



Cleft surgery in Peru

Peru is expanding access to surgery and care for patients with cleft conditions in remote areas through intensive capacity-building led by local volunteers. Jacqui Thornton reports.

For the 2009 *Lancet* study see *Seminars Lancet* 2009; 374: 1773–85

For more on oral health see <https://www.who.int/news-room/fact-sheets/detail/oral-health>

For a systematic review and meta-analysis of global cleft palate see *J Stomatol Oral Maxillofac Surg* 2022; 123: 110–20

For more on the global incidence of cleft palate see https://link.springer.com/rwe/10.1007/978-981-15-3889-6_129-1

For more on the association of orofacial cleft with environmental factors see *J Glob Health* 2020; 10: 020410 and *Lancet Global Health* 2019; 7 (special issue): 519

For more on the correlation of orofacial cleft birth and altitude see *Cleft Palate Craniofac J* 2025; published online Sept 24. <https://doi.org/10.1177/10556656251378598>

In Operating Room 6 at the Hospital Nacional Dos de Mayo in Lima, three senior plastic surgeons are discussing the patient in front of them. Neilith, 10 years of age, is having a bilateral cleft revision after three previous surgeries had poor outcomes. She and her family had travelled 10 h by bus from her home in the Huarochiri province on mostly unpaved roads in the Andes.

Conducting the operation is Renato da Silva Freitas, a Professor of Plastic Surgery, and head of unit at Federal University of Paraná in Curitiba, Brazil. He is training Carlos Mascaro, the Director of Plastic Surgery at Dos de Mayo, who is an accomplished specialist himself—but not yet in cleft.

Mascaro wants to become accredited in cleft surgery to expand capacity in a specialism affected by backlogs. Currently, in his team of four plastic surgeons at the unit, only one is trained in cleft surgery, conducting about 20–30 operations a year. Mascaro aims to increase this number to 120.

Looking on is another Peruvian cleft surgeon working in private practice, who is training health professionals on a second table. He swiftly corrects a unilateral cleft in Jhon, who is 10 months of age. Jhon's parents

had travelled for 2 days, by boat and bus, from Pucallpa, a city deep in the Amazon jungle.

All the trainers are volunteers for the non-governmental organisation Operation Smile, which is running an intensive 3-day training programme in the hospital, enabling 39 patients to have life-changing operations, and upskilling three surgeons, two anaesthesiologists, a paediatrician, four nurses, and other allied health professionals. It is the second of three such programmes at the public hospital this year; others are planned elsewhere in Lima and further afield in the country's second city, Arequipa.

At Dos de Mayo, the surgical volunteers are led by cleft specialist Celinda Huapaya, an adult and paediatric plastic surgeon in Lima with 40 years' experience, who says there are many late presentations due to lack of awareness and access. Ideally, cleft lip should be operated on at 6 months, and cleft palate at 12 months. She told *The Lancet*, "Patients from the interior have to travel long distances for surgery. There's a lot of poverty, and a high unmet need—we still see adults with cleft."

Operation Smile Peru works hard to raise awareness and find suitable surgical candidates for free treatment as part of its independently-run training programme, but with the support of the Ministry of Health. It carries out social media, newspaper and broadcast outreach and even places adverts on electric bills to highlight the screening days. For example, Neilith's family found out about the opportunity from Facebook.

José Núñez, the Vice President of the Peruvian Society of Plastic Reconstructive and Aesthetic Surgery, said there is no registry for cleft surgery in Peru but estimates about 2000 cleft

operations are done annually in the country, mostly in Lima, where there are four specialist referral units. He estimates that another 1000 people could benefit from surgery. "I would do more if they would come", he says.

Orofacial clefts, the most common of craniofacial congenital conditions, can manifest in a variety of forms and severity: isolated or combined cleft lip and palate, complete or incomplete, and unilateral or bilateral. In a 2009 *Lancet* study, Mossey and colleagues estimated a global prevalence of 1.7 per 1000 livebirths. Current estimates are derived from a combination of regional birth defect registries, hospital-based studies, and meta-analyses with wide variation in different studies and populations. Prevalence is highest in Asian and North and South American populations, and lowest in African populations. Although genetics plays a part, risks include poor nutrition, smoking, and other environmental factors particularly relevant in the Andes, such as indoor open flame cooking and altitude.

In Peru, published studies and regional data sources report an incidence of about one in 700 livebirths, rising to one in 600 in the Andes. This equates to about 650 babies born every year with a cleft condition.

This small number underplays the demand for surgery: there are backlogs of untreated patients due to lack of awareness; an inability to pay and travel for treatment; a shortage of trained surgeons; and a need for revision surgery. Many children are given well meaning primary surgery by surgeons without the necessary expertise. A third of the operations done in Lima in March were revisions in older children and adults, including two men aged 38 and 64. They are often the trickiest cases.



Baby Jhon before surgery by Operation Smile volunteers in Peru

Since the late 1990s, Peru has been pushing to universalise health insurance coverage and improve access to primary health care, which has been lauded as a global exemplar. Although treatment for cleft conditions is officially recognised within Peru's Essential Health Insurance Plan, which lists all conditions health insurers must cover nationwide, there is no dedicated surgical programme or tracking of care.

There are four specialist cleft centres, all in Lima, which operate within the state-funded public health insurance, *Seguro Integral de Salud*, that offers free care in public hospitals for unemployed or the lowest-paid Peruvians. For those who live in remote areas, eligible patients often cannot afford the associated travel and hotel costs, and public hospitals closer to home might not have trained teams or surgical capacity.

The wealthiest use the private sector, *clinica* hospitals, where a handful of cleft specialists operate. Working people who have employer insurance (30% of Peruvians) must use a certain category of hospitals (*EsSalud*), where there is little cleft care available. In an audit of patients arriving at Operation Smile Peru programmes, 63% said they would be unable to receive surgery without the help of the non-governmental organisation.

Unsurprisingly, these organisations—Operation Smile is one of nine in Peru—have stepped in to fill some of the gaps. In April, the Ministry announced it was enabling 80 free surgeries working with other non-governmental organisations. Operation Smile, which began in 1999, says that its offering is differentiated by its emphasis on training. It has trained 18 surgeons in cleft as well as more than 100 cleft specialists in non-surgical disciplines, including anaesthesiologists, biomedical technicians, nurses, oral health practitioners, paediatricians, post-anaesthesia care physicians, psychosocial providers, and speech therapy professionals. Even for patients who have timely surgery, there is a need

for specialist speech therapy, ongoing specialist dental treatment, nutrition guidance, and psychosocial care before and after operations, which Operation Smile provides. For children treated later, these issues will be compounded. Quite apart from looking and sounding different, with resulting stigma and possible school refusal, they will have difficulty eating and drinking and may suffer malnutrition and poor communication skills.

In 2017, an internal Ministry of Health report recommended that cleft care be decentralised within the health system and expanded to regions with high unmet need where hospitals have an existing plastic surgeon who could be trained in cleft care. But implementation has proved difficult in a country that has had 20 Health Ministers overseen by eight different Presidents, with many competing priorities. Operation Smile is now partnering with the Ministry to, in effect, help achieve this decentralisation. In 2022 it expanded and formalised its training programmes. In 2023 it signed a 5-year Framework agreement with the Ministry of Health enabling collaboration with all public hospitals to increase capacity to provide safe, timely, and quality care for cleft patients.

In a statement to *The Lancet*, the Ministry of Health said it had implemented nationwide strategies to reduce surgical backlogs, particularly following the COVID-19 pandemic. It confirmed it was working with Operation Smile, and said the 5-year agreement will be renewed automatically for an additional 2 years, supporting continued efforts to strengthen access to surgical care nationwide.

Lizet Campos, Country Director of Operation Smile Peru, said: "Our trainings, hospital partnerships, and investments are designed to be coordinated with the country's needs and embedded within the public health system, ensuring sustainability

rather than parallel implementation." Last year it introduced a hub and spoke model to bring care closer to patients' homes as part of its new global commitment, Operation 100, which, according to Los Angeles plastic surgeon Caroline Yao, who is the non-governmental organisation's Senior Vice President of Research and Patient Metrics, was in part inspired by the *Lancet* Commission on global surgery.

This meant that as well as having so-called spokes at two district hospitals in Lima, and one in nearby Callao, since 2025 it has a spoke in Arequipa, Peru's second-largest city in the south, 630 miles away. The organisation provides equipment and outfitting of clinical areas as well as regular medical and surgical training in all these sites. Furthermore, in a new partnership, it is sending clinical teams to patients in Hospital Regional Cayetano Heredia to have surgery in Piura in the northwest tip of the country.

By June, 2026, about 430 patients will have been treated in the country through the organisation's volunteers. It aims to facilitate surgery for 4740 patients over 5 years. The organisation is also attempting to tackle access to cleft care in remote areas by helping to develop an innovative artificial intelligence (AI)-enhanced app, using Peruvian and other Latin American voice samples, which could enable remote speech therapy and triage future surgery needs, produced in conjunction with Microsoft's AI for Good.

Volunteer trainers, such as anaesthesiologist Karen Contreras Alvarez, told *The Lancet* that, as a Peruvian, she would love the system to work without the need for non-governmental organisation input, ensuring cleft patients have the care they need, "but we are not in an ideal world". She adds, "It's very valuable for me, as it is for other health professionals here, that Operation Smile trains them, so they can replicate their efforts across the health system."

Jacqui Thornton

For more on how Peru improved access to primary health services see <https://www.exemplars.health/topics/primary-health-care/peru/how-did-peru-improve-access-to-primary-health-services>

For more about Operation Smile see <https://www.operationsmile.org/about-us/our-story-impact/>

For the *Lancet* Commission on global surgery see <https://www.thelancet.com/commissions-do-global-surgery>

Jacqui Thornton's outward travel to Peru and accommodation was covered by Operation Smile.