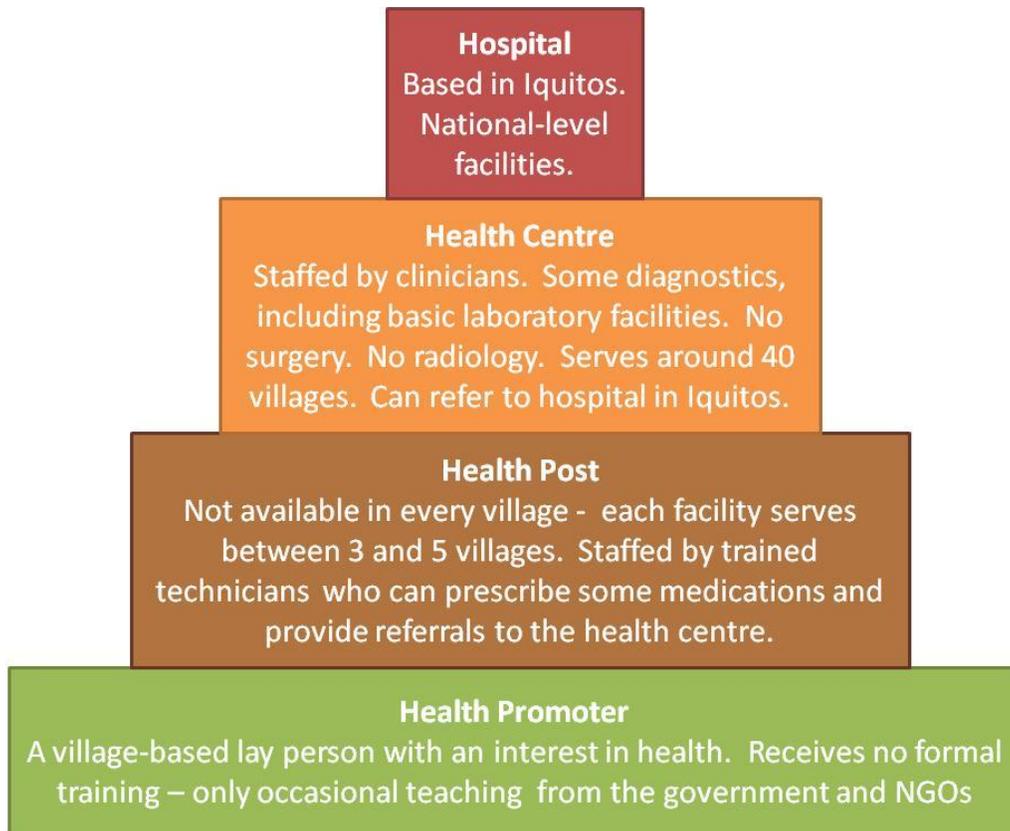


Figure 2 - The Regional Hospital in Iquitos

As may be expected, the facilities were significantly more basic than those in the hospitals I had experienced in the UK. I found it extremely educational to see facilities such as the laboratories, where most of the work is still done via the microscope and there are very few machines to take the analytical burden away from the technicians and pathologists. It helped me to realise the value of laboratory tests, and will be one of the factors that help to ensure I am not wasteful when ordering investigations in my future role as a doctor.

The tour of the hospital was a great start to discovering how the healthcare system works in Peru. At this stage, the position of the hospital within the national system was not completely clear to me, but, having seen it, the future settings would make more sense.

A simple schematic representation of the hierarchy of the health system in this rural region of Peru is shown below.



**Figure 3 - Schematic of the national health services available to the people living in the region I visited**

I also had an opportunity to speak to two doctors at the hospital, who were able to prepare me for the types of diseases I should expect to see in the jungle. One thing I learned from them was that Dengue Fever is very much an urban disease compared to Malaria, and that I would be far more likely to see cases of Malaria than Dengue during my time in the villages. I also learned that doctors in this region rapidly come to trust the intuition of the local people when it comes to diagnosing illnesses such as Malaria, as its prevalence leads to many expert patients.

### **Medical Clinics**

My clinic experience came in two forms during the elective. Firstly, I participated in two week-long travelling clinics with the NGO – one near the start of my six weeks and one at the end.

Having sent advance warning during the previous few weeks, we arrived to a new village each day by boat, offloaded all of our equipment and medication, and worked until all of the patients had been seen. During the first week, our team consisted of the following people, with me as the sole medical student.

- Two doctors,
- One nurse practitioner
- Three nurses
- Six nursing students



Figure 4 - The team at work setting up a clinic in a village school building

My role within this highly multi-disciplinary team was to see patients with one of the nursing students – conducting a history and examination - and then to formulate a management plan. The plan was then checked by one of the clinicians, and the patients proceeded to the makeshift pharmacy to pick up any medications that had been prescribed. This was exactly the sort of experience that I sought when I was planning my elective, as it required a strong focus on the core clinical skills of history taking and examination. Other members of the team were always willing to help my learning and development when I was faced with a challenge my current experience. An example of this was learning how to conduct a top-to-toe new baby check.



Figure 5 - Learning to examine an infant. Image © Karl Ault<sup>[4]</sup>

I found it interesting that the majority of the presenting complaints were familiar to me from my GP rotation, with general aches and pains, headaches and viral respiratory infections being a large proportion of the workload. The key differences were that the underlying causes of the symptoms were often rather different from what would be expected in a UK population. The vast majority of the aches and pains were due to long hours engaged in agricultural work, with lack of access to glasses – either for reading or for protection from the sun – being a common cause of headache, along with dehydration.

Other significant differences came from lack of access to healthcare, which I noted had various effects on the patients. Firstly, chronic conditions are significantly less well managed in such a rural environment. The patients are reliant on their medications being sent on a monthly basis from the health centre in a town which is a few hours away by boat. One notable example is the lady I can be seen attending to in the photograph below.



**Figure 6 - Attending to a patient with uncontrolled diabetes. Images © Karl Ault<sup>[4]</sup>**

This lady had suffered with diabetes for a number of years, and when I saw her was reporting significant visual loss and recurrent urinary tract infections. On examination, I also discovered that she was suffering from what was most likely extensive lower limb diabetic neuropathy. We were able to offer her antibiotics for her urinary tract infection, but not much in terms of longer-term medication. We did, however, write a letter for her to take to the local health post with a view to them providing a reference for her to be seen by a specialist. The key thing that this taught me was to never take for granted the excellent potential to manage chronic diseases that our healthcare system provides. I resolve to ensure that my knowledge and skills remain up-to-date and at a sufficiently high level to ensure that this opportunity to do the best for my patients is not missed.

Another, and perhaps less obvious way that lack of access to medical attention affects the people in this area is by impacting on their health literacy. I found that many people had difficulty communicating a history of their symptoms, often because they had never been asked to do so before. As I had planned in my learning objectives, my medical Spanish knowledge improved vastly during my time in Peru, but I often found that this was not the limiting factor in my ability to communicate with patients. In the UK, it is easy to take for granted that our patients will know how to tell us what they have been experiencing, but this made me realize that I should not assume that this is the case. One way I can learn to deal with this is to slightly modify my approach on the wards during my senior rotations. While it will still be

valuable to find a 'good historian' to help me tune my diagnostic skills, I will also seek out the less good historians to help this aspect of my communication skills.

As well as the village-based clinics, DB Peru had arranged for me to spend time working with a doctor in the government-run Health Centre (see Figure 3 and Figure 7) in the nearby larger town of Mazan. I saw a number of patients under observation from the doctor, including

- An 11 year-old boy with an abscess on his leg, probably as a result of an insect bite
- A 14 year-old girl with malaria
- A 3 year-old toddler with acute lymphangitis, again probably as a result of an insect bite
- A 2 month-old baby with pityriasis alba

One thing that struck me was a larger proportion of younger patients compared to a similar setting in the UK. I feel that there are two reasons for this. Firstly, many regions in Peru have not yet completed their Epidemiological Transition, which means that much of the burden of disease still falls on the young as a result of infectious conditions. Secondly, travel requirements – the Health Centre is many hours from many people's homes - mean that fewer elderly people are physically able to attend.



Figure 7 - The government Health Centre in Mazan

There were many cases of malaria presenting to the Health Centre. Depending on the time of year and the breeding cycle of the mosquitoes, in some areas as many as 50% of the population are affected at any one time. The below shows the government's treatment schedule for malaria, which is offered as a free treatment to anybody, regardless of their Social Security or Insurance status. This is also true of treatment for Tuberculosis, Dengue Fever and Leishmaniasis.



- One obstetrician from the USA
- Three family doctors from the USA
- One doctor / PhD candidate from Australia
- Four medical students, including me.
- The two founders of DB Peru

Another challenge was that among this group, there were significantly varying levels of Spanish. None of the Health Promoters speak English, but it was important to me that everybody on the team felt involved. I therefore tried to pair people up into teams of two - based on one good Spanish speaker and one lesser Spanish speaker in each team – who worked together to plan and deliver each session. In discussion with the team, I decided on the following topics for teaching:

- Women’s Health and Pregnancy
- Fever
- Introduction to DB Peru’s Cervical Cancer Screen and Treat project (ABCS) <sup>[1]</sup>
- Cough
- The local procedure for a patient with TB
- Dermatological conditions
- Gender equality in health (part of DB Peru’s ongoing Women’s Project)
- Concluding discussion

I taught the session on fever and helped chair the discussion on Gender Equality in Health. I incorporated an interactive element to my teaching – including some cases and a word-matching game – that was well received and then incorporated into some of the subsequent sessions. I was pleased to have had the opportunity to go well beyond my planned learning objective in this aspect of my elective.

I think it is important that doctors and other healthcare professionals have an interest and skills in teaching. There are many opportunities to teach, whether this be to other professionals, students or, indeed, our patients. This experience helped me to understand that I would enjoy a role that includes the planning and delivery of education, and I will seek these opportunities in the future. As an immediate example of this, I am now looking into Academic Foundation Posts within Medical Education.



Figure 9 - Teaching the Health Promoters

## Research on Women's Health

DB Peru has an ongoing Women's Project that aims to improve the health of the female population in this region of Peru. Just before the start of my elective, the organisation launched a project called *Amazon Community-Based Participation Cervical Cancer Screen and Treat (ABCS)*<sup>[1]</sup>, and scheduled the first phase of the project to coincide with my elective. The project is intended to be split into three phases:

- Phase 1 – Women's health baseline data survey
- Phase 2 – Cervical cancer education
- Phase 3 - Screen and Treat programme delivery

The same team that participated in the teaching described above was responsible for carrying out the baseline data survey. The intention of Phase 1 is to generate epidemiological data and inform the team on the topics that should be included in the education phase. We spent ten days visiting six villages, interviewing 119 women in total. For many, this was their first experience of such a survey, and there were many social and cultural topics to discuss. The team did this with great respect and sensitivity and the survey was well received in all of the villages.

Before the main survey started, I led a team that piloted the questionnaire and made recommendations for content and linguistic changes. During the main survey, as one of the more experienced Spanish speakers in the group, I led a two-person research team on each day. I feel extremely privileged to be one of the few people in the world who has had the opportunity to engage with the women in this region on such a personal level. It has really impressed on me the importance of understanding people's background, understanding and beliefs when delivering healthcare and this is something that will be continue to be of great value to me when I interact with patients.



Figure 10 – Conducting the Women's Health surveys. Image © Karl Ault<sup>[4]</sup>

It was also possible to provide ad-hoc teaching on some of the topics covered as we were conducting the surveys. Initial analysis of the data suggests that only 28% of the women had ever heard of cervical cancer, only 7% could correctly explain what it is, and only 21% knew the main symptoms<sup>[6]</sup>. One of my most rewarding moments of the ten days was sitting in a school with a group of six women from one of the villages, and explaining to them what cancer in general is, what cervical cancer is, the symptoms and the importance of screening. They had such an appetite for the knowledge, and I could sense how important this would be in terms of securing their future involvement with the Education and Screen and Treat phases of the project.

I learned many things about ways of life, feelings and attitudes towards health and local health practices from the women that I interviewed. One of the things I had not expected, but which I learned a lot about, was the medicinal plants of the rainforest. These herbal remedies have been used for centuries to treat common ailments such as aches, pains and fevers. I was also fortunate enough to be able to attend a discussion with a local Shaman, who described how the local healers learn about the plants and

the uses they put them to. The images below show a selection of the plants that are still in regular use by people in this part of the Amazon.



Figure 11 - Some medicinal plants of the rainforest, and their respective uses

Overall, it was an honour and a humbling experience to participate in this ground breaking research into the health and medical practices in this remote region of the world. I remain in touch with the doctor leading the project, and am in discussion with her regarding publication of articles based on our experiences.

### Orphanage volunteering

Peruvian healthcare centres close during the Easter period. Through a personal contact, I was able to arrange a period of volunteering at an orphanage in Iquitos, called Arco Iris<sup>[7]</sup>. Set up by a Dutch couple and employing local staff and volunteers, this residential school accommodates children who have been subject to very difficult home environments. The children continue to attend their normal school, but additional social, cultural and educational activities are provided for them by Arco Iris. They undertake daily maintenance and cleaning activities alongside their studies, sports and social activities.

Before leaving the UK, I visited my former secondary school to initiate a project - based on my elective - with 120 year-8 students who study Spanish. Inspired by my real-life examples of the value of foreign languages, the children produced posters – in Spanish – introducing themselves and their daily routines to Peruvian schoolchildren. I used these posters at the orphanage as the basis for two English lessons, and now have a set of posters from Peru that I will take back to my former school in mid June. As well as teaching English at the orphanage, I also helped with games such as hunting for and then decorating Easter eggs.

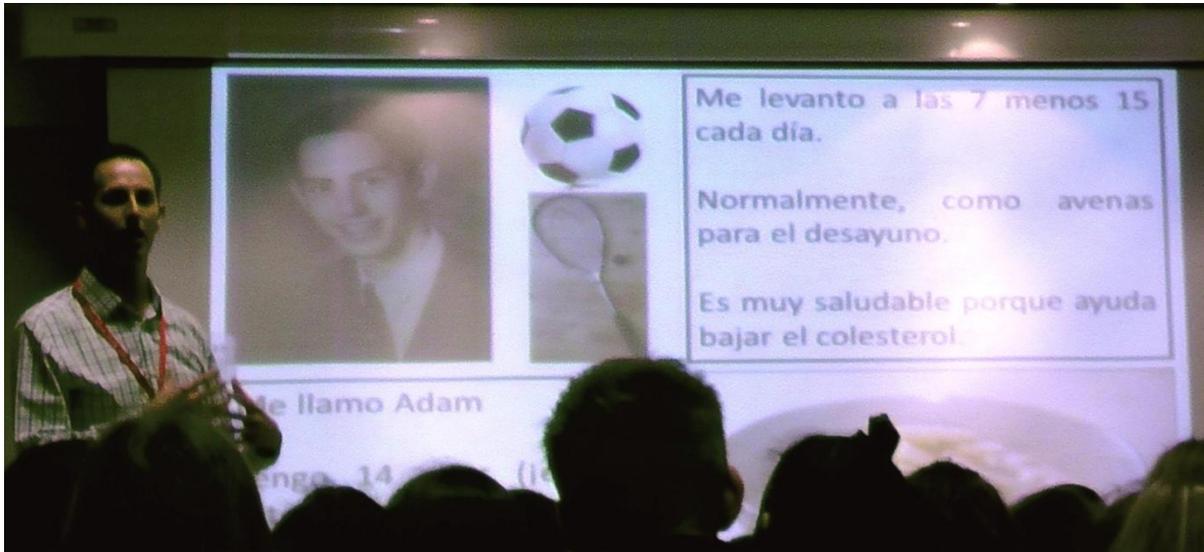


Figure 12 – Presenting at my former secondary school before my elective, and the resulting English lesson at Arco Iris orphanage



Figure 13 - Easter games at Arco Iris orphanage in Iquitos

Although I was only there for a short time, my experience at the orphanage impressed on me the importance of social care. Despite their difficult backgrounds, all of the children are thriving within a creative and supportive environment provided by caring volunteers from their local community. I will seek similar ways to help my own communities in the future, particularly through fostering strong links between medical and social care.

## Conclusions

I feel very privileged to have spent time working with DB Peru in this fantastic part of the world. My experiences demonstrate that I fully engaged with my host organisation and became a much-valued team member. This sentiment was expressed in the feedback from my supervisor. Even the seemingly smallest tasks – such as shopping for the team’s food for our ten-day health survey trip – helped me to appreciate the hours of work and planning that go into delivering each hour of humanitarian healthcare or education in the villages. I learned a lot about my ability to do this sort of work, and have come to appreciate the role that humanitarian healthcare can play alongside national services in remote settings. I look forward to the opportunity to return to Peru in the not-too-distant future.

## REFERENCES

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