



**La chaîne
de l'espoir**

Together, let's save children

2021

Activity Report





Contents

Our identity	• 04
Zones and axes of intervention	• 05
2021 in figures	• 07
Assessment of the year 2021	• 08
The year's highlights	• 09

OUR ACTIVITIES BY THEME

Outlook for 2022	• 35
Principles of financing and execution of activities	• 36
Governance	• 38
Human resources	• 41
Finances	• 42
Index	• 45
Acknowledgements	• 46

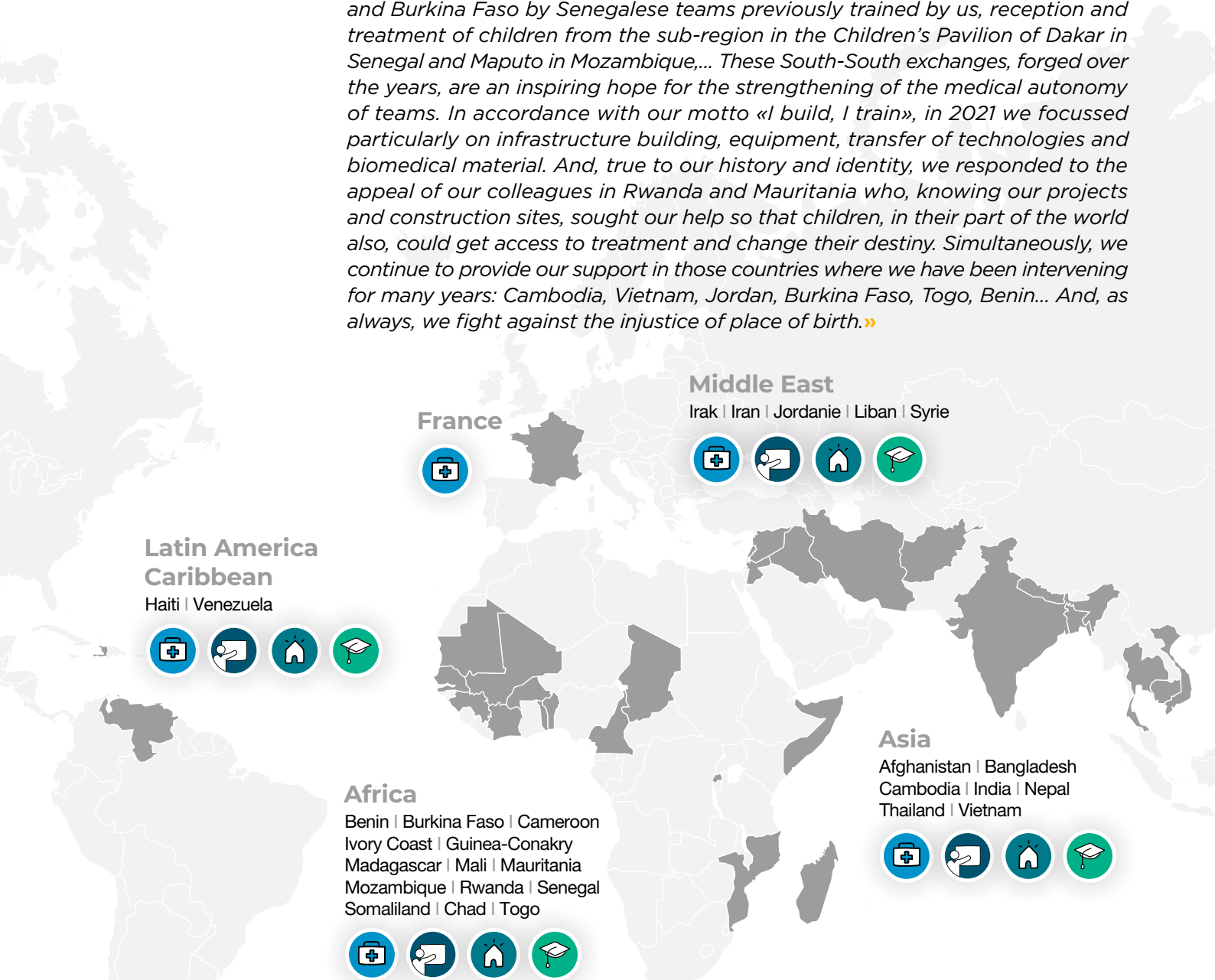
11	Saving the heart of the world cardiac surgery for all
16	Treatment and training for the most complex surgeries
19	Developing skills and practices in anesthesia-reanimation
20	Acting for the health of mothers
21	Building hospitals to give everyone access to high-quality care
23	Strengthening biomedical skills dispatching equipment
25	Using new technologies and innovative practices for treatment and training
27	Acting in crisis situations intervening in emergencies
30	Reaching out to isolated populations to improve their access to medical care
32	Ensuring prevention, treatment, screening, information and care for children providing early and effective treatment
34	Continuing personalized attention for all children in France treated far from their loved ones

Our identity



Prof. Alain Deloche
Founder

«In 2021, Covid-19 was still there, having a severe impact on our missions all over the world but also on our reception of sick children in France. Faced with the pandemic, we continued our efforts, notably in Africa, by strengthening the equipment of local structures. In this unprecedented context, e-medicine was more strongly developed to enable us to act even at a distance. Digital technology is from now on an essential ally of our humanitarian action. Buoyed by the success of numerous projects which sketch out the future by successive touches, the past year was particularly intense. Our determination to act and to accompany over the long term healthcare professionals in the countries where we intervene is exemplified by the success of South-South cooperation. From collaboration to knowledge sharing, it takes on several forms: training of our friends in Mali and Burkina Faso by Senegalese teams previously trained by us, reception and treatment of children from the sub-region in the Children's Pavilion of Dakar in Senegal and Maputo in Mozambique,... These South-South exchanges, forged over the years, are an inspiring hope for the strengthening of the medical autonomy of teams. In accordance with our motto «I build, I train», in 2021 we focussed particularly on infrastructure building, equipment, transfer of technologies and biomedical material. And, true to our history and identity, we responded to the appeal of our colleagues in Rwanda and Mauritania who, knowing our projects and construction sites, sought our help so that children, in their part of the world also, could get access to treatment and change their destiny. Simultaneously, we continue to provide our support in those countries where we have been intervening for many years: Cambodia, Vietnam, Jordan, Burkina Faso, Togo, Benin... And, as always, we fight against the injustice of place of birth.»



Zones and axes of intervention

In 2015, the Lancet commission - a group of 25 experts working in collaboration with consultants from 110 countries - published the Global Surgery 2030 report on the importance of surgical care for the improvement of the health of populations and the economic productivity of nations.

One of the key messages of this report is that «5 billion people have no access to safe and affordable surgical and anesthesia care and that 143 million additional surgeries per year are necessary to save lives, especially in the poorest regions of the world, notably in West, East and Sub-Saharan Africa, as well as in South and South-East Asia».

La Chaîne de l'Espoir deploys actions in 29 countries aiming to strengthen local healthcare systems so as to enable children and their mothers to have access to surgical care. Our mission involves multifaceted interventions which go far beyond the surgeries we carry out.

Prior action is taken for the prevention of certain illnesses and the early detection of certain congenital malformations in order to avoid surgery or make it more effective. This gave rise to our preventive programs against the ingestion of caustic soda in West Africa and our screening campaign for cardiac malformations in the provinces of Madagascar. Children are also instructed about the behavior to adopt in order to live as healthily as possible. In schools in Togo, our nutritional program includes advice about how to eat healthily and at optimum cost. Screening for learning disabilities allows us to identify children with problems of eyesight or hearing.

We also strive to make it possible for everyone to have access to high-quality hospital infrastructure. For that purpose, our team of construction and biomedical engineers have undertaken several actions:

- The evaluation of hospital sites with a view to their improvement (Iraq, Guinea-Conakry, Madagascar);
- Needs analysis and the implementation of equipment plans (Iraq, Togo).

And in all our programs:

- Purchase and installation of equipment, including plans for operation and maintenance, and training of technicians and engineers;
- Recycling of waste and dysfunctional equipment through partnerships with structures such as Ecosystème.

We work alongside administrative personnel who manage children's files (Senegal, Cambodia). We strengthen our local associative partners in their capacity to manage international financing (Ivory Coast, Burkina Faso).

We help local healthcare structures to deploy prevention and screening actions (Lebanon, Jordan, Senegal, Madagascar).

We train healthcare teams on transversal subjects essential to surgery and gynecology: pain management (Ivory Coast), care of new-born babies (Bangladesh), ...



Treatment and surgery

to meet the most urgent needs of children and mothers in France and abroad when they do not have access to technical and financial means in their country of origin.



Training

of local teams thanks to our international network of medical experts.



Building and equipping hospitals

in countries where healthcare structures are inadequate.



Prevention and screening

from the earliest age, notably in the framework of health programs in schools.

ZONES AND AXES OF INTERVENTION

In all our programs, we make it possible for the most vulnerable families to totally cover the medical costs of their children or mothers-to-be. To that end, the donors and sponsors who support us finance hospital fees which we negotiate on the best terms with the financial services of partner hospitals.

Our system of scholarships for students in pediatric surgery is also accessible to numerous young doctors, notably in West Africa, but it also facilitates the training of Iranian doctors.

Given the strength of our expertise in many fields, our organization is often called upon by public authorities or local hospital management to intervene in their country.

It is then necessary to carry out an evaluation of what already exists and an analysis of needs on the medical, technical, human and organizational levels, and to project the resources which we can deploy.

To this end, we set up a team composed of doctors, project managers, construction engineers, biomedical engineers, logisticians or purchasing specialists. Together they carry out what is called an exploratory mission.

In 2021, we carried out exploratory missions in Cameroon, Somaliland and Rwanda enabling us to meet key players, elaborate a detailed diagnosis of needs and identify relevant responses to bring to bear.

Lastly, we engage in advocacy activities to defend causes we hold dear.

■ **In Iraq**, through the hospital we are building in Sinjar, we are supporting the work of the joint winner of the Nobel Peace Prize, Nadia

Murad, helping the Yazidies to resettle in their devastated region.

■ **In Afghanistan**, in Kabul, we are doing our utmost to ensure that the authorities, whoever they are, commit to allowing children and women to go to hospital and get high-quality treatment.

■ **In Jordan and in Lebanon**, we are striving to facilitate medical treatment for Syrian refugees so that they will not be forgotten.

And everywhere we defend the cause of children, so that their health is put at the forefront of public policies and surgery is considered as an intrinsic element of health policies.



«We are building the future step by step. Over time, we have learned the necessity of ceaselessly training surgeons all around the world, equipping dilapidated hospitals and building new ones.»

*Prof. Alain Deloche,
International Meeting of Francophone
Surgery at the Académie de chirurgie in Paris,
November 2021.*



2021 in figures



6,580
patients operated on



75
donors



707
echoes®
teleconsultations



90,000
beneficiaries
of our programs



400^{m3}
and 90 tons of
equipment dispatched



29
countries of
intervention for a total
budget of **25,72 M€**



105
overseas medical
or technical missions



783
collaborators worldwide,
including **154** salaried staff
and **623** volunteers

Assessment of the year 2021



Dr. Éric Cheysson
Chairman

«The repercussions of the health crisis during the year 2021 upset all of us in our private and professional lives. Social distancing and travel restrictions impacted La Chaîne de l'Espoir, which, like the rest of the associative world, had to restructure its activities and intervention modalities so as to preserve the links and human contacts essential to its action. Some of our programs were shaken by geopolitical upheavals and natural disasters. We were all dumbfounded and horrified when the Taliban took over Kabul on August 15, seeing the spectacular images of that frantic flight, those Afghans desperately clinging to the underside of planes, remembering the terror experienced when the Taliban were previously in power. The same month, a terrible earthquake struck Haiti, leaving thousands of inhabitants in a state of total destitution. In spite of this period of uncertainty, La Chaîne de l'Espoir showed its strength, its convictions and its dynamism by continuing its activities and meeting the most urgent health needs of children, women and vulnerable populations. Thanks to its Afghan medical staff, trained for over fifteen years by La Chaîne de l'Espoir, the Kabul hospital was able to maintain and adapt its healthcare services in face of the humanitarian crisis afflicting the country.

In Haiti, we mobilized to deliver medical material and carry out emergency operations on the injured. In Iraq, we laid the foundations for the future Sinjar French Medical Centre; and work on the site of the cardiopediatric care unit in Madagascar is nearing completion. The untiring commitment of the collaborators, volunteers, partners and donors of La Chaîne de l'Espoir, your commitment, gives me confidence in the capacity of our fine organization to meet the challenges of the future. Thank you!»

«We have just lived through two extraordinary years, at once harrowing and unifying. It is in this environment that an organization such as ours must prove its capacity to adapt, its stability and the commitment of its collaborators. Thus, we have intensified South-South cooperation, the delivery of medical material and developed programs in France to meet new needs. La Chaîne de l'Espoir, initially dedicated exclusively to surgery and children, has extended its activities over the years by adapting to contexts and needs; our programs include awareness-raising, screening, prevention, training, spread out over several geographical zones and multiple specialties. In situations of crisis or outright humanitarian disaster, it is obvious that adults also must be treated; the capacity to provide patients with nutrition, and sometimes re-nutrition, is indispensable. This crisis which now affects many countries where we intervene has made us a humanitarian player acting on the ground in unstable security conditions and developing adaptable and responsive modes of action.

With 154 employees worldwide, a remarkable network of volunteers, the confidence of our donors, La Chaîne de l'Espoir continues its development while preserving its medical soul, its humanity and a certain family spirit. I'm very proud of our work, the commitment and generosity of all the links of our Chaîne.»



Anouchka Finker
CEO

The year's highlights

The year 2021 was marked by the continuation of the worldwide Covid-19 pandemic but also by political and climatic events of great intensity, causing problems for millions of people and mobilizing our teams in several directions.

The fight against Covid-19

Concerning the fight against Covid-19, we continued our mobilization to help the most fragile populations by providing them with protective material, and to support capital city hospitals in several African countries, the only ones in their countries capable of managing the intensive care units which we equipped. We may highlight, for example:

- **In Haiti**, the ten schools in our program, as well as healthcare centers, were provided with hygiene kits, protective material for Covid-19 and food supplies for families.
- **In Thailand**, on request from the local government of the Buriram region, our teams distributed medical material to health structures. We also gave hygiene kits and food aid to 820 children in isolation in quarantine centers.
- **In Senegal**, the organization supported the complete setting up of a Covid-19 intensive care unit in the Fann CHU in Dakar, in order to treat Covid-19 patients in isolation, allowing the continuity of usual care in other wards of the hospital. Other hospitals benefited from ICU equipment and PPE (Mali, Madagascar, Burkina Faso).

Earthquake in Haiti

Furthermore, in Haiti, the earthquake which occurred on 14 August once again put the country in the spotlight, worsening a political, social and economic situation absolutely catastrophic for the population, an estimated 59% of whom live below the poverty line.

Our team intervened very quickly on the ground for orthopedic surgeries, in a context where 12,770 people were declared injured and 2,200 dead (Source: UNHCR).

Arrival of the Taliban in Kabul

The very next day, 15 August, we were woken up by the announcement of the arrival of the Taliban in Kabul, Afghanistan. No need to comment on the images we have all seen of panicked crowds rushing to the airport to remind ourselves of how this event captured the attention of the entire international community. Our organization immediately acted in concertation with our partner, the Aga Khan network, to guarantee the security of the Afghan staff of the FMIC (French Medical Institute for Mothers and Children) in Kabul and our Children's Pavilion (a total of more than 1,000 people) and to maintain the continuity of the medical and social services we provide. It was essential to ensure the functioning of the services of our hospital so that the population could continue to have access to treatment, whereas more than 2,000 provincial healthcare structures closed in the following weeks and 3.5 million Afghans have been displaced in the country (Source: ReliefWeb), in very fragile states of health, many of them in the camps of Kabul.



But fortunately the year also saw some remarkable success stories

- On 11 January 2021 the first open-heart surgery **in Burkina Faso** took place. It was carried out by a medical team coming from different regions of France and teams from the CHU of Tengandogo, in Ouagadougou. Zalissa, a 15-year-old schoolgirl, the first patient of this kind in the country, had an operation to close an interauricular communication and was able to resume normal life after two weeks of convalescence.
- In recognition of its work **in Mali** and especially its treatment of victims of the accidental ingestion of caustic soda, La Chaîne de l'Espoir was honoured with the rank of Chevalier de l'Ordre du Mérite.
- Following an exploratory mission **in Mauritania** in June, the organization developed a new capacity building program in pediatric cardiac surgery at the National Cardiology Center in Nouakchott, with a team from l'Hôpital Necker-Enfants malades.
- We resumed itinerant pediatric surgery missions **in Benin**, in the town of Klouekanmey, in July 2021. Since the beginning of this activity organized by our organization, we have never seen so many people turn up. We counted more than 500 surgery consultations and 125 children had operations in one week!
- **In Ivory Coast**, we launched the first coelioscopy trainings, remotely and then in-person, at l'Hôpital Mère-Enfant Dominique Ouattara in Bingerville
- **In Togo**, our team began technical studies for the construction of a pediatric operating theatre at the CHU Sylvanus Olympio in Lomé.
- **In Cambodia**, we gave a new boost to our partnership with the Kanta Bopha Foundation which led to the signing of a convention for capacity building in various specialties (laparoscopic surgery, neonatology...).
- 2021 was also the year which saw the setting up of a new mobile clinic for girls **in India** with our local partner Taabar.
- **In Iraq**, after a year and a half of preparatory work, we signed a general construction contract with a local company for the Sinjar hospital in October 2021 which led to the start of building work in December 2021. On that date, we were able to organize on the spot the first training session for young doctors from the area in the presence of two French experts (a surgeon and an anesthetist).
- During 2021 we also obtained financing from the French Development Agency (AFD) for a three-year project **in Jordan** which will improve access to treatment and local capacity building, leading to better care for children who are disabled or at risk of disability due to congenital orthopedic conditions.
- **In France**, the accompaniment program for hospitalized children was deployed in Tours and henceforth allows children whose parents are absent or rarely present to benefit from individualized support at the Tours CHRU.



**Nathalie
De Sousa Santos**
Deputy CEO



Saving the heart of the world

CARDIAC SURGERY FOR ALL

Care for child cardiac pathologies in the least developed countries still faces enormous difficulties of diagnosis and access to treatment, leading to an increase in child mortality and morbidity. Congenital cardiopathies are responsible for 3% of child deaths in the world and 46% of deaths due to malformation, thus constituting a major cause of death in childhood among full-term new-borns.

Overall, the incidence of congenital cardiac pathologies is about 5 out of 1,000 births. In the least advanced countries, 80% of these children die before the age of five in the absence of specialized treatment.

For their part, acquired cardiac pathologies continue to spread. In Sub-Saharan Africa, for example, 0.5 to 3% of school-age children suffer from rheumatic fever leading to severe cardiopathies.

This serious and life-threatening condition is avoidable by appropriate treatment before the disease develops.

In spite of efforts made in the last few years, this constitutes a real public health challenge. Technical, financial and human resource capacities are extremely limited when it comes to providing care. In addition, social protection systems are insufficient.

La Chaîne de l'Espoir is engaged in an effort of mobilization to alert and accompany local players about this large-scale health problem.

The objective is to strengthen and perfect the healthcare systems in place while raising awareness about the gravity of the situation.

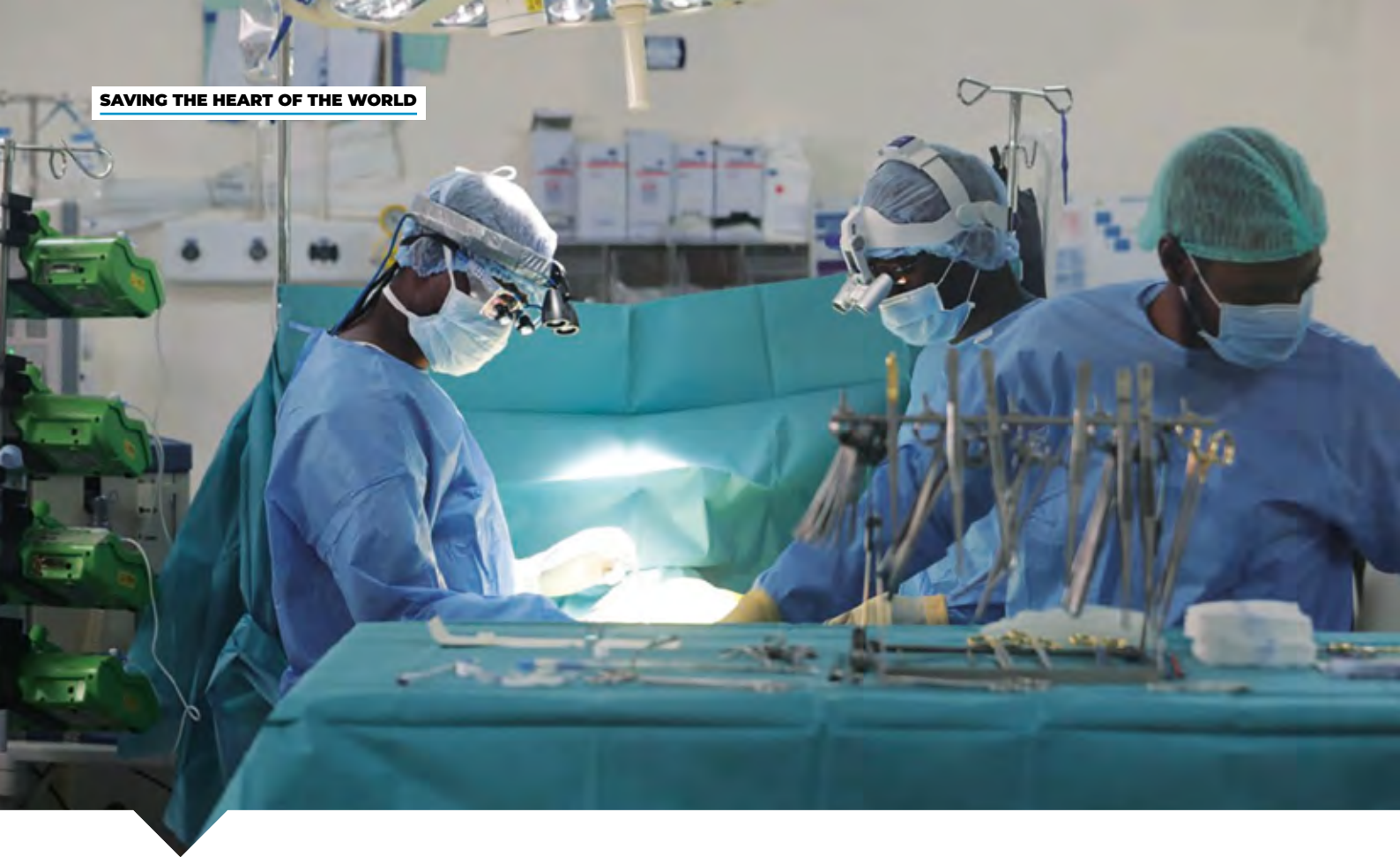
Our main lines of action are to provide care and to improving skills of medical and paramedical teams

Having children operated on by experienced western surgeons is a first response but it remains incomplete.

To reduce the health gap between countries, La Chaîne de l'Espoir is convinced of the necessity to train doctors and paramedical personnel on the spot.

To this end, the organization has based itself for years on a veritable program of international mentoring by means of medical and surgical missions.

The committee of medical experts is committed to providing pluri-disciplinary training, both theoretical and practical, in hospital centers, so as to make more and more medical teams autonomous.



■ **In Mali**, after building and equipping a dedicated center in 2017, La Chaîne de l'Espoir organized seven missions in 2021, enabling us to operate on 55 patients suffering from complex cardiac pathologies and to continue building the capacities of teams in the Hôpital Mère Enfant-Le Luxembourg (HMEL).

■ **In Burkina Faso**, where cardiac surgery was launched this year, 19 children had operations in the course of three missions.

■ **In Jordan**, a mission was organized to provide care for six children suffering from particularly complex pathologies.

In countries where technical conditions are adequate, La Chaîne de l'Espoir gives financial and logistical support for operations carried out autonomously by local teams.

■ **In Vietnam**, 31 children were operated on in the Tam Duc hospital thanks to support from La Chaîne de l'Espoir.

■ **In Afghanistan**, our financing and that of the French Development Agency (AFD) enabled cardiac surgery on 214 children at the French Medical Institute for Mothers and Children (FMIC) in Kabul.

■ **In Lebanon**, 90 patients had operations in the Hôtel Dieu de France hospital in Beyrouth.

■ **In Jordan**, co-financing by La Chaîne de l'Espoir and the European Commission for Civil Protection and Humanitarian Aid Operations (ECHO) enabled local teams to operate on 31 children.

Construct, equip, ensure maintenance and procurement

The actions developed by our organization are designed to have a real impact on local health systems. They consist notably in building hospital infrastructures, providing equipment, supporting biomedical maintenance, supplying medicines and consumables when they are not available on the spot.

The objective is to ensure equitable access to infrastructures, medical products and high-quality technologies, guaranteeing security, efficiency and reasonable utilization of resources.

■ **In Senegal**, our multifaceted support (supplying equipment and consumables, financing of hospital fees) this year made it possible to operate on 135 people, including 65 children.

■ **In Mozambique**, our support contributed to surgical care for 111 people. Children were accommodated in the Children's Pavilion during their stay before and after surgery.

■ **In Madagascar**, in collaboration with the company Bouygues Bâtiment International, La Chaîne de l'Espoir initiated extension and equipment work on the technical facilities for cardiac surgery which will enable open-heart operations starting from 2022.

Promoting prevention and screening of patients

In parallel with surgical training, a strategy of prevention, detection and referencing of patients is gradually being put in place. This aspect is fundamental.

In West Africa, for example, many children suffering from cardiac pathologies live far from urban centers, in areas which are often without any healthcare infrastructure.

Screening missions are therefore their only chance of getting access to surgical facilities. Furthermore, screening activities are often combined with training of health workers on the detection of these pathologies.

■ **In Madagascar**, despite restrictions due to the Covid-19 pandemic this year, La Chaîne de l'Espoir was able to organize a massive training and screening mission.

This took place in the Haute Matsiatra region. The organization trained 40 doctors on the warning signs of pediatric cardiopathy and saw 116 children in consultation, 34 of whom had a cardiac malformation.

In the eleven countries where we have been developing cardiac surgery programs enabling local care, La Chaîne de l'Espoir helped to save the hearts of more than 800 patients this year.

In 2022, we plan to extend our actions of local care capacity building to four new countries (Cameroon, Mauritania, Rwanda, Comores).

TESTIMONY

The Children's Pavilion, a means to guarantee the quality of post-operative care for children

«In many countries, regional disparities in availability of medical treatment are an obstacle to healthcare access, notably for populations living outside large urban centers. Thus, in addition to medical expenses, families must bear the cost of travel and accommodation for children and persons accompanying them. This increases the risk that they will simply renounce treatment or drop out during the follow-up stage. To solve this problem, La Chaîne de l'Espoir, in collaboration with Franciscan and Dominican sisters, set up a Children's Pavilion in Hô Chi Minh City in 2018. With a capacity of 10 beds, this Pavilion can offer the most vulnerable children access free of charge to high-quality care. Children come with one of their parents for medical examinations or a surgical intervention and stay until their condition is sufficiently stable to envisage a return to their remote province. The Children's Pavilion is also a place of learning where we organize educational and play activities as well as instructional workshops on health, hygiene and nutrition. In 2021, the Children's Pavilion in Hô Chi Minh City welcomed 150 children.»





TESTIMONY

One of the highlights of this year was the surgical mission in Cuomo

«The launch of cardiac surgery in Burkina Faso is the realization of a national dream dating back more than two decades, initially promoted by cardiologists and pediatricians in Burkina before becoming a flagship project of the Tengandogo CHU, supported by the Ministry of Health. This is what motivated my return after all those years of study abroad.

La Chaîne de l’Espoir played a major role in all this. Since its first actions in Burkina which consisted in transferring to France children suffering from heart disease, its founder, Prof. Alain Deloche, expressed the wish that children have surgery on the spot.

However, the absence of a cardiac surgeon was an obstacle. Finally, things speeded up after the end of my training with the signing of a convention with the hospital and the training of the other members of our team up until the organization of the first open-heart surgery mission in January 2021.

After the setting up of cardiac surgery in Burkina Faso, my next challenge will be training other cardiac surgeons and specialized nursing teams to reduce the mortality due to heart disease in this country.

One of the highlights of this year was a surgical mission by a team of the Centre Cardio-Pédiatrique Cuomo in Dakar, under the leadership of Prof. Ciss.

Before that, I had done a training period in that center between January and September 2017, which allowed me to participate in the first heart operation in that hospital. The main objective of this training period was to see how to manage to practise this specialty which was non-existent in my country in a context very close to Burkina Faso epidemiologically, economically and geographically.

South-South hospital cooperation is important in more than one respect. First of all, there are not enough cardiac surgery schools in French-speaking Sub-Saharan Africa. Dakar was the only one up to now. Then, their stay in Europe is not long enough for residents from developing countries to gain mastery of cardiac surgery. Finally, the epidemiology of heart disease is not the same on both sides of the Mediterranean.»

Dr. Adama Sawadogo

Dr. Adama SAWADOGO is a cardiovascular surgeon, head of cardiac surgery at the Tengandogo CHU and assistant professor at Joseph KI-ZERBO University in Ouagadougou. He was trained in medicine and general surgery at that same university. His training then continued at Cliniques universitaires Saint-Luc in Bruxelles (Belgium), Queen Elizabeth Hospital in Birmingham (United Kingdom), CHU Fann in Dakar (Senegal), CHU Clermont-Ferrand (France) and at l’Institut du cœur Alain Carpentier in Ho Chi Minh City (Vietnam).

INTERVIEW

Dr. Carine Pavy, cardio-pediatric surgeon at l'Hôpital Necker-Enfants malades, in Paris, on return from her first mission in Mali

«Surgery for congenital cardiopathies is still learned by means of mentoring. This method of teaching has proven its worth over time. It enables transmission of a certain know-how and the sharing of experience. Thus, mentoring makes it possible during missions to transmit and above all to share a great deal of information, which seems particularly appropriate in the mission context. I went with an anesthetist, a perfusionist and an intensive care nurse.

We were all very well received. The mission was well organized with an operating program corresponding to the objectives aimed at. The material needed for the mission was available on the spot. Overall, relations were good between all the actors of the mission.

However, for all the specialties (surgery, anesthesia, reanimation, perfusion), raising points of improvement in practices can be sensitive. We must not give up doing this but it must be done tactfully because this is also the purpose of the mission.

The challenges for tomorrow are putting durably in place ever more rigorous working methods in all areas: ordering and upkeep of material, rigorous asepsis, maintenance, everything conducive to progression of knowledge in the establishment. The sharing of knowledge is a two-way learning process. Furthermore, being confronted with aged congenital cardiopathies is highly instructive from a medical point of view.»

INTERVIEW

Prof. Olivier Raisky, head of the Congenital and Pediatric Cardiac Surgery Department at l'hôpital Necker-Enfants malades in Paris, on return from an exploratory mission in Mauritania

What was the objective of your exploratory mission in Mauritania?

The goal of this mission was to evaluate the possibilities of the implementation by La Chaîne de l'Espoir of a program to support the development of pediatric cardiac surgery in Mauritania by strengthening the only hospital center in the country specialized in cardiology: the Centre National de Cardiologie (CNC) in Nouakchott.

Why intervene in Mauritania?

The problem of care of child cardiac pathologies in Mauritania has up to now been treated exclusively in its surgical aspect and has depended on international missions and medical evacuations organized by the State or international NGOs. This system has its limits since it does not include the dimension of skills transfer and is therefore of no benefit in making the CNC team autonomous in treating cardiac pathologies. Furthermore, these evacuations represent only a very small number of patients and are very costly. It is therefore essential to set up a cooperation program enabling a progressive upgrading of the skills of the CNC team.

In what way could La Chaîne de l'Espoir contribute to the development of the Centre National de Cardiologie of Nouakchott?

La Chaîne de l'Espoir could help improve care for children at the CNC while developing and strengthening the autonomy of medico-surgical teams. This accompaniment involves in the short term organizing operative missions with mentoring of the medico-surgical teams of the CNC. A cycle of three to four missions per year with care for an average of ten children per mission is envisaged. Pair working by specialty will be set up and will be completed by distance learning and possibly practical training periods in France.

And for you what is the next stage?

A next mission, of course! The first mission of training by mentoring at the CNC should take place in spring 2022 with the involvement of a complete medico-surgical team: cardiac surgeons, intensive care anesthetists, operating theater and intensive care nurses, perfusionist.



Treatment and training

OR THE MOST **COMPLEX SURGERIES**

Far beyond cardiac surgeries, La Chaîne de l'Espoir develops projects around all the child surgery specialties.

Their objective is to enhance the know-how of local teams on surgery for complex pathologies, some of which are no longer visible in Europe because they are treated during pregnancy or at birth, or are non-existent thanks to improvements in our lifestyles.

Prevention and treatment of caustic burns of the esophagus

Accidents due to caustic soda, for example, are a little-known cause of child morbidity and mortality in West Africa where its household use is widespread and poorly controlled, unlike in Europe (where corks of bottles of bleach, notably, are secure).

Often stocked in food containers and looking like water or sugar, its accidental ingestion has disastrous consequences for child victims.

These children may suffer from severe burns to the esophagus causing a stenosis (stricture) making it impossible for them to eat or even to drink. After attempts to dilate the esophagus, its replacement by a piece of cotton or of the stomach is the only solution allowing the child to get back to a normal life.

This very delicate surgery requires great expertise on which our teams work with their African colleagues. Initiated in 2020 with the support of the French Development Agency (AFD), the project includes actions of prevention and awareness-raising, treatment of young victims and local medical capacity building.

Prof. Xavier D'JOURNO

Thoracic and Cardiovascular Surgery Department, Hôpital Nord, Marseille

«Close cooperation between the teams of La Chaîne de l'Espoir and Prof. Sadio Yéna's team in Mali enabled regular skills transfer concerning endoscopic examinations, surgical procedures, post-operative monitoring and dilatation sessions. Several cases were treated in total autonomy by the local team and the missions are now focussed on the most difficult cases.»

In 2021, in Mali and Ivory Coast, prevention continued, notably in the poorest regions and quarters, in collaboration with Terres des Hommes in Mali and the Red Cross in Ivory Coast.

Furthermore, missions for improving skills of local teams enabled surgery on 44 children in Ivory Coast (Hôpital Mère-Enfant Dominique Ouattara in Bingerville) and 42 in Mali (Hôpital du Mali in Bamako). The little patients came from six countries in the sub-region, accompanied by

surgeons from their countries who attended the missions to perfect their training.

Prevention, awareness-raising and treatment of Noma and maxillofacial pathologies

Mali and Burkina Faso are particularly affected by pathologies called «facial» such as cleft lip/palate, maxillofacial pathologies and Noma (an infection which destroys the skin of the face, the muscles and the underlying bones). In fact, according to the World Health Organization, Noma affects 140,000 victims per year. This disease mainly strikes children suffering from malnutrition and precarious living conditions, often aggravated by an immune deficiency due to infection. Reconstructive surgery is then crucial to ensure a return to normality for patients whose facial deformation has totally excluded them from social life.

In these two countries, La Chaîne de l'Espoir operates on children and strengthens the continuous training of surgeons. In Mali, the activities are implemented with the Newface association, created by the Malian surgeon Dr. Moussa Daou, and in collaboration with the Malian Federation of Traditional Practitioners and Herbalists. The involvement of traditional healers, important actors respected in rural communities, is indispensable in the process of raising awareness and in the treatment of persons suffering from Noma.

They are often the first to be confronted with the victims. They can therefore refer the patients to our centers, avoiding stigmatization and worsening of the disease. This year 346 traditional practitioners were trained and 118 patients benefited from reconstructive surgery.

In Burkina Faso, 336 patients had operations in 2021, in addition to awareness-raising and prevention actions carried out with the association La Voix du Paysan which, via its community radio, can reach the populations which are furthest away from the capital.

We also collaborate with the Swiss association Sentinelle for the training of workers in primary healthcare centers who are in charge of referring patients to the capital.

This program is co-financed by the French Development Agency (AFD) in both countries.

Orthopedic malformations and brachial plexus surgery

When not detected in time, orthopedic malformations have disastrous consequences, and fragile healthcare systems are unable to provide adequate care for these pathologies.

Notable among them is paralysis of the brachial plexus. This is a group of five nerves coming out of the spinal cord between the bones of the neck, responsible for the movements and sensibility of the arm. In babies, the brachial plexus can be damaged during childbirth.

This year we carried out missions for upper limb reconstructive surgery in Afghanistan, Lebanon and Jordan. We were able to examine and operate on children showing brachial plexus lesions, congenital malformations of the hand and the aftereffects of traumatism.

Dr. Philippe VALENTI

Orthopedic surgeon, specialist of the shoulder, at Clinique Bizet in Paris and Vice-President of La Chaîne de l'Espoir

«For lesions of the brachial plexus in children between six months and two years old, we were able to carry out nerve grafts and névrotisations, and, later, arthrolysis combined with tendon transfers. The objective was always to regain a functional hand capable of positioning itself in space thanks to the functionality of the shoulder and the elbow. In Lebanon, we have a screening program for congenital malformations of the limbs so as to do surgery on them as soon as possible.»





Promoting and strengthening initial and continuing training of student doctors in pediatric surgery in West Africa

■ **In West Africa**, the population is young and, given that the anticipated demographic growth will lead to 2,49 billion Africans by 2050 (Source: United Nations), an increasing number of pediatric surgical interventions will be necessary. According to recent projections by the United Nations, half of the African population will be under 25 years old by 2050. However, in spite of recent developments, child surgery suffers from an acute shortage of specialist surgeons. To meet present and future surgical requirements, urgent investment in human resources is therefore essential.

Standardization of training in pediatric surgery throughout the continent turns out to be one of the solutions.

Thus, the Universities of Abidjan (Ivory Coast), Lomé (Togo), Cotonou (Benin), Dakar (Senegal), Conakry (Guinea-Conakry) and Ouagadougou (Burkina Faso) offer a degree in Specialist Studies in Pediatric Surgery (DES-CP) recognized by the African and Malagasy Council for Higher Education (CAMES) and whose curriculum is harmonized by the West African Health Organization (OOAS).

Dr. Eude Ulrich Elvis GOUDJO

A native of Benin, trained thanks to the DES-CPD in 2017, and now a pediatric orthopedic surgeon

«I think it is the seminars and missions organized by La Chaîne de l'Espoir which taught me the most. The seminars allowed us to exchange with the greatest international experts in pediatric surgery.»

Since 2014, La Chaîne de l'Espoir has been contributing its expertise to this program to complete training on specific modules where teaching by local teams is difficult, due to the lack of qualified teachers.

Thus, the courses followed by students in their respective universities are complemented by our missions which include theoretical courses then interventions in the operating theatre, on the spot or broadcasted live.

In 2021, the thirteenth training seminar took place in Benin. 44 students benefited from this course. The subjects dealt with were misalignments of the lower limbs, pediatric visceral and urogenital pathologies.

The seminar also made it possible to operate on 24 children including 18 urological and 6 orthopedic cases.

Developing skills

AND PRACTICES IN ANESTHESIA-REANIMATION

■ **In Mali and Burkina Faso** where La Chaîne de l'Espoir intervenes notably in cardiac surgery and reconstructive surgery, the ratio of intensive care anesthetists per 100,000 inhabitants is respectively 0.3 and 0.28 whereas it is 15 in France. Including nurses trained in intensive care, this ratio remains below 1 per 100,000 for sixteen countries of Sub-Saharan Africa.

This shortage has multiple consequences. Patients may be treated by practitioners without the experience and competence necessary for their security.

In 2021, in order to build the capacities of personnel in our partner medical structures, La Chaîne de l'Espoir organized mentoring missions including intensive care anesthetists in Afghanistan, Ivory Coast, Mali, Jordan and Burkina Faso during which nearly 550 patients were treated and over 30 medical and paramedical personnel were trained.

Thus, Dr. Émilie Langlais participated in such a mission in Mali and Dr. Xavier Raingeval in Ivory Coast and Burkina Faso. They give us their testimony.

Dr. Émilie LANGLAIS

Pediatric anesthetist at CHU Rennes

«Concerning anesthesia in general, it is now necessary to make practices secure so as to reduce morbi-mortality: even if statistics are lacking, discussions with local professionals suggest that perioperative mortality is common, as well as the morbidity that goes with it. For pediatric anesthesia, a subspecialty which at this time is practically not taught in initial training and which is rarely practised, we are working to elaborate a university degree involving theoretical and practical training given first of all by volunteers, in face-to-face and distance learning. The goal being, with time, to train local referents who will pass on their theoretical and practical knowledge to their colleagues.»

Dr. Xavier RAINGEVAL Anesthetist, Head of the training center in locoregional anesthesia at the Clinique Jouvenet, Paris

«The real future for anesthesia right now is care pathways with rapid rehabilitation. Thanks to locoregional anesthesia, more serious surgeries can be done on an outpatient basis, or with shorter hospital stays, which makes sense in countries where care is less available. This also has an economic impact on the society or on families depending on the healthcare system of the country. The missions undertaken play a part in these challenges and can only be conceived with teams who share this vision and who can practise throughout the year with available material and consumables.»

Acting for the health

OF MOTHERS

«Since 1990, maternal mortality has fallen by 45% worldwide: a hugely impressive achievement. But in spite of this progress, nearly 800 women still die every day in pregnancy or childbirth. [...] And for every woman who dies, 20 or 30 suffer from serious or long-term after-effects».

Source: <https://www.unfpa.org/fr/sante-maternelle>

Acutely aware of the gravity of this problem La Chaîne de l'Espoir decided, starting from 2016, to take action in favor of maternal health

In 2016, our organization built and opened the maternity ward in Kabul which completes the pediatric hospital which we had constructed in 2005. We sent many missions there to train the teams, to put in place procedures and tools to improve the quality of care for mothers and newborns. In 2021, 1,492 consultations took place, as well as 966 childbirths.

The most vulnerable women can also be received in the Children's Pavilion, originally dedicated only to the poorest children. This year, we were thus able to accommodate 230 women.

The year 2021 was particularly troubled in Afghanistan but it was still possible to continue training and a mission by our anesthetist specialized in gynecology-obstetrics took place in January.

Dr. Azadah Yacoub

Obstetrician-gynecologist at the Hospices civils de Beaune, on France Inter on 2021/10/05

«The maternity ward is a reference center. [...] It is the only neonatology in Afghanistan. If this maternity unit were to close, the country would no longer be able to take care of hyper-complex pathologies, nor of very premature children.»

This contributed to the setting up of a project to detect women in Kabul refugee camps who need gynecological treatment and surgical care, most often due to childbirth at home having very severe after-effects for the women (tearing, incontinence).

■ **In Bangladesh**, in addition to child surgery on hospital ships, La Chaîne de l'Espoir accompanies the Friendship association in increasing the capacity of its hospital in Shyamnagar, in the south of the country. In 2021, the gyneco-obstetric training missions were suspended due to Covid-19 but training sessions via videoconference were carried out on the examination of newborns and neonatal resuscitation, which complete the care provided to the mother.

■ **In Ivory Coast**, where we have accompanied from the start the Hôpital Dominique Ouattara in Bingerville, near Abidjan, we are happy to see that the maternity ward carried out over 980 childbirths this year.

Our capacity building missions, suspended during Covid-19, have been reinvigorated and the subjects are varied: fetal monitoring, perineal reeducation, cord care, emergency care of pregnant women...



Building hospitals

TO GIVE EVERYONE ACCESS TO HIGH-QUALITY CARE

In 2021, La Chaîne de l'Espoir ensured the implementation of several projects aiming to construct or rehabilitate hospitals. These projects are often completed by donations of medical equipment and training on maintenance and operation.

La Chaîne de l'Espoir is involved in all the preliminary phases of design studies for hospital establishments such as to comply with international standards which guarantee secure care for patients.

■ **In Madagascar**, thanks to the donated skills of Bouygues Bâtiment International, our organization is conducting a project at the Centre Hospitalier de Soavinandriana in Antananarivo. Beginning with a design phase, the goal is to bring up to standard the surgical technical facilities and the equipment of the cardio-pediatric care unit (medical equipment, supplies, accessories, consumables ...) while ensuring compliance with international standards allowing open-heart surgery.

To this end, our experts worked on the rehabilitation of this unit including a risk-3 operating room, categorized ISO 7 in terms of particulate cleanliness of the air (the first in the country), indispensable for open-heart operations, the installation of sterilization as well as a reanimation unit.

All of the main structure and framework has been completed as well as 80% of the technical and architectural lots.

This work was done by Malagasy companies, thus favoring local expertise and capacity building. It is thanks to cooperation between Bouygues Bâtiment International and the head office and local teams of La Chaîne de l'Espoir that the activities were conceived in accordance with the realities on the ground.

Elsa NEGRE

Head of the Infrastructure & Biomedical Department

«The situation of healthcare in Madagascar is very critical. There is no hospital structure in the country able to provide care for the numerous cases requiring cardiac surgery. This project is a technical and human adventure to ensure treatment for Malagasy children in their own country with immense pride and international human collective responsibility.»

■ At the same time, La Chaîne de l'Espoir continued a long-term project **in Iraq**: the construction of a regional hospital with 27 beds, the Sinjar French Medical Centre. Sinjar is a town over 85% of which was destroyed by fighting with the Islamic State group and whose occupation led to the genocide of the Yazidi community.

Set up on a site provided by the Iraqi Ministry of Health, this structure will make it possible to increase the supply of healthcare in Sinjar and in the plain of Nineveh. Started in 2019 and backed by the Crisis and Support Center of the French Ministry of Europe and Foreign Affairs and also by the Madad Fund of the European Union, this project strengthens the work of the 2018 Nobel Peace Prize winner Nadia Murad and her Foundation, Nadia's Initiative. The year 2021 saw the completion of the execution design, the call for tenders with Iraqi companies and the signing of contracts for construction and supervision. Beforehand, La Chaîne de l'Espoir worked with companies responsible for ensuring secure access to the site from the main road. We build a long gutter to channel the flow of water during the rainy season and an upper platform.

The year 2022 will therefore mark the start of construction which will continue into 2023. Work on earth-moving, foundations, structure, technical lots and architectural lots will take place in turn.

Moreover, La Chaîne de l'Espoir also sent a team to **Somaliland** in December 2021 to evaluate the infrastructures of the Edna Adan Hospital in Hargeisa.



Preparation of the building site of the SFMC by the Iraqi general contracting party.



Modular hospital for pediatric surgery

Hélène CAMUSET

Head of Hospital Building Projects

«The SFMC project in Iraq illustrates the richness and complementarity of the teams and partners of La Chaîne de l'Espoir, and the strong links which have been created by this sharing of skills, marked by design studies all at once French, Lebanese and Iraqi. This ambitious project, carried out in 3D according to international standards, will also help to improve access to care for the inhabitants of Sinjar.»



Existing operating theatre in the Edna Adan Hospital, Hargeisa (December 2021)

There we also evaluated the possibility of building a new operating theater for pediatric surgery, identified the technical needs, evaluated the level of the teams, analyzed training demands and identified possible local technical partners. Once again, the mission of La Chaîne de l'Espoir strove to be exhaustive, human oriented and pluridisciplinary.

■ **In Guinea-Conakry**, in the hospitals of Conakry, a pluridisciplinary team conducted an exploratory mission to improve children's access to care by proposing a modular hospital solution.

Infections are largely predominant in child mortality. The long-term consequences for children who do not receive adequate surgical care are catastrophic.

We initiated medical and biomedical actions with local partners with donations of equipment in order to improve the diagnosis and monitoring of patients at CHU IGNACE DEEN and CHU DONKA.

As the sociologist Dominique Wolton emphasizes, *«the technical is less important than men and society. What's really important is the humanitarian project behind it».*



Strengthening biomedical skills

DISPATCHING EQUIPMENT

■ This year, **in Mali**, La Chaîne de l'Espoir was present more than ever intervening in the Centre FESTOC (l'Hôpital Mère Enfant-Le Luxembourg) in Bamako to put in place a maintenance management plan for a stock of about 350 pieces of equipment. To meet this technical and human challenge, the local technicians were mobilized on a daily basis, because accompanying and training these persons is also one of our priorities. On this work depends the durability of our actions and the respect for equipment bought, donated and installed.

Several training sessions were organized with the suppliers once the equipment had been started up: on the spot or by videoconference (training on the C-arm X-ray, the anesthesia machine, the ultrasound, the optiflow...), depending on the local presence or absence of these suppliers.

Among the structures which benefited from this training we count the CHU Sylvanus Olympio in Togo, the Tengandogo CHU in Burkina Faso, the CHU Fann in Senegal and the FMIC in Afghanistan.

■ Several missions took place **in Burkina Faso**, prior to the first open-heart surgery mission ever carried out there, so as to be sure of the proper functioning of the entire structure. On that occasion, the role of the biomedical experts was to check all the critical services: the operating theater, the ICU, the sterilization, the laboratory,

the blood bank and the technical premises. Very specific pieces of equipment were tested, notably the heart-lung bypass machine, checked and started up with the perfusionist.

Other missing equipment and consumables were reported and subsequently supplied by La Chaîne de l'Espoir. Thus, it was thanks to all these preventive measures and this chain of human experts that the first open-heart operation was able to take place successfully in January 2021 at the Tengandogo CHU in Ouagadougou.

Asma DERGAL

Biomedical Engineer

«At the Tengandogo CHU, a little girl's heart was stopped so as to open it and insert a small valve which would enable better functioning after waking up. After being stopped for 20 minutes, the time to restart the heart arrives. The surgeon places the defibrillator on the heart, a first shock, a second and then a third, the heart restarts tick-tock, tick-tock, ... it's at this moment that I realize the importance of our presence on these projects, of our work: a malfunction in a thin wire could make it impossible to restart a patient's heart.»

In 2021, in spite of the pandemic, which closed borders in a few hours and multiplied transport costs more than fivefold, La Chaîne de l'Espoir dispatched over 400m³ and 90 tons of medical equipment and consumables, the highest total of the last five years. In a constantly more challenging and ever-changing environment, the logistics of La Chaîne de l'Espoir requires more and more sophisticated expertise.

Every problem solved is a victory because each of the 175 missions successfully carried out means hospitals equipped and children's surgery made possible.

■ In partnership with the local NGO AVESOC and thanks to the financial support of the Crisis and Support Center, La Chaîne de l'Espoir set up a project **in Venezuela** which aims to improve access to pediatric surgery care in the Caracas agglomeration and the State of Miranda. Children have operations in two healthcare centers, the Saint Jean de Dieu hospital and the Federico Ozana medical assistance center. These actions are accompanied by support for the biomedical equipment of the two structures, by training and donations of medicines, consumables and material.

In July 2021, thanks to the support of the French Embassy, our organization dispatched €60,000 worth of merchandise to Caracas: medicines, consumables and biomedical material.



Joint work by experts from La Chaîne de l'Espoir and Malian biomedical technicians on the installation of a Dräger ATLAN 300 anesthesia apparatus at l'Hôpital du Mali (November 2021)

Thomas MOUGEL

Head of the Purchasing and Logistics Department

«Knowing that the autoclave which will sterilize surgical instruments in Madagascar is subject to customs procedures against the proliferation of chemical weapons, making a snap decision that freight for Burkina Faso will embark in Liège to optimize costs and avoid congestion in Paris, reorienting our containers to Lomé rather than Dakar to anticipate a strike by Senegalese truckers... These are a few examples of daily challenges for the logistics of La Chaîne de l'Espoir, when it is not political events which reduce to practically nothing flight traffic to Mali, or a container ship which runs aground and blocks the Suez Canal.»



Ceremony for the official reception of equipment at the CHNU, Benin (June 2021)

This donation made it possible to alleviate the supply disruptions which the country has suffered since the start of the economic, social and political crisis in 2013. More generally, a budget of over 1 million euros was invested during the year 2021 for the purchase of equipment for our hospital partners, in order to strengthen healthcare systems.

To accompany the work of local technical teams and improve the services enabling effective implementation of projects, La Chaîne de l'Espoir has worked on the recycling and renovation of biomedical equipment.

In 2021, several significant donations were received, notably at the CHU of Aix-en-Provence two heart-lung bypass machine, two surgical C-Arm X-Ray an ultrasound scanner and laboratory equipment for a budget amounting to about €200,000.

Using new technologies

AND INNOVATIVE PRACTICES FOR TREATMENT AND TRAINING

■ **For several years**, La Chaîne de l'Espoir has been using new technologies and innovative practices to train healthcare personnel on the ground and to develop mentoring in the different countries where we intervene. Among these, echoes[®] is a tele-ultrasound platform developed by our organization, linking specialist French doctors with medical partners who in their local establishments cannot always make certain difficult diagnoses, due to a lack of adequate material or specialist training. echoes[®] allows them to ask for a second opinion remotely and in real time to treat children suffering from cardiac pathologies. When the diagnosis is established, the child has an operation on the spot (by the local team alone or with the help of French doctors on mission) or else transferred to a neighboring country or to France. The project is particularly relevant over time because it makes it possible to build the capacities of local medical personnel in a continuous manner. Every week sessions take place with healthcare centers in eleven countries across Africa and the Middle East.

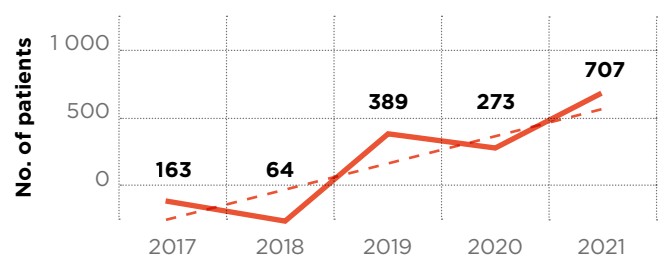
In 2021, we launched echoes[®] sessions with new countries such as Jordan and Guinea-Conakry. Six new experts from the organization also joined the echoes[®] project in 2021. Indeed, Centella Tomasa (a Spanish cardio-pediatric surgeon) now links with Jordan, Carine Pavy (a cardio-pediatric surgeon), Thierry Langanay (a

cardio-vascular surgeon) and Camilla Biselli (an anesthetist) link with Malian doctors, and finally Violaine Laparra (a pediatrician) and Louis-André Arzac (a cardiologist) with Madagascar. In 2021 we reached the highest number of patients seen in echoes[®] sessions since its launch, with 707 patients in consultation in more than 100 sessions.

In 2022, new countries should be equipped with the echoes[®] program, such as Mauritania, Cameroon, Rwanda, Comores or Somaliland. The system will also be tested in new therapeutic areas such as prenatal diagnosis and digestive surgery.

La Chaîne de l'Espoir also set up several training programs via webinars, in Bangladesh and Ivory Coast for example.

EVOLUTION OF THE NUMBER OF PATIENTS **FROM 2017 TO 2021**





Coelioscopy, also called laparoscopy is a surgical technique



Endoscopy, also called digestive fibroscopy

These programs are organized with medical personnel on the spot and different target audiences. They take place in French or English, or in the language of the country with the help of a translator. In Bangladesh, webinars are held twice a month.

Sessions take place remotely and skills assessment sessions are carried out on the ground so as to evaluate theoretical progress and capacity building. 24 webinars took place in 2021 in Bangladesh. In Ivory Coast, numerous remote sessions complement training missions on the ground.

La Chaîne de l'Espoir has also set up training programs concerning endoscopy and coelioscopy.

Coelioscopy, also called **laparoscopy**, is a surgical technique used more and more frequently in recent years. It makes it possible to limit the size of incisions in the abdominal wall, thus reducing the risk of several post-operative complications occurring with classical surgical techniques. It can be used in the framework of operations whose goal is diagnostic or therapeutic.

A coelioscopy program lasting two years was developed in 2021 to train surgeons in Ivory Coast. The first mission of the training program took place in July 2021 at the Hôpital Mère Enfant de Bingerville, in the company of Dr. Naziha Khen Dunlop, a pediatric visceral surgeon and Vanessa Gautier, an operating theater nurse. Four West African surgeons were selected to participate. As Dr. Naziha Khen Dunlop explains, «the main objective of the training is to teach them to be autonomous and to master laparoscopy. The secondary objective is to create a positive dynamic between colleagues trained in the region so that they can come to each other's help». During the mission, five to six children

were operated on every day, split between two operating rooms. The program is continuing with the organization of missions in 2022.

Furthermore, **endoscopy**, also called **digestive fibroscopy**, is a medical examination making it possible to visualize the interior of the digestive tube by inserting a flexible cable equipped with a camera and a lamp. Fibroscopy is a minimally invasive technique whose goal is either diagnostic or therapeutic. The patient can make a quicker recovery because healing takes place rapidly.

La Chaîne de l'Espoir and the Hôpital Principal in Dakar developed a training program on digestive endoscopy (SENENDO).

The first step is organizing endoscopy simulation workshops and lecture courses. The objective is to strengthen the training of Senegalese doctors and nurses on digestive endoscopy with a view to diagnosis or surgery.

In September 2021 took place in Senegal the first mission in support of the development of digestive endoscopy carried out by a medical team from the Hôpital Georges-Pompidou de Paris, under the supervision of Prof. Gabriel Rahmi, a gastroenterologist and hepatologist.

Fourteen gastroenterologists and nine endoscopy assistants practising in five hospitals in Senegal participated in this mission which enabled care for eight patients (dilatation of esophageal strictures, fitting of biliary prostheses, puncture guided by echo-endoscopy...). These programs will be more widely deployed in 2022.



Acting in crisis situations

INTERVENING IN EMERGENCIES

In recent years we have seen an increase in the frequency, duration and scale of humanitarian crises, resulting in a greater and greater number of people who are vulnerable, displaced and in need of humanitarian assistance.

*Globally, in 2022, **274 million people in 63 countries are in need of humanitarian assistance.***

This number is a significant increase from 235 million people a year ago (+11.6%), which was already the highest number in decades (Source: World Humanitarian Outlook 2022, OCHA).

Some crises drag on endlessly, as is the case in the Levant, the Sahel and Afghanistan where La Chaîne de l'Espoir is present. Organizations which strive to respond to such situations are obliged to act on two different time scales, with rapid-impact interventions and more long term actions. It is also vital to have greater cooperation between actors dealing with emergencies and those concerned with development: they share the same objective which is to meet the needs of populations.

Thanks to long-term action in about twenty countries, La Chaîne de l'Espoir brings a response to the immediate needs of populations and, above all sustainable solutions.

How? By means of medical missions which have a double objective: to give patients access to high-quality medical and surgical care, and to contribute to long-term building of the medical capacities of countries, which also involves activities of construction, equipment and technology transfer.

Retrospective 2021

Since 2020, La Chaîne de l'Espoir has intervened in the North-West of Iraq, in the district of Sinjar. We mobilize for the reconstruction of the healthcare infrastructures of the city so as to accompany the return of displaced populations, including the yazidi community.

We decided to act in two stages: the first phase consisted in rehabilitating an operating theatre still existing in the «Primary Health Care Center» hospital and training its personnel; the second phase consists in building a new hospital, which will offer more complete and specialized medical services.

The construction of the Sinjar French Medical Center (SFMC) began at the end of 2021.

La Chaîne de l'Espoir intervenes in this zone which is very difficult in terms of access and security and was therefore obliged to adapt its system of security and human resources.



TESTIMONY

**Dr. Najeebullah Bina,
cardiac surgeon at the FMIC in Kabul**

«I watch with great concern the deterioration of the humanitarian situation, especially in the healthcare sector. The situation is very worrying but La Chaîne de l'Espoir is determined to stay alongside the Afghans to improve access to care for women and children. At the end of 2021, La Chaîne de l'Espoir increased by about 30% the number of beneficiaries of the Women and Children's Pavilion in Kabul and will keep up this steady increase in 2022.»

■ **In Afghanistan**, the situation has considerably deteriorated in the last few years: 24.4 million people, more than half the population, need humanitarian aid in 2022 (Source: news.un.org). That's four times more than three years ago. The situation is particularly worrying since the return to power of the Taliban in August 2021, notably in the sectors of healthcare and food aid. According to the United Nations, one child out of five suffers from severe malnutrition.

In this context, La Chaîne de l'Espoir has decided to strengthen its action among the most vulnerable populations by engaging additional financial and human means.

Through the Women and Children's Pavilion and our activities among displaced populations, we facilitate access to free surgical care for women and children.

Coming to the aid of refugees and displaced people

In spite of travel restrictions due to the pandemic, the number of refugees and displaced people reached a record level in 2021. La Chaîne de l'Espoir is mobilized in several countries to bring help to displaced and refugee children, particularly vulnerable.

During the first six months of 2021, 84 million people in the world had to leave their homes to flee conflicts, persecutions and climate catastrophies (Source: UNHCR Mid-year trend report 2021).

■ **In Jordan**, La Chaîne de l'Espoir has for several years been providing medical/surgical care to the most vulnerable Jordanian children and Syrian refugee children suffering from cardiac and orthopedic pathologies. In 2021, we were able to operate on 31 children for cardiac pathologies thanks to a volunteer international mission and four local missions. In parallel, 187 children benefited from an orthopedic operation carried out thanks to four volunteer international medical missions and four missions conducted by local surgeons. The children also had access to psychosocial support.

Emergency interventions

La Chaîne de l'Espoir intervenes, in a one-off and exceptional manner, to bring assistance to populations during severe situations of crisis, post-crisis or disruption of access to healthcare. Among the emergency interventions of 2021, we may cite the **Haiti disaster**:

■ **In Haiti**, La Chaîne de l'Espoir provided emergency aid after the earthquake which occurred on 14 August 2021. In just a few days, our teams dispatched over 500 kg of surgical material. An orthopedic surgeon and a pediatrician went to the country to back up the local teams. In addition, in collaboration with «La Fondation Paradis des Indiens», La Chaîne de l'Espoir set up two mobile clinics, composed of doctors and nurses, who were able to provide care to hundreds of patients living in the remotest rural areas affected by the earthquake.



TESTIMONY

Dr. Colin de Cheveigne,
orthopedic surgeon at the Clinique de l'Union,
in Saint-Jean

«Thanks to La Chaîne de l'Espoir, we got to Port-au-Prince in record time and we were able to collaborate very effectively with the Haitian surgeons, operating on very complex cases which sometimes required microsurgeries, a delicate technique necessitating experience and specific material which we were able to provide. I think of a patient on whom I operated for a loss of tissue of the entire foot, who, thanks to surgery and a skin transplant, was able to walk again three months later. We had to deal with numerous fractures of the pelvis, the femur and the upper limbs particularly in children who were in their houses on the morning of the quake.»

Security challenges

The contexts in which La Chaîne de l'Espoir intervenes are becoming more and more complex and risky. This is notably the case in Iraq, Haiti or especially Afghanistan where the political and security situation is extremely volatile. **The objective of La Chaîne de l'Espoir is first of all to reduce the risk exposure of its teams and beneficiaries on the ground.** To that end, it is strengthening its tools and processes for analyzing contexts and risks, its security systems and human resources. Most of our missions have been reinforced by expatriate and local staff and have recruited security managers on the ground. Their responsibility is to set up procedures to protect personnel and property, supported by the security referent at the headquarters. In case of threat or incident, La Chaîne de l'Espoir activates the crisis unit at the headquarters to provide rapid assistance to teams on the ground.



INTERVIEW

Élise Chaudron,
Program Coordinator,
Lebanon

How did La Chaîne de l'Espoir intervene in Lebanon?

In 2020, the Crisis and Support Center (CDCS) of the French Ministry for Europe and Foreign Affairs contacted La Chaîne de l'Espoir asking us to come to the assistance of the victims of the explosion in the port of Beirut. In collaboration with the Hôpital du Sacré Cœur, our long-standing partner, we facilitated surgical care for the direct and indirect victims of the explosion.

Why does La Chaîne de l'Espoir continue its actions in Lebanon?

In 2021, the economic, political and health crises striking Lebanon continue to have a very severe impact on the Lebanese population. For many of them, access to surgical care is extremely difficult, notably for financial reasons. La Chaîne de l'Espoir therefore continues to facilitate surgical care for the most vulnerable, with the support of the CDCS. As a complement, we conduct a project of reinforcement of civil society for the prevention, screening and treatment of congenital orthopedic conditions thanks to the support of the French Development Agency (AFD).



Reaching out to isolated populations

TO IMPROVE THEIR ACCESS TO MEDICAL CARE

Surgery, considered as costly and low-priority compared to prevention of infectious diseases, is generally the poor relation of public health policy. Surgical and anesthetic care are nevertheless essential for the improvement of people's health.

In many developing countries, surgery is concentrated in the capital whereas the majority of the population live in rural areas where there are great difficulties of access to surgery: lack of trained personnel, unsuitable healthcare infrastructures and low levels of income.

■ **In Togo**, the population is mostly rural (62%) and very unequally distributed because the capital, Lomé, and its outskirts concentrate 24% of the population. La Chaîne de l'Espoir therefore facilitates actions to reach out to these isolated populations, far from healthcare structures, in different ways: by means of itinerant surgical missions, support for mobile healthcare structures and training of medical teams in provincial hospitals.

■ **In Togo and in Benin**, we support the organization of itinerant pediatric surgery missions with the pediatric surgery departments of the big university hospitals (CHU) of the capital. They are carried out in regional hospitals and enable free care for children from deprived backgrounds who do not normally have access to such treatment, due to lack of means and the

impossibility of traveling to the capital. These surgeries essentially concern pathologies called «simple» but disabling (hernias, bone diseases, cleft lip/palate). These missions also make it possible to identify children suffering from more severe pathologies and to refer them to the CHU of the capital.

This is also an opportunity to complete the training of pediatric surgery students located in the capital by showing them how their theoretical knowledge can be put into practice, under the supervision of senior surgeons.

The aim is to train the future generations of pediatric surgeons who will be assigned notably to provincial hospitals and to build the pediatric capacities of anesthesia and intensive care personnel.

In 2021, La Chaîne de l'Espoir organized two itinerant missions

The first mission was organized in the hospital of the zone of Klouekanmey in Benin: 712 children benefited from consultations in pediatric surgery and 191 children had operations.

Carried out in collaboration with the department of pediatric surgery of the CNHU-HKM of Cotonou, under the supervision of Prof. Michel Armand Fiogbe, the mission was conducted with

the support of Dr. Émilie Langlais, a pediatric intensive care anesthetist in France. Six students in surgery and anesthesia participated.

A second mission was organized in Togo in the Hôpital Bethesda d'Agou in December: 445 children were seen in consultation and 115 were operated on.

This mission was carried out in collaboration with the pediatric surgery team of Prof. Jean-Pierre Gnassingbe of the CHU Sylvanus Olympio de Lomé (eight students), with the support of Dr. Chantal Chazelet, a pediatric anesthetist in France.

Strengthening the teaching of essential surgery

Dr. François PONS

**Surgeon (general and thoracic),
Professeur at Val de Grâce Hospital, Paris**

«Essential surgery can be defined as the practice of the basic surgical procedures, life-saving, inexpensive, not too difficult to perform by doctors who are not surgeons or even by non-doctors. Although the word is recent, the concept is not new and it has been practised, especially in Africa, for several decades. It seems like a solution to the shortage of surgery in those countries, a cause of high mortality. (Lancet, Global Surgery, 2015).»

Training in essential surgery for doctors practising far from big cities looks like a solution to deal with the lack of surgical resources and improve access to surgery for populations in developing countries.

In view of this fact, La Chaîne de l'Espoir is collaborating with the University of N'Djamena and the Ministry of Public Health **of Chad** on a pilot project for training in essential surgery aimed at improving the capacities of Chadian doctors assigned to the district hospitals in the country.



<https://www.facebook.com/ministeresantetchad/posts/1261454977634907>

Dr. Chantal CHAZELET

**Pediatric anesthetist, Hôpital Nord
CHU Grenoble Alpes**

«The goal is to improve techniques and procedures, adapting them to toddlers. Some pathologies are disabling and surgery will allow children to get back to normal life, especially at school, or to save a life.»



Mission in Togo, December 2021

Training and operating as close as possible to isolated populations

Far from everything, cut off from firm ground, the populations of the Chars islands **in Bangladesh** live in a precarious environment. On these islets, the land is fertile but life is difficult: the most vulnerable populations of the country are settled here, without running water, electricity or means of transport and deprived of all services and public infrastructure. Here La Chaîne de l'Espoir supports the work of the Friendship organization which has set up five floating hospitals to facilitate access to medical care for these populations.

In 2021, due to the health context and the closure of borders, training sessions and exchanges of practices were carried out through webinars by the medical personnel of the organization for the benefit of 59 healthcare staff. However, a mission was conducted in the south, at the hospital of Shyanmagar, by Dr. Jean Flori, a pediatrician, and Dr. Geneviève Vaillant, a nutritionist, endocrinologist and diabetologist, which allowed consultations for over 260 children.



Ensuring prevention, treatment, screening, information and care

FOR CHILDREN PROVIDING **EARLY AND EFFECTIVE TREATMENT**

Prior to surgery, which is the core competence of our organization, the prevention of certain pathologies, giving information to families and raising their awareness of behavior fostering children's health make it possible, in more severe cases, to avoid or facilitate major surgery or operations carried out too late.

In 2021, La Chaîne de l'Espoir continued along this path, notably in Togo, Haiti, India, Nepal, Thailand and Lebanon.

■ Since 2019, in addition to intervening on pediatric orthopedic surgery, La Chaîne de l'Espoir also set up **in Lebanon** a project for screening and early treatment of congenital orthopedic conditions in collaboration with primary care health workers in the Bekaa valley. In this country, a large number of children find themselves disabled whereas their condition could have been detected and treated at birth. Early detection makes it possible to treat children with less invasive techniques (kinesitherapy, for example, or the fitting of corsets) and to greatly increase the chances of preventing the development of a disability.

In these intervention contexts where healthcare systems are fragile, prevention is absolutely vital. This involves the totality of medical and socio-medical means used to prevent the appearance, aggravation and extension of diseases or their long-term consequences.

In some countries, La Chaîne de l'Espoir intervenes in the school environment, recognising the interaction between health and education, with an approach based on three aspects: awareness, screening and treatment.

Espeir **DATCHIDI**

Mission Head of our Togo-Benin office

«Our interventions in school health have had a significant impact on knowledge and practices in schools. From 2019 to 2021, the frequency of violence by teachers on students has decreased, there is greater awareness among students of the risk of early pregnancy, so that there is a 25% reduction in teenage pregnancies in the establishments. Health education, screening and treatment of learning disabilities have undoubtedly had a huge influence on the behavior and practices of the beneficiaries of school communities in our zone of intervention.»

■ **In Togo**, the project «My Health, my School, a Collective Challenge», supported by the French Development Agency, continued this year and involved 143 classes in eight establishments in Lomé, a total of 9,800 students. They benefited from 3,369 awareness-raising actions on the themes of sexual and reproductive health, non-violence, water, hygiene and sanitation. The pilot project for detection of learning disabilities

also went ahead in four establishments in Lomé: 450 pupils in nursery and primary schools benefited from a screening test for learning disabilities, a health assessment and screening for sensory conditions. Treatment for pupils with a disability or pathology was assured by our organization.

In addition, in 2021, 1,520 vulnerable children, including 809 pupils in the Adjallé primary school in Lomé, continued to benefit from nutritional support through free meals in the canteen and 710 children received hygiene kits and free health assessments and medical treatment.

■ **At the other end of the world, in Haiti,** La Chaîne de l'Espoir has since 2016 been providing health support for 2,500 children every year in the framework of its school health project. These children from ten rural schools in the south-east are screened for sensory problems and chronic illnesses which might hinder their schooling. In addition, when necessary, there is treatment for the detected disabilities and permanent care for severe pathologies.

■ **In Thailand, on the other side of the planet,** screening and school health are still very limited in rural areas due to the shortage of health professionals. In 2021, La Chaîne de l'Espoir continued to work in favor of bucodental health, eye care and sexual and reproductive health.

Preventive activities for bucodental health were conducted for 871 children.

175 health volunteers were trained to carry out interventions in 13 schools, facilitating screening for 1,943 primary school children.

On the subject of sexual and reproductive health, La Chaîne de l'Espoir supported 8 interventions in 7 elementary schools.

■ In the same vein, our organization continued its support in 2021 for the local organization Child Protection Centers and Services **in Nepal**, initiated in 2011. The project helps to provide medico-social supervision and access to care for children who are vulnerable and exposed to the dangers of the street. This is made possible by 32 health centers, set up in

Dr. Laurence BOUTIN

Pediatrician, Deputy Medical Director and school health referent at La Chaîne de l'Espoir

«This comprehensive program enables early detection of disabilities in schoolchildren. In the same way, raising the awareness of children and the educational community about important subjects such as hygiene, nutrition and prevention of domestic accidents is a real added value for a healthy environment and for child development in developing countries.»

schools, which monitor on a daily basis the 10,000 children who are beneficiaries of this program.

■ **In India,** La Chaîne de l'Espoir supports the medical follow-up of 1,500 children exposed to the dangers of the street in the framework of five day care centers of the Taabar organization. 40,000 consultations took place in 2021 through two mobile clinics, including one entirely dedicated to girls.



Christiane Moiroud

Host family in Lyon

«They are very endearing children who consider us as very important people that they can rely on during this period of their life.»

Continuing personalized attention

FOR ALL CHILDREN IN FRANCE TREATED FAR FROM THEIR LOVED ONES

Access to care and individual attention for sick children is the core motivation for the actions of La Chaîne de l'Espoir. Faced with inequalities due to country of origin, our organization arranges the transfer of children to countries enabling their treatment. The hospitalization of children is sometimes a sharp break with their familiar environment, aggravated when the parents cannot be present. La Chaîne de l'Espoir organizes in France a program of personalized accompaniment which offers children moral and emotional support.

Thus, in 2021, 74 young patients (including 28 less than two years old), coming from Africa and suffering from cardiac pathologies (93%), were able to be transferred to different French hospitals. This was made possible thanks to the reopening of borders and the coordinated work of all the French players involved. French host families, an essential link in the chain of solidarity, responded positively to our appeals.

Another means of action to provide care for sick African children is to transfer them to neighboring countries.

Thus, in 2021, La Chaîne de l'Espoir transferred two young Chadian cardiac patients to Sudan, where our partner Emergency operated on them. Eight children suffering from esophageal stenosis from Benin, Congo-Brazzaville, Mali, Senegal and Chad were operated in Ivory Coast, at the HME of Bingerville.

In addition, the program for the accompaniment of hospitalized children in France made it possible to support 93 isolated children in thirteen establishments in Île-de-France and La Réunion.

A new partnership has been developed with the Tours CHU in order to meet the needs of their little patients who receive few visits or none, for various socio-economic reasons.

The strength of this program lies in the close collaboration with the intervening establishments and the commitment of volunteers, who receive training and monitoring throughout their engagement.

For their part, the «marraines et parrains soleil» devote two or three days a week to visiting a child, sometimes over a period of several months or years. For these very lonely children, most of them less than five years old, this accompaniment is an interlude given to play, reading, dialogue and affection.

Sylvie Guillaume

In charge of volunteers in the AEH Program

«Our role could be summed up as follows: be there. That's what brings psychological security.»

Outlook for 2022



Anouchka Finker
CEO

«For La Chaîne de l'Espoir the year 2022 marks a return to normality as regards missions on the ground, the deployment of projects and the management of activities.

It's a return to normal also in terms of social links, with the resumption of face-to-face meetings, team-building or fund-raising events. The pleasure of being together, reunited again, is a relief for us all the associative world suffered greatly from the isolation imposed by the pandemic.

From a global perspective, 2022 is unfortunately historic, with humanitarian needs reaching record levels, a looming worldwide food crisis, due to the combined effect of armed conflicts, the increase in the number of displaced people, the consequences of climate change and the socio-economic effects of the health crisis.

In Afghanistan, the worst drought for 27 years and the cumulative effects of more than four decades of conflict have had a severe impact on food security.

As a result, the management and financing model of our French hospital in Kabul has had to be totally revamped so as to ensure the continuity of its functioning while taking account of the destitution of a population faced with an unprecedented humanitarian crisis.

What is more, multiple violations of international humanitarian law jeopardize people's safe and unhindered access to humanitarian aid; security challenges are therefore an increasing preoccupation.

La Chaîne de l'Espoir's territories of action are therefore mostly in situations of crisis and instability. This affects our modes of intervention which must be more responsive, more global and on shorter time scales. In this strained context, the tragedy of Ukraine immediately mobilized us.

La Chaîne de l'Espoir set up a project to support the hospital and aid network, dispatching traumatology kits, consumables, medicines, infant milk... But also, creation of a training center for war surgery and dispatch of medical devices and medicines specifically for treatment of war wounded.

The provisional budget for the year 2022 amounts to more than € 30M with one third of institutional financing, for our programs in Afghanistan, Iraq, Ukraine, West Africa, Lebanon, Jordan, Togo and Venezuela.

The diversification of our modes of financing, combined with the loyalty of our 100,000 private donors, our big institutional partners and our sponsors, enable us to ensure the development of our activities, in spite of the economic difficulties which affect all sectors.

I wish to express my heartfelt thanks to them and to all our collaborators, employees and volunteers who support us and who are the life and blood of our Chaîne de l'Espoir.»

Principles of financing and execution of activities

The resources

The resources of the organization come from four main sources of financing:

- 1 • The **general public** is the main source of revenue of La Chaîne de l'Espoir. These donors support the actions of the organization either by one-off donations to help finance surgical operations on children or by regular donations enabling medium or long term actions, notably organizing local treatment and training missions, equipping hospitals and implementing educational programs.

Appeals to the general public are made by post, email or telephone. Regular donations by automatic bank transfer and online donations are our two main lines of development.

- 2 • **Companies and foundations** participate in financing big projects of La Chaîne de l'Espoir by means of partnerships which may last several years, notably for hospital projects, treatment and training programs and medical equipment programs. They may also contribute to the care program for children in France, to educational aid and school health programs or, in a more one-off manner, to operations on one or several children. Events or performances are also organized jointly by companies and La Chaîne de l'Espoir so as to unite employees around a common cause (sports events, auctions, gala evenings, ...).

- 3 • **Institutional partners** support big projects by La Chaîne de l'Espoir which last over the long term and which, by an integrated approach, aim to provide populations with a multifaceted and sustainable response to their needs.

- 4 • La Chaîne de l'Espoir seeks to arouse interest in bequests on **the part of donors** and the general public by means of the newsletter, publications and our website in order to generate exchange and requests for information. A specific and regular relation

is then established with the donor (bequest brochure, information...).

Utilization of different sources of funds depending on the type activity

Fund collected from the general public, bequests and part of the private funds from companies (sponsorship) finance the totality of the activities of La Chaîne de l'Espoir (treatment for children in France, treatment abroad, school health, training, equipment and construction, ...).

When they are dedicated to a specific project, these funds are earmarked so that they can be traced in our accounts. Their utilization is then devoted to programs defined in agreement with the partner, whose objectives, budget and activities correspond to precise specifications.

Voluntary contributions in kind

To finance its actions, La Chaîne de l'Espoir also relies on in-kind support.

1 - Volunteer work makes an essential contribution to the activity and influence of our organization.

Volunteers on mission abroad: every year, several hundred surgeons, doctors, nurses and technicians ensure the success and professionalism of the medical and paramedical missions of La Chaîne de l'Espoir overseas.

Volunteers for the child support program in hospitals in France: thanks to them, children, mostly French, whose parents are rarely or never present, can benefit from regular visits and various activities which make their hospital stay less distressing.

Host families: children transferred to France for surgical operations are looked after by our volunteer host families. The average duration of a child's stay in France is about 2 months and during this period the host families give their time to our organization.

Volunteers at the headquarters: volunteers based in the head office participate actively in administrative work, fund-raising and the organization of missions overseas.

Local branches: located all over France, our dynamic volunteers participate in welcoming children who have had operations in the provinces and in organizing events to enhance the reputation of La Chaîne de l'Espoir and to raise funds.

2 - Material donations and services in kind provide important support for our actions. Medical material, equipment or furnishing, as well as different services, notably in communication, are given to us free of charge by professionals.

3 - Skills sponsorship means that a company puts qualified staff at our disposal for periods ranging from a few days to several years. This is a great help to La Chaîne de l'Espoir and a fulfilling experience for the employees involved.

Principal aspects of relations/ conventions with French or foreign organizations which operate on behalf of La Chaîne de l'Espoir

The collaboration of La Chaîne de l'Espoir with other organizations is generally regulated by specific agreements which set out, among other things, the nature of the beneficiaries, the purpose, the definition of the operations envisaged, the responsibilities of each organization involved, the planned timetable and the modalities of monitoring and evaluation of operations.



Governance

The legal structure of La Chaîne de l'Espoir

La Chaîne de l'Espoir is an association established according to the French law of 1st July 1901 and declared to the Préfecture de Paris on 12th December 1994 under the N° 94/4993.

The scope of the annual report of La Chaîne de l'Espoir

The scope of the annual report of La Chaîne de l'Espoir covers the totality of its activities: treatment of children in France, emergency actions, treatment and training missions, constructions, equipment, and health programs in schools.

The members of La Chaîne de l'Espoir

La Chaîne de l'Espoir has 212 active members, all with voting rights.

The Board of Directors of La Chaîne de l'Espoir in 2021

The Bureau

Chairman:

Dr. Éric CHEYSSON,
Head of the Vascular Surgery Department at l'Hôpital René Dubos, Pontoise
End of term of office: June 2025

Vice-presidents:

Dr. Philippe VALENTI, Hand surgeon at Clinique Bizet, Paris
End of term of office: June 2025

Prof. Gérard Babatasi, Cardiac surgeon
End of term of office: June 2025

Secretary General:

Jean-Roch SERRA, Former director of the medical branch of Siemens group
End of term of office: June 2025

Treasurer:

Sandrine GUEBIN TURQUETIL, Chartered Accountant, Administrative Director of MACSF group
End of term of office: June 2025

Members

Dr. Catherine AMREIN, Intensivist
End of term of office: June 2023

Dr. Sylvain CHAUVAUD, Cardio-vascular surgeon
End of term of office: June 2023

Prof. Christophe CHARDOT, Pediatric surgeon
End of term of office: June 2025

Dr. Michel CYMES, O.R.L. specialist at l'Hôpital Européen Georges Pompidou, Paris – Journalist
End of term of office: June 2023

Gonzague DESFORGES, Retired engineer
End of term of office: June 2026

Dr. Jean-Michel DAVAINÉ, Vascular surgeon
End of term of office: June 2027

Emile DINET, Director General Delegate of SENY group
End of term of office: June 2023

Philippe DUMAS, Retired Inspector General of Finances
End of term of office: June 2023

Denis DUVERNE, Chairman of the Board of Directors of Axa
End of term of office: June 2026

Prof. Antoine LAFONT, Interventional cardiologist at l'Hôpital Européen Georges Pompidou, Paris
End of term of office: June 2026

Jacques MAILLOT, Chairman and Founder of Nouvelles Frontières
End of term of office: June 2026

Françoise MONARD, Senior consultant
End of term of office: June 2023

Philippe PEYRAT, General Delegate of the Engie Foundation
End of term of office: June 2025

Sébastien PRAT, Lawyer, Paris
End of term of office: June 2026

Prof. Yann RÉVILLON,
Former Head of the Pediatric Surgery Department,
Hôpital Necker-Enfants malades, Paris
End of term of office: June 2025

Dr. Dominique TOURNAY, Anesthetist
End of term of office: June 2023

Dr. Jean VENDROUX, Plastic surgeon
End of term of office: June 2023

AP/HP (represented by M^{me} Florence VEBER,
Director of International Affairs at l'Assistance
Publique - Hôpitaux de Paris)
End of term of office: June 2021

The management team

The operational management is assured by a management team responsible for the implementation of the strategy set out by the governance. This team includes a general direction, a deputy general direction in charge of operations, an administrative and financial direction, a development direction and a human resources direction.

The specialist committees of La Chaîne de l'Espoir

The management committee

The role of the management committee is to ensure that the decisions of the Board of Directors are implemented and that the activities and missions of La Chaîne de l'Espoir are properly carried out. It is made up of the members of the bureau and the operational directors of the association. It meets at least once a month.

The financial committee

The role of the financial committee is to advise the Board of Directors on financial decisions at a strategic level, such as policy on own funds and investment choices.

The audit and internal control committee

The audit and internal control committee is an internal control organ assuring active monitoring of risk prevention and compliance with rules of

governance. It is composed of qualified members of the Board of Directors and external experts. It has a direct link to the Audit and Internal Control Manager (AICM) who reports to the committee.

It analyses the risks to which the organization is exposed (on the basis of a cartography of risks which the AICM updates regularly) and ensures that the organization and procedures take account of their prevention.

It also makes sure that the association is managed in compliance with the law and with rules of good governance, that there are formalized procedures with adequate controls over management processes and that the production and external auditing of social accounts are carried out in accordance with regulations.

Main provisions adopted by the association to ensure effective internal control

The Audit and Internal Control Manager (AICM) is in charge of the formalization of internal control provisions. The AICM advises and supports the different departments in developing the association's management and internal control procedures and regularly checks on their proper implementation. The AICM organizes or directly carries out internal audits at the headquarters and on the ground.



In the interests of independence, the AICM reports directly to the General Management which may also entrust him or her with internal enquiries. Furthermore, La Chaîne de l'Espoir regularly calls in experts from outside the association to audit its procedures and strategy. La Chaîne de l'Espoir is also accountable to different external authorities in charge of auditing the proper management and governance of the association:

- Le Don en Confiance, a donations oversight body, brings together French associations and foundations having in common their compliance with a number of deontological principles in terms of budgetary rigor, accounting transparency and governance.
- Deloitte, an independent auditing firm which certifies every year the rigor of our management.
- International institutional financial backers (ECHO, AFD, CDCS, ...) monitor our activities, our accounts and our modes of management and governance, both at the headquarters and on the ground.
- La Chaîne de l'Espoir is liable to be audited at any moment by the French Court of Auditors.

Main provisions adopted by the association to ensure prevention of fraudulent practices, conflicts of interest and to promote high ethical standards

In order to prevent and fight against any illegal, dishonest or immoral practices with which it may be faced in the framework of its activities, La Chaîne de l'Espoir adopts a zero tolerance policy in this matter and has implemented several provisions. Contractual relations between La Chaîne de l'Espoir and its suppliers are governed by deontology clauses which enshrine their ethical commitments and provide for verifications and, if need be, sanctions.

La Chaîne de l'Espoir has policies for the prevention of fraud, corruption and ethical risks which are based notably on the principle of separation of tasks and functions and on internal control provisions. All collaborators of La Chaîne de l'Espoir are furthermore subject to a code of ethics and behavior which they pledge to respect (and enforce) and which defines and helps spread the values we represent. By signing this document, all our employees show their commitment to the humanitarian and ethical principles of the organization.



Evaluation of the quality of actions of La Chaîne de l'Espoir

The close contacts established with the health authorities of countries where La Chaîne de l'Espoir intervenes make it possible to assess the utility and effectiveness of our actions.

Before setting up a project, one or several evaluations are generally made so as to determine the context, the needs, the objectives to be reached, the expected results, the activities to be carried out, as well as the human and material means required. The study of the viability and sustainability of the project is also considered. Once these elements have been obtained, a provisional budget is established.

The monitoring and evaluation of programs is carried out on the basis of those elements for which achievement and impact indicators are defined and followed regularly by means of project management charts. Financial steering in turn is carried out through monthly updates of reporting on actual and forecast budget consumption.

For certain projects, enquiries are made at the beginning, in the course and at the end of the project so as to assess the progress made and the impact of the project. Surveys on the satisfaction of the beneficiaries at the end of the project may also be conducted. If necessary, program evaluation is carried out by specialist external structures.

Human resources

The organization of La Chaîne de l'Espoir is based on a structure of permanent salaried employees but also on a large network of volunteers (host families, accompanying persons, medical and paramedical, technicians, administrative people) in France and for the conduct of its missions overseas.



Number of employees in 2021

On 31 December 2021, La Chaîne de l'Espoir had 55 full-time equivalent employees at the head office in France.

La Chaîne de l'Espoir also has numerous employees, expatriate or local, in its structures overseas in our areas of intervention:

Afghanistan.....	32
Mali.....	14
Togo.....	13
Iraq.....	12
Jordan.....	7
Lebanon.....	6
Madagascar.....	5
Burkina Faso.....	4
Thaïlande.....	3
Cambodia.....	2
Ivory Coast.....	1
Total.....	99

Number of volunteers in 2021

La Chaîne de l'Espoir was able to count on the support of 623 volunteers for all the functions of the organization:

Volunteers on programs abroad.....	133
Volunteers on programs in France.....	105
Host families.....	250
Volunteers in local branches.....	67
Volunteers at headquarters (including Board of Directors).....	68
Total.....	623

Remuneration policy in the organization

The remuneration policy of La Chaîne de l'Espoir is based on the professional career, competence and responsibilities of every employee in the organization. La Chaîne de l'Espoir has striven to put in place a coherent salary scale and to conduct regular assessment interviews with every member of staff.

The combined annual remuneration of the top three senior executives amounts to €220,053.



Finances

Principle forms of income by origin

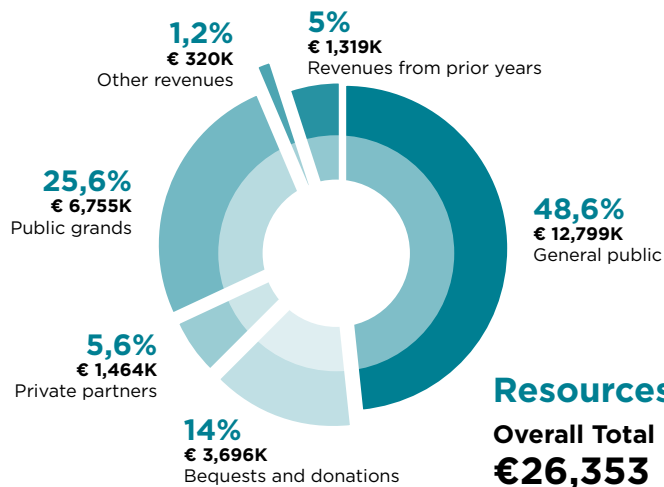
The generosity of donors has progressed overall (+4% for gifts by hand and -9% for bequests and donations, after an exceptional year) and represents 63% of our resources.

Donations from sponsors are down, after the year 2020 during which the organization benefited from exceptional funding in the framework of the health crisis. They represent 6% of funding.

Public subsidies amount to € 6,755K in 2021, up 17% compared to the previous year, and make up an increasing part of the income of the organization (26%).

These grants come mainly from the French Development Agency, the Ministry of Foreign Affairs and the European ECHO funds, co-financing our projects in Iraq, Afghanistan, Jordan, Togo, Lebanon, Burkina Faso, Ivory Coast, Mali and Venezuela.

Other income includes ancillary income linked to provision of services, membership contributions,



financial income, extraordinary income, various management income and reversals of provisions. Significantly higher than the previous year (+153%), they remain marginal, at € 320K, as a proportion of total income.

Funding recorded in dedicated funds, unused at the time of closure, is carried over as income in the income statement of the following years, as and when the commitments are fulfilled. In 2021, the use of dedicated funds of previous years amounts to € 1,319K and concerns notably projects in Afghanistan, Mali and school health projects.

Simplified Balance Sheet (in K€)

Assets	2021	2020
Fixed assets	8,421	9,328
Current assets	26,683	26,269
Total Assets	35,103	35,597
Liabilities	2021	2020
Association funds	12,399	11,767
- of which project reserves	2,000	560
- own funds exclusive of project reserves	10,399	11,207
Provisions and deferred and dedicated funds	5,962	6,511
Debts	8,375	8,262
Deferred income	8,367	9,058
Total Liabilities	35,103	35,597

Policy on reserves

The financial year shows a surplus of € 632K for the year 2021 which marked the resumption of our activities after a year of sharp slowdown due to the health crisis.

The surplus generated in 2021 will strengthen the association funds and will be placed at the disposal of our missions in 2022 and the following years, on validation by the Board of Directors.

Thus, the reserves as at 31 December 2021 represent 5.9 months of activity, a level necessary to ensure the continuity of our actions in the field and satisfy the commitments made by the organization. These association funds furthermore enable us to cover unforeseen funding needs due to emergencies or a sudden decrease in income, and to finance investments and their renewal.

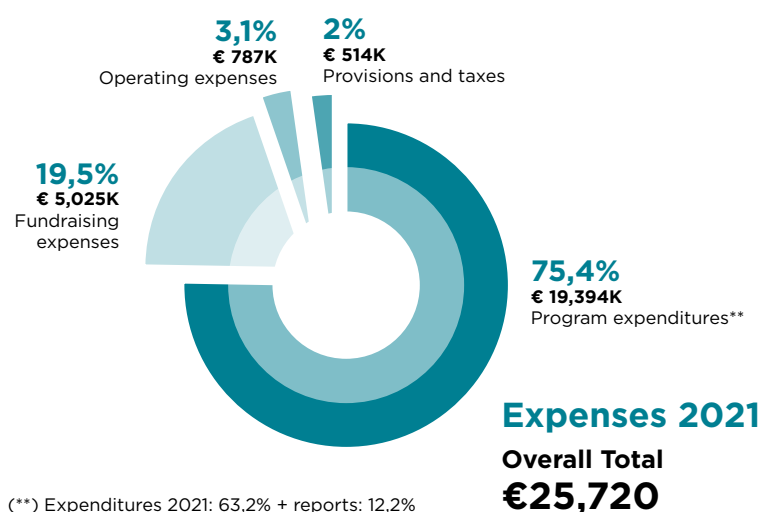
Principle forms of expenditure by purpose in 2021

Program expenditures carried out represents € 16,262K and € 3,133K programmed commitments, or 75% of total expenses.

Thus, in spite of difficulties, it was possible for funds invested in our missions to increase by 17% compared to 2020, marking the resumption of our activities after the COVID restrictions of 2020. Current expenses amount to € 6,326K.

These expenses include fundraising costs, operating costs, provisions and taxes. They are up compared to 2020 (+ 11%) but represent a lesser proportion than the previous year in the total expenditure of the organization (25.6%).

Operating expenses, the indispensable basis for our missions and a guarantee of the sound management of income, are stable over the year at € 787K. Development expenses (fundraising,



communication, management of donations and tax receipts, donor relations) amount to € 5,025K, at the same level as the previous year. Allocations to provisions and depreciations are up, due to a provision for depreciation recorded, in accordance with the prudence principle, on a part of the receivables towards the affiliated foundation in the USA, amounting to € 489K.

Significant events of the year

International Network



In 2019, La Chaîne de l'Espoir created an affiliated structure under American law, the USFC Foundation, with a view to extending its medical network and diversifying its sources of funding to include American donors, both private and institutional. Donations collected in the United States will contribute to the funding of all of the programs run by La Chaîne de l'Espoir. In order to launch this American foundation, La Chaîne de l'Espoir, in accordance with an agreement signed in 2021, provided it with a cash advance amounting to € 986K on December 31, 2021.

The investment will become profitable over time, with an equilibrium predicted in 2025 which will

be used above all to fund projects in the field. In accordance with the prudence principle, it was therefore decided to depreciate 50% of this receivables during the financial year.

Transformation into a Foundation

On 11 October 2021, the general meeting approved the principle of transforming La Chaîne de l'Espoir into a «Fondation Reconnue d'Utilité Publique (FRUP)», a foundation recognized for its public utility. This better-protected legal status will make it possible to continue and develop the action of La Chaîne de l'Espoir in favor of disadvantaged children and their communities.

Without changing its mandate or its values, it aims, through this transformation, to ensure the sustainability of the missions of its founders, and to act, more than ever, in a relation of confidence with its partners and donors.

Index by continent

WE INTERVENE WHERE THEY NEED US

COUNTRY	PAGE	PROJECT	BUDGET IN €
MULTI-COUNTRY			223,898
Multi-country	16	Degree in specialized Studies in Pediatric Surgery (DES-CPD) in West Africa	223,898
EUROPE			1 368,083
France	10, 34	Support for Hospitalized Children (AEH), Transfer of children and treatment in France (SOIF)	1 368,083
AFRICA			6,392,107
Benin	10, 16, 23, 30, 32	Pediatric surgery, burns, heart disease, mobile surgery programs, biomedical equipment	338,724
Burkina Faso	10, 11, 16, 19, 23	Pediatric cardiac surgery, reconstructive surgery (Noma, maxillofacial pathologies), echoes®, biomedical equipment, strengthening of technical skills, awareness, psycho-social and economic support, prevention and screening	917,237
Cameroon	11, 25, 34	Pediatric cardiac surgery, interventional cardiology, strengthening technical capacities	15,591
Ivory Coast	16, 19, 25	Cardiac surgery, caustic stenosis, laparoscopic surgery, mother's health, prevention and awareness, medical equipment and consumables, echoes®	431,337
Guinea	16, 21, 25	Biomedical equipment, modular hospital design	21,545
Madagascar	11, 21, 25	Pediatric cardiac surgery, construction and rehabilitation, biomedical equipment, pediatric echocardiology consultation, early screening, training and improving skills, echoes®	1,163,148
Mali	10, 11, 16, 19, 23, 25	Cardiac surgery, reconstructive surgery (noma, maxillofacial pathologies, burns sequelae), caustic stenosis, prevention and awareness, biomedical equipment, echoes®	1,886,744
Mauritania	10, 11, 25	Exploratory cardiac surgery mission	-
Mozambique	11	Cardiac surgery, cardiology, biomedical equipment, consumables and medicines, Children's Pavilion, echoes®	93,437
Rwanda	11	Exploratory mission	4,807
Senegal	9, 11, 16, 23, 25	Pediatric cardiology, cardiac surgery, digestive endoscopy, medical training, strengthening of technical skills, supply of biomedical equipment and consumables, Children's Pavilion, south-south transfers	598,565
Somaliland	21, 25	Exploratory mission, evaluative mission of infra, biomedical equipment, consumables and medicines	51,389
Chad	30	Essential surgery, medical training	9,720
Togo	16, 23, 30, 32	School health, cardiac pathologies, brachial plexus, neurosurgery, echoes®, itinerant surgery missions, biomedical equipment	859,863



COUNTRY	PAGE	PROJECT	BUDGET IN €
LATIN AMERICA - CARIBBEAN			552,640
Haiti	9, 27, 32	School health, ophthalmology, awareness, prevention and screening of hearing and language disorders, training in child psychology and well-being, supply of consumables and medicines	447,199
Venezuela	24	General pediatric surgery, supply of biomedical equipment, supply of consumables and medicines, strengthening of technical skills	105,441
MIDDLE EAST			3 442 488
Iraq	6, 10, 21, 27	Hospital construction, biomedical equipment, consumables and medicines, training and improving skills, echoes®	1,076,304
Iran	-		4,451
Jordan	6, 10, 11, 16, 19, 25, 27	Cardiac surgery, orthopedic surgery, screening, physical therapy, mental health, training of health professionals in the early detection of cardiac and orthopedic malformations, echoes®	1,123,990
Lebanon	6, 11, 16, 27, 32	Orthopedic congenital malformations surgery, early detection, emergency care, civil society training and improving skills	1,127,871
Syria	-	Biomedical equipment routing, support and technical maintenance	109,872
ASIA			4,216,375
Afghanistan	6, 9, 11, 16, 19, 20, 23, 27	General surgery, cardiac surgery, orthopedic surgery, gynecology-obstetrics, maternal health, cardiology, orthopedics, radiology, oral care, ophthalmology, gynecology-obstetrics, neonatology, postgraduate training program, capacity building, delivery of biomedical equipment and consumables, Children's Pavilion, echoes	3,147,553
Bangladesh	20, 25	Essential surgery, maternal and gynecological health, training and improving skills, provision of biomedical equipment	3,237
Cambodia	10	Cardiac surgery, neurosurgery, cardiology, Children's Pavilion	64,675
India	10, 32	School health, prevention and screening, child protection, psychosocial support	374,755
Nepal	32	School health, awareness and prevention, child protection, psychosocial support	247,214
Thailand	9, 32	School health, oral health, eye health, sexual and reproductive health, psychosocial support, child protection	278,062
Vietnam	11	Cardiac Surgery, Children's Pavilion	100,879
TOTAL			16,195,592

Acknowledgements

Institutional partners

Agence Française de Développement (AFD), Agence Régionale de Santé de l'Océan Indien, Ambassades et Consulats de France des pays dans lesquels La Chaîne de l'Espoir intervient, Conseil Régional d'Île-de-France, Direction de la Coopération Internationale Monaco, Direction Générale de l'Aide Humanitaire et de la Protection Civile de la Commission Européenne (DG ECHO), Eu Regional Trust Fund in Response to the Syrian Crisis, Madad Fund, Expertise France (EF), Global Affaires Canada (GAC), Institut National des Hautes Etudes de la Sécurité et de la Justice (INHESJ), Ministère de la Défense, Ministère de l'Europe et des Affaires Etrangères-Centre de Crise et de Soutien (CDCS), Préfecture de La Réunion.

Operational partners

AB CFAO, Académie Nationale de Chirurgie, Air Liquide, Antenna France, ASFA Hôpital d'enfants, Assistance Publique / Hôpitaux de Paris, Association des Agents de Maintenance Biomédicale, Association New Face, Association XL Biking, AVESSOC, Aviation sans Frontières, Bambini Cardiopatici Nel Mondo, Barbosa Vivier Architectes, BEMING, Bien-Etre et Développement, Bilaadga, Cadéia de Esperança, Centers and Services au Népal, Centre Cardio-Thoracique de Monaco, Centre de Réadaptation Cardiaque les Grands Prés, Centre de rééducation motrice pour tout-petits Elisabeth de la Panouse-Debré, Centre de Transfusion Sanguine de Dijon, Centre hospitalier de Soavinandriana, Centre Médical du Château des Côtes Les Loges en Josas, Centre Pédiatrique des Côtes, CH d'Aix en Provence, CH de Rochefort, CH Sainte Anne, Child Protection Centers and Services (CPCS), CHRU de Tours, CHU de Caen, CHU de Dijon, CHU de Fann, CHU de Lausanne, CHU de Nantes, CHU de Rennes, CHU de Toulouse, CHU Félix Guyon de La Réunion, Clinique Brétéché de Nantes, Clinique Chirurgicale de Boulogne-Billancourt, Clinique du Parc Lyon, Clinique Edouard Rist, Clinique Jouvenet Paris, Clinique Louis Pasteur Toulouse, Clinique Médipôle Garonne, Clinique Paul d'Egines Champigny-sur-Marne, Collège National des Gynécologues et Obstétriciens

Français, Croix Rouge Côte d'Ivoire, Egis, Ensemble pour Eux, Espace Pédiatrique Alice Blum Ribes, European Heart for Children, Eversheds Sutherland France, Face au Monde, FARHANG TAHA LAW FIRM, Fédération Opéra, Fondation Children of Africa, Fondation Kantha Bopha, Fondation Nadia's Initiative, Fondation Paradis des Indiens en Haïti, Fondation Paul Parquet, Fondation Sentinelles, French Medical Institute for Mothers and children (FMIC), Friendship, Handicap International, Heartbeat-La Chaîne de l'Espoir Liban, Hôpital Armand Trousseau, Hôpital Bichat, Hôpital de la Timone Marseille, Hôpital de Pédiatrie et de Rééducation de Bullion, Hôpital d'enfants Margency, Hôpital Européen Georges Pompidou Paris, Hôpital Haut l'Evêque Pessac Bordeaux, Hôpital Marie Lannelongue, Hôpital Necker-Enfants malades Paris, Hôpital Principal de Dakar, Hôpital Robert Debré, Hôpital Saint-Joseph Paris, Hospices Civils de Lyon, House of Hope Foundation-Thailand, Humatem, Hymne aux Enfants, Institut Montsouris, Institut Necker de Pédiatrie en Haïti, Institut Zanjireh Omid, Jeunesse et Avenir Togo, Kanlayanamit Teachers' Group, Khatib & Alami, Kiwanis, La Chaîne de l'Espoir Belgique, La Chaîne de l'Espoir Luxembourg, La Radio Communautaire La Voix du Paysan, Mécénat Chirurgie Cardiaque, Monaco Collectif Humanitaire, N5 Avocats, NEL Architecture, Nyagbé, Première Urgence Internationale, Promediation, Proquest Engineering & Consulting, Rafik El-Khoury & Partners, Réseau de développement Aga Khan, Ribambelle, RM Architecte Paris, SETEC, Société Européenne de Cardiologie, Société Savante de chirurgie orthopédique et traumatologique, Solidarité Sida, Taabar, Talents et Partage, Terre des Hommes, Ton Kla Teachers'Group, Union des Organisations de Secours et de Soins Médicaux (UOSSM), Union of Relief & Development Associations, Univeristé Polytechnique Ouest Africain (UPOA), UNOSEL, Wash Volunteers, Zozik Group.

Sponsors

Abbot médical, Agence Pascal Desprez, Air France Mécénat Humanitaire, Algade, Apis Medical, Avena Event, Aventure Peugeot Citroën DS, Avlis Conseil Formation Placement, Axa,

B Braun, Banque Nationale Développement Agricole, Bernard Magrez SAS, Bernard Veyron Holding, Boehringer Ingelheim, Bouygues Bâtiments International, Children and Future, Clarins, Club des Entreprises d'Evreux, Digital Way Group, DNCA Finance, DOW Chemicals, Drager Medical, Edwards, Efficiem propreté, Eiffage, Emirates, Emvest International, Erbe Medical, Essilor, Famille Tacquard, FMM, Fondation Air Liquide, Fondation Borenis, Fondation Children of Africa, Fondation Cuomo, Fondation de France, Fondation de l'Avenir, Fondation ENGIE, Fondation Etincelle, Fondation Lefoulon Delalande, Fondation Mérieux, Fondation nehs Dominique Bénèteau, Fondation Orange Mali, Fondation ORLO, Fondation Pierre Fabre, Fondation Primonial, Fondation Thierry et Annick Desmaret, Fonds Mécénat Servier, Fonds Réflexe Solidaire, Fujifilm, Gamida, General Electric, Getinge, Grande Loge Traditionnelle et Symbolique Opéra, Inovimo, Integral process, Intersurgical, Karen Woo Fondation, Kfunds, La Salle Blanche, Landanger, Laparo, Le Petit Vapoteur, Fondation Linda Norgrove, Livanova, Mecam 44, Medair, Médiplan, Medtronic, Mindray, Monaco Collectif Humanitaire, NM Medical, Novair, Paris Levallois Distribution, PDG System, Peters Surgical, Pharmavie, Philips Medical, Prodie Santé International NC, Proludic, Reedsmith, Roche Diagnostic, Sa Bretagne Oxycoupage, Scp Serge Denouault, Servier Mecenat, Siemens France, Smart Trade, Société Générale, Stelia Aerospace, Stryker, Technologie médicale, Teleflex, Telligo, TP Media, Vlad.

NGO platforms and coordination bodies of which La Chaîne de l'Espoir is a member

Association Française Ingénieurs Biomédicaux (AFIB), Coordination Humanitaire et Développement, Coordination Sud, F3E, Fédération internationale No Noma, France générosités, Groupe Enfance, Ingénieur Hospitalier Français (IHF), Jordan INGO Forum, La Voix de l'Enfant, Lebanon Humanitarian INGO Forum (LHIF), NGO Coordination Committee for Iraq NCCI, Voluntary Organizations in Cooperation in Emergencies (VOICE).

2021 ACTIVITY REPORT

Photo copyright

La Chaîne de l'Espoir

Bernard Matussièrè

Ismaël Diallo

NEL Architecture

Pascal Deloche / Godong

TV5Monde

Oriane Zerah

Translation

Anthony Rossiter

Editorial staff, design, layout and printing

La Chaîne de l'Espoir

Copyright

Any reproductions must receive prior written approval



**La chaîne
de l'espoir**

Together, let's save children

La Chaîne de l'Espoir
56, rue des Morillons
CS 17938
75730 Paris Cedex 15
01 44 12 66 66
www.chainedelespoir.org

