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At a time when new pandemics are developing and old pandemics are resurfacing, half of the population does not have access to essential drugs. In the world’s poorest countries, drugs are too often inexistent, of questionable quality as they are not properly controlled or fatal counterfeits. This is no longer tolerable. The Pierre Fabre Foundation was created to actively participate in correcting these imbalances by improving access to quality drugs and healthcare. It seeks to always offer better treatments and better cures to the most disadvantaged.

Pierre Fabre

Vocation

The Pierre Fabre Foundation acts selflessly and independently, with a strictly humanitarian goal. Its purpose is to allow the populations of less developed and developing countries, as well as populations plunged into severe crisis by political or economic upheaval or natural disaster, to access the quality and levels of healthcare, and more specifically commonly used drugs, defined, notably by the WHO, as essential for human health.

Mission

The Pierre Fabre Foundation was recognized as a public interest organisation on 6 April 1999. This status, which allows it to receive public subsidies, donations and bequests, means that its activities are monitored by State representatives who sit on its Board of Directors.

Status
“Inequality in access to healthcare is one of the main disparities between the North and the South which are increasingly unacceptable at a time of globalization of technology and science. Almost 20 years ago, this observation led to the creation of the Pierre Fabre Foundation by its Founding President.

A visionary and innovator, Mr Pierre Fabre then transferred ownership of the Pierre Fabre Group to the Foundation, allowing it to seal its independence while respecting its identity. While the Foundation guarantees the Group’s independence and promotes the humanitarian values of its founder, it does not interfere in its management.

The Group is controlled by the holding company Pierre Fabre Participations which in the by-laws was entrusted with the task of validating strategy, appointing managers and ensuring respect of the continuity mission which involves ensuring sustainability of the group’s main management principles.

Benefitting from sustainable means to fund its humanitarian activities, the Foundation is continuing its activities to support the world’s most disadvantaged populations by offering long-term support to local authorities and facilities, medical universities, health centres, and patient associations among others.

Now well established with healthcare actors in the countries where it works, the Foundation is also called upon in emergency situations, which are also part of its statutory mission. For example, this was how, in 2015, the Foundation joined forces with its historical partner in Lebanon, the Order of Malta, to fund the creation of a mobile medical unit in the Beqaa plain. This unit will be operational mid-2016 and provide healthcare and drugs to numerous Syrian refugees, among the 400,000 displaced persons living in this region.”
A shareholding Foundation

In addition to its own missions, the Foundation plays a decisive role in the legal and financial organization of the Pierre Fabre group. In 2008, Mr Pierre Fabre decided to donate the majority of his group’s shares to the Pierre Fabre Foundation. When he passed away, the Foundation became his sole legatee.

Since Mr Pierre Fabre’s death in July 2013, the Pierre Fabre Foundation has held 86% of Pierre Fabre SA’s capital. This donation of the majority of the company’s capital to the Foundation ensures the sustainability of the group while respecting its independence and values. It was officially accepted by the French state, a compulsory step for a Foundation recognised as a public interest organization.

While the Foundation holds the majority of the company’s capital, it does not directly involve itself in its operational management and gives priority to completing the missions set forth in its by-laws.

Board of Directors

The Pierre Fabre Foundation is governed by a Board of Directors which meets at least twice a year. It defines the broad lines of its action, validates strategic projects and ensures proper management. It is composed of 14 members, divided into 3 colleges.

Board of Founders

M. Pierre-Yves Revol
President of the Pierre Fabre Foundation

M. Jacques Fabre
Secretary of the Pierre Fabre Foundation

M. Jacques Godfrain
Treasurer of the Pierre Fabre Foundation and former Minister for Cooperation

Ms Huong Mangin
Companies General Manager

M. Francis Piquemal
Companies Administrator

M. Jean-Pierre Marcantoni
Doctor of Medicine specialised in cardiology
Management

The management team, under the leadership of the Director General, proposes programmes and actions to the Board of Directors and ensures the implementation, coordination and monitoring of the programmes.

- Ms Béatrice Garrette
  Director General
- Ms Véronique Teyssié
  Project Manager
- Ms Delphine Choquet
  Assistant
- Professor Jean Cros
  Scientific Advisor
- Ms Catherine de Rohan Chabot
  Head of communication
- M. Fabien Aubertie
  Administrative and Financial Manager
- Ms Émilie Lauressergues
  Research Officer

Scientific Committee

Composed of scientific figures, the Scientific Committee offers and provides an advisory opinion on the broad lines of its action and programmes.

- Professor Pierre Teillac
  President of the Pierre Fabre Foundation Scientific Committee
  Urological surgeon
  Director of the Institut Curie hospital from 2011 to 2014
- Professor Jean Cros
  Pharmacologist
- Professor Dapa Diallo
  Haematologist
  Director General of the CRLD of Bamako (Mali)
- Professor Marc Gentilini
  Doctor specialised in infectious and tropical diseases
  Professor Emeritus at the Pitié Salpêtre hospital, member of the Académie de Médecine which he presided in 2008, Founding President of the Organisation Panafriacaine de lutte pour la Santé (OPALs)
  President of the French Red Cross from 1997 to 2004
- Professor Gérard Lorette
  Dermatologist
  University Professor
  Head of the Tours University teaching hospital, member of the Molecular Virology and Immunology Research Team UMR 1282 INRA - Tours University
- Docteur Claire Rieux
  Haematologist at the Henri Mondor hospital, specialised in epidemiology and humanitarian medicine
- Professor Gil Tchernia
  Haematologist
  Honorary professor at the Faculty of Medicine, Paris Xi
- Docteur Bernard Vallat
  Veterinarian, Director General of the OIE (World Organisation for Animal Health)
- Professor Michel Vidal
  Pharmacochemist
  Head of the Anti-angiogenic Peptides and Peptidomimetics laboratory, UMR 8638 CNRS - Paris Descartes University
16 YEARS OF ACTION
working to improve healthcare

Combating inequalities in access to healthcare

The original idea to create the Pierre Fabre Foundation arose following Mr Pierre Fabre’s trip to Niger in the 1990s. His visionary project was fuelled by the indignation he felt upon discovering the scandal surrounding the trafficking of counterfeit drugs and vaccines which were ineffective or toxic. Since its creation in 1999, the Pierre Fabre Foundation has been working in the healthcare sector to combat inequalities in access to drugs and healthcare. It is active in Sub-Saharan Africa, Asia, the Middle East and the Caribbean.

Training drugs specialists

Initially, the Pierre Fabre Foundation sought first and foremost to provide access to quality drugs in Southern countries. Thus, since its creation, it has been working to train drugs specialists as a matter of priority. The increase in material means and enhancement of academic resources, in partnership with Northern faculties, is one of the stages in the process implemented to ensure increasing numbers of qualified students become competent pharmacists, likely to secure the drugs supply chain for and use of drugs in their respective countries. The Pierre Fabre Foundation also wants to encourage the emergence of the most talented individuals who will contribute to improving the academic quality of local universities and be involved in developing research which will benefit the priorities of Southern healthcare.

Developing access to quality healthcare

Access to drugs cannot be dissociated with access to healthcare. Therefore, from the outset, the Pierre Fabre Foundation has been working to help develop quality primary care for disadvantaged populations in isolated regions suffering from the absence of healthcare professionals and structures. It then targeted important and neglected diseases, thus its involvement in the fight against sickle cell disease and, more recently, in tropical skin diseases, which all represent a heavy burden for populations.

Ensuring a sustainable action

The objective of ensuring the sustainability of activities influences the actions the Pierre Fabre Foundation chooses to take and its operating methods. That is why it prioritises, on the one hand, training along with national universities and, on the other hand, supporting healthcare facilities and local organisations which have proved their effectiveness and knowledge of situation on the field. Nonetheless, the Pierre Fabre Foundation does not rule out responding to humanitarian emergencies, as was the case in 2015 with the reinforcement of help offered to the Order of Malta in Lebanon in terms of healthcare brought to the community of Syrian refugees.

Getting involved in research and advocacy

In the fight against sickle cell disease, the initial priority was, and remains, treating the populations. However, after ten years of action and a presence in eight countries, the Pierre Fabre Foundation is embarking on a new chapter by also getting involved in research in order to better understand the disease, develop collaborations between specialists and build a better case for international advocacy.

Promoting North-South dialogue

Going hand in hand with this ever-evolving scientific knowledge, the Foundation also sees itself as a theatre for exchange, sharing knowledge and observation. A real theatre, when, within its walls in En Doyse, an annual colloquium brings together an extensive network of actors and partners. A virtual theatre, when the Foundation, by creating an Observatory, embraces the extensive and encouraging progresses offered by e-health.
2015 was a year of consolidation and innovation for the Pierre Fabre Foundation. Consolidation and extension of the programmes training drugs specialists and fighting against sickle cell disease, two areas which perfectly meet the Foundation’s mission to ensure access to quality drugs and healthcare for the most disadvantaged populations, whether in Southeast Asia or in the African continent. Innovation with the development of a new area of intervention focused on dermatology in tropical areas and involvement in the development of e-health in the South.

Taking real and sustainable action requires a long-term commitment, working in close proximity with actors in the field. Consequently, the Pierre Fabre Foundation provides not only financial but also technical and scientific support, as well as guidance regarding project management. This approach characterized by sharing and dialogue has created strong ties between the people and the institutions and improved the expertise of all involved. This close collaboration allows the Foundation to listen to and meet the needs expressed. It also allows it to take the initiative to call on representatives and local expertise for a just cause. Thus, at the end of 2015, the Foundation launched a call for projects appealing to around thirty African organisations working with people living with albinism, whose vulnerability and the difficulty accessing healthcare, have resulted in a real skin cancer “epidemic” with a high mortality rate.

Another highlight of the past year was the launch of two multicentric studies in Africa, one intended to improve epidemiological knowledge of sickle cell disease and the other to test a remarkable innovation. The latter would make it possible to offer access to quick, low-cost screening for this disease, particularly suited to high-prevalence areas, provided that the treatment solutions are identified or implemented beforehand. Both of these studies rely on a North-South collaboration bringing together African medical and scientific teams who have been involved in the programmes supported by the Foundation for many years.

All of these developments are the fruit of the faithful support of local actors. They show the importance of improving the expertise of these actors in order to sustainably improve access to healthcare and drugs for the most disadvantaged populations, the heart of Pierre Fabre Foundation’s mission.”
THE FOUNDATION IN FIGURES

Activities in 2015

- TRAINING
- COMBATING SICKLE CELL DISEASE
- ENSURING ACCESS TO QUALITY HEALTHCARE
- TROPICAL DERMATOLOGY

PROGRAMMES IN THE WORLD

- LEBANON
- MALI
- SENEGAL
- BURKINA FASO
- CÔTE D’IVOIRE
- TOGO
- CAMEROON
- CONGO
- DEMOCRATIC REPUBLIC OF THE CONGO
- LAOS
- CAMBODIA
- HAITI

3 TRAINING PROGRAMMES in 5 countries

5 SICKLE CELL DISEASE PROGRAMMES in 8 countries

15 ACTIVE PROGRAMMES in 14 countries
THE FOUNDATION’S INVESTMENTS SINCE ITS CREATION

In its 16 years of action, the Foundation has invested 17.7 million euros in its mission which is recognised as being of public interest.

PER AREA OF INTERVENTION

- 36% Combating sickle cell disease
- 36% Training drugs specialists and ensuring access to quality drugs
- 22% Ensuring access to quality healthcare
- 0.5% Dermatology
- 5.5% E-health Other activities

PER COUNTRY

**COMBATING SICKLE CELL DISEASE AND ENSURING ACCESS TO HEALTHCARE**

- 1.6% Haiti
- 3.5% Other countries
- 4.5% Burkina Faso
- 6.3% Madagascar
- 12.7% Central Africa
- 19.5% Senegal
- 20.1% Lebanon
- 31.8% Mali

**TRAINING**

- 2% Guinea Conakry
- 3% Other countries
- 5% Madagascar
- 14% Togo
- 14% Laos
- 19% Asia (Transregional Master’s)
- 21% Cambodia
- 22% Benin
Renewal of the Mékong Pharma Master’s

In 2015, the second graduating class of pharmacists from the « Mékong Pharma Master’s » obtained their diplomas, bringing the total number of pharmacists trained by this programme to 42. An initial assessment of this innovative training programme convinced all partners (French and Asian academics) to renew their approval for a second agreement. A fourth year group of students was recruited in October 2015.

Supporting the training of midwives in Laos

In Laos, the Pierre Fabre Foundation has been supporting the Faculty of Pharmacy of the USSL (Laos University of Health Sciences) since 2005. It was also called upon to assist the recently-established national midwifery training college, within the Faculty of Nursing of the same university. In 2015, the Foundation made a commitment by signing a four-year agreement with the aim of supporting this school until it becomes independent, by allowing trainers to be trained and educational tools and internships in healthcare centres to be developed.

Practical work on galenics in Togo

Since its commitment to the Lomé University of Health Sciences, the Pierre Fabre Foundation has involved itself on several levels. It began by offering the material resources necessary for quality teaching by renovating the classrooms and rebuilding rooms for practical work. It also played a role in enhancing the content of the syllabi by involving African lecturers from the subregion as well as French lecturers. 2015 saw the implementation of a pilot initiative: the testing of practical work on galenics which began in June through the “mobile laboratory” belonging to Gilles Lemagnen, lecturer at the University of Bordeaux.

Inauguration of Cerpad

After two years of construction work, in December 2015, the Pierre Fabre Foundation had the pleasure of inaugurating the Cerpad (Research and outpatient care for sickle cell disease) within the Gaston-Berger University in Saint-Louis, Senegal. This establishment, which includes an analysis laboratory and day hospital for screened children, will allow an operational study to be launched in 2016 which will rely on the systematic screening of newborns in order to offer them suitable treatment.

Sickle cell disease: research and pooling

For the first time, the Pierre Fabre Foundation has directly embarked on research. It initiated and sponsored a multinational (in five countries) epidemiological study on the measurement of the impact of sickle cell disease on infant mortality in Sub-Saharan Africa. The Foundation is also the initiator and institutional sponsor of a validation study for a rapid diagnostic test (RDT). This study will take place in 2016 in three countries (Mali, Togo, DR Congo) and open radically new perspectives in terms of screening for the disease. Finally, in mid-June Cameroon became the third country to join the sickle cell disease management platform, which already included the Democratic Republic of the Congo and Madagascar.

Development of e-health

Since the beginning of 2015, the Pierre Fabre Foundation has been hosting a work group on e-health which led to the creation of an Observatory intended to be a tool for monitoring, collecting data and analysing e-health initiatives in Southern countries. This “E-health Observatory in Southern countries” seeks to identify and support the best solutions to the issue of access to healthcare. Moreover, the Foundation supports “EchOpen” a low-cost hand-held ultra-
sound stethoscope which could allow a quick diagnosis and give under-equipped areas access to ultrasound.

First results in teledermatology

In Mali, the teledermatology pilot project in three Malian regions is operational. The first results of teledermatology consultations in collaboration with the CNAM (National support centre for the fight against disease) demonstrated the efficacy of this system. The planned 18-month experimental period will end in October 2016 and allow a global assessment of the system with a view to its upscaling.

Emergency humanitarian aid in Lebanon

In Lebanon, where the Pierre Fabre Foundation has been present since its creation, the influx of Syrian refugees made an emergency response necessary. While continuing to support the Khaldieh health centre, the Foundation made an additional donation to the Kefraya centre to purchase drugs and decided to support the Order of Malta’s initiative in Lebanon to create a mobile medical unit in Béqaa, intended for consultations and dispensing drugs to refugees and the disadvantaged host population.

A theatre for exchange and reflection

On 2 October 2015, the Pierre Fabre Foundation brought together representatives from public and private bodies as well as regional decentralized cooperation actors for a one-day conference on “The role of regional authorities in healthcare in Southern countries”. By means of historic reminders, analyses and the presentation of concrete projects, this day allowed the one hundred or so participants present to better understand the way in which this cooperation is structured and to identify the measures taken and the results obtained.

Call for albinism projects

In the context of the development of its activities in the field of tropical skin diseases, the Pierre Fabre Foundation identified the challenge of managing people suffering from albinism in Africa, where prevalence of this condition is up to four times higher than in Europe. It identified all of the organisations acting in the field and issued a call for projects to them regarding “the prevention and early treatment of skin cancers in people living with albinism.”
Training has historically been the main area of intervention of the Pierre Fabre Foundation which, since its creation, has set itself the task of meeting the numerous and substantial pharmaceutical needs in Southern countries. The creation of a network of drugs specialists capable of making the entire drugs supply chain secure represents a crucial public health issue in these countries.

As drugs constitute an integral part of the health system, the Pierre Fabre Foundation adopted a holistic approach by implementing training programmes for students and trainers in Asia and Sub-Saharan Africa. These training activities rely on the creation of a francophone network coordinated by several actors, universities, foundations and NGOs in the context of public-private, North-South or subregional partnerships.

The Pierre Fabre Foundation is banking on long-term investment so that, from hospital pharmacies to private dispensing pharmacies and pharmacists to the most highly-qualified researchers, the entire pharmaceutical sector is developed, consolidated and becomes sustainable in the countries concerned.

Class at the Pnom Penh Faculty of Pharmacy, Cambodia
Overly expensive, counterfeit or unsuitable drugs, "street pharmacies", the absence of dispensing pharmacies outside large urban centres, problematic storage, lack of qualified human resources... In less developed countries, numerous problems are encountered at each stage in the drugs supply chain which, more globally, weaken public health as a whole.

Consequently, having taken note of this situation, since its creation, the Pierre Fabre Foundation has sought to meet needs by committing itself to training drugs specialists - a sector which has long been overlooked or played down by the countries concerned and international organisations.

The stakes of this investment are high as it involves offering support upstream and in the long-term. Thus, in conjunction with local authorities in the countries it identified and in the context of university or private partnerships, the Pierre Fabre Foundation provides gradual contributions. It provides material support by creating or rehabilitating infrastructures and teaching institutions. It offers educational and scientific support by improving teaching content and promoting qualified professionals of all levels, by coordinating a network of French and francophone university partners, and training trainers. Finally, the Foundation also provides financial support by allocating study and research grants.

**ACTIVITIES IN ASIA THEN IN AFRICA**

The Pierre Fabre Foundation started its first training activities in Cambodia in 2002, then in Laos in 2005. In 2012, Vietnam joined these two countries for the setting up of a regional Master’s programme: the « Mekong Pharma Master’s », a delocalized French training programme. Moreover, in 2005 and 2011, the Foundation took action in Madagascar and Togo to develop training for pharmacists in the Universities of Health Sciences in these two countries.

2015 allowed training activities provided in these geographic areas to be consolidated. Two significant examples should be pointed out in this respect.

The Pierre Fabre Foundation decided to continue its commitment in Asia by renewing its agreement with the six partner universities, which will allow three further year groups of students to obtain their Master’s.

**SUPPORTING RESEARCH**

The Foundation also supports a student from Togo with a degree in pharmacy and a Master’s, by allowing him to continue his PhD studies in France. It was also in Lomé that students benefited from the first practical work in Pharmaceutical Technologies (galenics).

By investing in training and making efforts to extend the network of drugs professionals in the countries of intervention, the Pierre Fabre Foundation is, now more than ever, working to make the pharmaceutical sector secure in Southern countries.
"The original approach adopted by the Pierre Fabre Foundation involves improving the training of healthcare professionals in the drugs sector, from basic teaching to a specialized level. Today more than ever, the Foundation is continuing its activities in this field in the most rational and pragmatic way possible and by banking on long-term investment.

This training is part of a global approach seeking to improve the healthcare system by integrating all knowledge of the drugs supply chain from their origin and manufacture until their correct use by the patient. In numerous Southern countries in particular, it is essential to ensure the security of this chain which is increasingly polluted by the mass arrival of counterfeit drugs. The pharmacist must play an important role in its improvement, thus the necessity of being aware of the entire process.

We implemented university partnerships not only to promote excellence of teaching, but also because we want the quality of the diplomas awarded to be internationally recognized. Training trainers has become a priority. We hope that, with the expertise they acquire, young graduates will meet to public health needs in their country and that they will be able to share their know-how with neighbouring countries.

Training healthcare personnel, as the Pierre Fabre Foundation perceives it and does, is a long and ongoing process. 2015 confirmed that, in its different areas of intervention, the Foundation prefers to build on, consolidate and prolong the progress made rather than extend its activities to new regions."
CONTINUATION OF THE PROGRAMME
Mékong Pharma Master’s

PROGRAMMES
CAMBODIA
LAOS
VIETNAM

CONTEXT
Administration was initiated in 2011 and the Mékong Pharma Master’s launched in 2012; it is designed for young pharmacy graduates who want to specialize. This transregional Master’s programme in Pharmaceutical Sciences is the fruit of an exemplary inter-university partnership involving 3 universities in Southeast Asia (Cambodia University of Health Sciences, Laos University of Health Sciences, Hanoi University of Pharmacy) as well as three French universities (Aix-Marseille, Paris Descartes, Toulouse III Paul Sabatier).

It is a two-year programme. The first year involves bringing the pharmacological and pharmacochemical basics of therapy up to standard over six to eight months of intensive classes during which French and Asian teachers alternate. At the end of this first year, the students are accepted depending on their results in the specialties proposed by the Mékong Pharma Master’s programme (Master 2): Pharmaceutical Quality Assurance and Control, Pharmacokinetics or Drugs and Public Health. The students receive four months of teaching before completing a 6-month internship in Asia or France.

The Master 2 in Drugs and Public Health (Toulouse III Paul Sabatier University) classes took place at the Cambodia University of Health Sciences. The Pharmaceutical Quality Assurance and Control specialization teaching (from Paris Descartes University) was delivered for the third consecutive year in the Hanoi University of Pharmacy.

The Master 2 in Drugs and Public Health (Toulouse III Paul Sabatier University) classes took place at the Cambodia University of Health Sciences. The Pharmaceutical Quality Assurance and Control specialization teaching (from Paris Descartes University) was delivered for the third consecutive year in the Hanoi University of Pharmacy.

“Today, as a “supervisor” in the Pharma Product Manufacturing quality assurance department, I have been asked to use my quality system knowledge to coordinate and develop quality assurance tools (procedures, checklists, information support etc.), propose and manage quality improvement projects or implement supplier or subcontractor quality audits for raw materials. The training that I received is directly useful for me.”

Sean Sreybandith, Cambodia, graduate from the Pharmaceutical Quality Assurance and Control Master’s programme
PROGRESS IN 2015

The hopes pinned on the Mékong Pharma Master’s were proved to be justified by a high-quality group of graduates. From the 12 students who graduated in 2015, 3 obtained a mention bien (merit) and 4 a mention très bien (distinction). Two French students also completed the Master 2 Drugs and Public Health: rather than attending classes in Toulouse, they travelled to Pnom Penh to take classes along with the Asian students.

2015 was also a year of reflection and analysis for the Pierre Fabre Foundation. As the first agreement implemented was arriving at its term, activities were assessed with the aim of ensuring the continuation of the project with the various shareholding partners.

PROSPECTS

Since the launch of the Mékong Pharma Master’s, a solid network of healthcare professionals has gradually been created, with each year group graduation. It is composed of lecturers, students and healthcare professionals. The Pierre Fabre Foundation insists on the organization of internships in Asia so that the students are directly confronted with the context and future conditions of their work. Moreover, those students to whom the Foundation offers support to allow them to travel to France for a Master 2 in research play an active role in their host laboratories. Finally, a number of students continue their PhD studies in France with the Foundation’s support.

Since the Master’s was launched, around sixty professionals have been trained or are still being trained. 99% of the graduates found a job in the sector that interested them.

“This programme allowed me to acquire a lot of knowledge, but also to make scientific friendships with students of other nationalities. I now teach pharmacokinetics, a subject that I learned during the programme. I wanted to become a teacher and work in the Faculty because I like to share my knowledge with others. I had the chance to take the Master 2 Pharmacokinetic research for a year. The classes were difficult, but this allowed me to surpass myself.”

Noy Phoutsathaphone, Laotian, graduated in 2014. Now a teacher in the Vientiane Faculty of Pharmacy.

Analytical chemistry laboratory, Faculty of Pharmacy, Vientiane, Laos
SUPPORTING the faculty of pharmacy of the University of Health Sciences

CONTEXT

The Vientiane Faculty of Pharmacy of the Laos University of Health Sciences (USSL) is involved in the transregional Mekong Pharma Master’s and therefore benefits from university exchanges which help to modernize teaching.

PROGRESS IN 2015

In addition to the collaborations planned within the Mekong Pharma programme, specific support was given to this Faculty in 2015, in terms of university guidance, technical equipment and scientific contributions. Three young lecturers benefited from PhD grants: one is completing training at the Khon Kaen University in Thailand and the other two in France.

In terms of equipment, a high-performance UV-visible spectrophotometer was given to the Faculty for the students’ practical training. It is a technically simple basic piece of equipment to be used to teach students initial simple dosage and control methods. It will be possible for students to use this instrument during practical work as soon as it is installed at the start of 2016. A number of mission staff members also helped to renew teaching (galenics, analytical chemistry, drug monitoring). Finally, scientific books were given to the library.

“Several lecturers from French universities will teach classes in this Faculty or offer their help on specific career matters and internship or PhD training placements. Engineers help with the installation of new equipment. In addition to teaching, my role is to monitor PhD training and the students studying for the Mekong Pharma Master’s. The Vientiane Faculty suffers from a lack of scientific instruments which would notably improve practical teaching. Consequently, since the start of the Foundation’s support, resources have been purchased. Our global commitment to the Laos Faculty of Pharmacy should grow in coming years due to the implementation of an action plan providing for even more teaching support. It is very rewarding to help intelligent and willing young people as we know that these young graduates will help their country to progress whether they work in the university or in public or private health-related bodies.”

INTERVIEW

Prof. Françoise Nepveu
Lecturer in analytical chemistry at the Toulouse III - Paul Sabatier University

“Several lecturers from French universities will teach classes in this Faculty or offer their help on specific career matters and internship or PhD training placements. Engineers help with the installation of new equipment. In addition to teaching, my role is to monitor PhD training and the students studying for the Mekong Pharma Master’s. The Vientiane Faculty suffers from a lack of scientific instruments which would notably improve practical teaching. Consequently, since the start of the Foundation’s support, resources have been purchased. Our global commitment to the Laos Faculty of Pharmacy should grow in coming years due to the implementation of an action plan providing for even more teaching support. It is very rewarding to help intelligent and willing young people as we know that these young graduates will help their country to progress whether they work in the university or in public or private health-related bodies.”

9
Laotian students have enrolled in the Mekong Pharma programme since its creation

3
young Laotian graduates are now teachers

2
PhD grants awarded

“I am in my first year of a PhD in the Inserm laboratory in Angers, under the supervision of Prof. Marie-Claire Venier. The teaching in France, unlike in Laos, makes it possible to practice and experiment a lot.”

Ting Herr, Laotian PhD student, Pierre Fabre Foundation grant recipient
CONTEXT
Laos has one of the highest maternal mortality rates in Southeast Asia, with 357 deaths for every 100,000 births. However, until 2011, no state midwifery diploma existed in Laos. Nurses and matrons cared for and managed the labour of parturients.
As part of the United Nations’ Millennium Development Goals, in recent years Laos has developed programmes seeking to improve the healthcare offered to expectant mothers and newborns. In this context, the Pierre Fabre Foundation supports the first and only Laotian national midwifery training college.
Contacted at the start of 2015 by the organization Lao Anakhod, the Pierre Fabre Foundation implemented an action plan to help the school operate independently in the medium-term. The studies are intended for post-secondary school students looking for initial training.

PROGRESS IN 2015
The Pierre Fabre Foundation now supports the Laos national midwifery training college’s bachelor’s programme, i.e. a four-year training programme inspired by the French syllabus. This programme covers several areas:
• Training of trainers: the Pierre Fabre Foundation will finance the creation of new Master’s for lecturers;
• Practical internships: so that the students can be in the field, not only in Laos but in surrounding countries;
• Exchanges between Laotian and Thai lecturers, in particular the translation of course materials into Lao (as all midwifery books are currently only available in Thai or English).

PROSPECTS
The Pierre Fabre Foundation’s ambition is to develop South-South cooperation by calling on national and subregional expertise, in particular that of Thai universities whose standards and quality are widely recognized.
“Up until 2015 we suffered from a severe lack of pharmacists in hospitals and public health centres in Madagascar. Today, we are pleased with the significant progress that has been made: orders for drugs are now better managed and the distribution channels better organized in hospitals and the various health centres. Supply is progressing while the unavailability of certain products is decreasing. We can note an improvement in the quality of the drugs dispensed, a positive by-product of the significant number of professionals trained, present on the ground.”

The training of pharmacists in Madagascar started in 2005 at Antananarivo University with the opening of a pharmacy department in the Faculty of Medicine. The Pierre Fabre Foundation worked on its creation alongside local partners¹, the Mérieux Foundation and the Faculty of Pharmacy of the Grenoble Alpes University (Prof. R. Grillot, Prof. P. Trouiller). Up until then, Madagascan students who wanted to study pharmacy had to travel abroad, most often to France, but very few of them returned home afterwards... Consequently, aside from the dispensing pharmacies in major cities, the public sector in Madagascar is characterized by a serious lack of qualified pharmacists. The creation of this training programme therefore seeks to make studies in pharmacy accessible to all students, to mitigate human capital flight, in the medium-term, and as a priority to meet the need for pharmacists in public health centres on a national level.

PROGRESS IN 2015
The training is designed to be selective in order to ensure high standards. Each year, 100 to 125 people are chosen to enter the course, then 25% of students are admitted into the second year following a competitive exam. With the first four graduating classes of qualified pharmacists and the recruitment of young qualified pharmacists, the national situation has significantly improved and is gradually helping to professionalise and secure the entire drugs supply chain in the hospital sector. An advantage to highlight: since the creation of this training programme, 18 new pharmacist positions have been created by the Ministry of Public Health. Since last year, the Foundation has been supporting an annual educational mission in galenic pharmacy (Prof. S. Sfar- Faculty of Pharmacy, Monastir, Tunisia). Moreover, two Madagascan pharmacy graduates have benefited from the Foundation's support to study for a PhD. In September 2015, one of them defended a thesis in pharmacochemistry, after three years of research spent mainly at the Toulouse III University under the supervision of Prof. F. Nepveu, in concert with Prof. V. Vestalys (Antananarivo University).

PROSPECTS
At the end of 2016, the second PhD student will present her work, completed under the supervision of Prof. P. Bartolucci (Paris-Est Creteil University). Finally, in addition to increasing the number of the lecturers, one of Antananarivo University’s projects is to concentrate on the construction of infrastructure, specifically dedicated to the pharmacy department, in order to put an end to the scattering of teaching throughout the city of Antananarivo and thereby increase efficacy and independence.

¹ Ministry of Public Health, Faculty of Sciences, Centre National d’Application et de la Recherche Pharmaceutique, Institut Malgache de Recherche Appliquée, Ordre National des Pharmaciers de Madagascar, SCAC of the French Embassy.
**CONTEXT**

Since 2011, a partnership has united the Pierre Fabre Foundation and the Faculty of Health Sciences at Lomé University (which groups together medicine and pharmacy), with the goal of improving the quality of training given to the pharmacists.

In the context of a lack of human resources, the general aim is to increase the quantity and quality of Togo pharmacists, key elements in the country’s overall healthcare system.

On a material level, the Pierre Fabre Foundation has invested large amounts in renovating and equipping part of the Faculty’s premises. Rooms now allow practical work to be carried out in several disciplines such as galenics, pharmacology, synthesis and analytical chemistry and shortly toxicology.

On an educational level, the priority areas in the context of the partnership have been: updating the study syllabus, training trainers and supporting research by guiding young Togo lecturer-researchers.

The syllabus update is becoming a reality through educational seminars in conjunction with local and African lecturers working in the sector in close collaboration with French universities and the Foundation’s team. The syllabus is devised as part of the ECOWAS (Economic Community of West African States) harmonized programme. Training the trainers has been an essential element. While for core subjects, the lecturers are Togolese from the Faculty of Science and Medicine, for purely pharmaceutical subjects (galenics, pharmacology, toxicology, analytical chemistry), the lecturers mainly come from foreign subregional countries: Senegal, Benin, Burkina Faso.

The Pierre Fabre Foundation supports students by allocating grants to allow them to study for a PhD after the six years of the pharmacy course.

**PROGRESS IN 2015**

On a material level, 2015 saw the completion of construction of the scientific library and the installation of the first batch of pharmacy books. The rooms dedicated to practical work were also finished off.

On an educational level, practical teaching on pharmacology was given via computer (Dr. A. Valette – University of Toulouse).

A teaching mission allowed students to benefit from toxicology classes (Prof. E. Creppy – Bordeaux University).

In galenics, students in their 4th and 5th year of pharmacy studies were also able to take innovative practical teaching classes based on unique materials conceived by Dr Gilles Lemagnen (Bordeaux University).

In terms of training and research support, a Master 2 grant and a PhD grant were allocated to two young Togolese pharmacists.

**PROSPECTS**

A seminar, organized in Lomé with the participation of African and French universities involved in the pharmaceutical course at the Faculty of Health Sciences, should bode well for the upcoming renewal of the agreement. This agreement should allow new areas for investment to be defined such as the implementation of practical teaching in toxicology, the possible creation of a “hospital pharmacy and public health” option or continuous training for pharmacists throughout their career.

“On a scientific level, I benefit from better working conditions, with co-management of research by the Bordeaux and Lomé Universities. In Togo, there is a shortage of professionals with my profile, who really have something to offer by participating in the development of new pharmaceutical forms as well as the improvement of local traditional drugs. I owe it to myself to be ambitious.”

Koffi Kowouvi, pharmacist and PhD student in galenics
Serious, little known and overlooked, sickle cell disease is a widespread genetic disease in the world and particularly in Africa. In 1994, the WHO estimated that 120 million individuals carry the sickle cell gene mutation, including numerous children who die before the age of five, even though screening and proper healthcare could save them.

This dramatic situation drove the Pierre Fabre Foundation to make combating sickle cell disease one of its main commitments. Its solutions? Anticipate, inform and treat by creating or support facilities specifically dedicated to screening, consultation and monitoring patients with sickle cell disease.

The Pierre Fabre Foundation began its activities in 2006. They are now split into five programmes in eight countries: in Africa in Burkina Faso, Cameroon, Congo, Mali, Senegal, the Democratic Republic of the Congo and Madagascar and in the Caribbean in Haiti. The experience acquired over ten years and the success of its work has led the Foundation to consolidate and develop its areas of intervention, and extend its efforts to scientific research.
Too much silence and ignorance still surround sickle cell disease. Although it was identified and scientifically described as early as the start of the 20th century, this serious and chronic blood disease is rarely one of the healthcare priorities in the countries it affects. However, according to the World Health Organization, “almost 5% of the global population carry the genes characteristic of haemoglobinopathies, which mainly include sickle cell disease and thalassemia, and prevalence of the disease can affect one in thirty births on the African continent. Sickle cell disease therefore has the tragic status of the most common genetic disease in the world.

**What is sickle cell disease?**

Sickle cell disease is a genetic disease affecting the haemoglobin, a substance contained in red blood cells, which transports oxygen throughout the body. The disease presents as anaemia (tiredness, dizziness, breathlessness etc.), proneness to infections, painful episodes due to poor blood circulation and lack of oxygenation of the tissues (in particular the bones). Symptoms can vary significantly from one person to another and from one time to another (INSERM).

1• IRD, press release June 2015

**A DRAMATIC OVERVIEW**

Initially arising in malarious regions in the African continent, sickle cell disease is caused by a mutation of one of the haemoglobin genes that has long-existed in humans. It also affects people in the United States, the Caribbean, Brazil and Mediterranean Europe, due to historic migrations both in the past and present. It is in Africa, however, that the greatest number of individuals suffer from the disease (85% of cases and 275,000 births per year¹) and that it has the most dramatic consequences due to a shortage of trained professionals and suitable and accessible treatments, both geographically and financially. The demographic explosion in the African continent suggests that the number of people suffering from sickle cell disease will unrelentingly increase...

**MALI**

Creation and start of construction of the CRLD (Research centre to combat sickle cell disease)

**MALI**

Opening of the CRLD in Bamako

**CENTRAL AFRICAN REPUBLIC**

Enhancement of the treatment of sickle cell disease at the paediatric centre in Bangui

**MADAGASCAR**

Support offered to the programme implemented by the organization Lutte contre la Drépanocytose (LCDM - Organisation for the fight against sickle cell disease)
“For me, sickle cell disease remains an orphan disease presenting major challenges, despite the great international advocacy of the combat and solidarity. Sickle cell disease is still a disease that we talk about on World Sickle Cell Day on 19 June, but very few countries can actually pride themselves on having a real programme to combat sickle cell disease and even fewer countries dedicate a substantial budget to easing the suffering of patients and their families. And yet, there are more than 200,000 new cases each year in Sub-Saharan Africa! Nonetheless, progress has been made.

I notably praise the efforts made in Mali over the past ten years. This country is now home to an international centre, unparalleled in the African continent, which is the fruit of North/South solidarity and the determination of a number of actors. Six years ago, we set up a sickle cell disease research network in Central Africa (REDAC). Moreover, the multinational activities that we carry out, partly by means of the Pierre Fabre Foundation’s support, include screening and monitoring sufferers. The platform also enables exchanges between scientists from the subregion.

However, there are still major challenges ahead. Raising awareness of the disease, through an extensive campaign to educate the general public launched by the authorities and relayed by public and private media in the countries concerned, is in my opinion essential, and well before financial aid. The other challenge is setting up systematic, early and subsidized screening for all. Finally, in terms of follow-up, the detection and prevention of severe complications of sickle cell disease such as strokes require use of a suitable device called a transcranial Doppler. Thanks to the Foundation, we now have this equipment in Mali and the Democratic Republic of the Congo, but I know that very few countries are in the same boat.

There is still much to be done. Sickle cell disease is a disease that results in exclusion; it is important that attitudes towards it are changed as it concerns society as a whole.

The programme in the Democratic Republic of the Congo has now been running for ten years and people suffering from sickle cell disease are no longer as stigmatized as they were in the past, if for no other reason than because we see them speaking in the media. But in schools, teachers should be informed to allow them to better understand the disease. In the Democratic Republic of the Congo, a ministerial decree now allows children suffering from sickle cell disease to make up for their absences, bring their flask to class and leave whenever they need to relieve themselves. All of these measures help to destigmatize sickle cell disease.”

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2 • Training and healthcare support centre
3 • Support, training and monitoring platform for sickle cell disease
This general situation drove the Pierre Fabre Foundation to make an innovative commitment in the fight against sickle cell disease.

PREVENTING, TREATING, TRAINING, INFORMING

As early as 2006, and based on its logic of partnerships with local initiatives, the Foundation supported the creation and development in Mali of a public establishment for scientific and technological purposes: the CRLD (Research centre to combat sickle cell disease) in Bamako. The opening of this reference centre in 2010 came at just the right time. Sickle cell disease had been recognized as a public health priority in Mali in 2005. In Mali, estimations show that sickle cell trait prevalence ranges from 4 to 15% depending on the regions, there are between 5,000 and 6,000 births of affected babies per year and a high mortality rate among sickle cell disease sufferers who do not have access to specific treatments, with 50% of deaths in patients under 5. The CRLD has been able to curb this dramatic situation over the past ten years. Preventative medicine, access to quality healthcare and treatment of complications are at the heart of the facility’s approach. Upstream from this important work, the CRLD is also seeking to educate, inform and raise awareness of the disease, in particular by training healthcare personnel, notably through the CRLD is also seeking to measure the impact of sickle cell disease on infant mortality in Sub-Saharan Africa. This research will provide an initial set of answers to the crucial lack of epidemiological data on the disease (see interview on next page).

The Pierre Fabre Foundation launched a second project due to the current development of rapid diagnostic tests (or RDT). These tests are likely to change the very way we perceive sickle cell disease. Consequently, the Foundation launched a study to validate these RDTs in three African countries (Mali, DR Congo, Togo) in collaboration with the Mérieux Foundation and Inserm Toulouse.

RESEARCH, A NEW AREA OF INTERVENTION

After making patients a priority by creating sites dedicated to the disease and supporting the development of expertise for professionals, the Pierre Fabre Foundation is now extending its commitment to combating sickle cell disease to scientific research. Two projects have been launched in this respect.

The Pierre Fabre Foundation entrusted a team of French scientists (Prof. Xavier Jouven and Prof. Brigitte Ranque Unité Inserm 970 at the Centre of Cardiovascular Research, Georges Pompidou European Hospital in Paris) with research seeking to measure the impact of sickle cell disease.

DEVELOPING ADVOCACY

Through its various national and cross-disciplinary programmes, and due to its involvement in research, the Pierre Fabre Foundation has confirmed its commitment to combating sickle cell disease. The advancement of knowledge leads to better support for sufferers and the acquisition of new expertise by healthcare personnel. Knowledge gleaned from research also makes it possible to support and develop international advocacy in order to mobilise greater means in the fight against the disease.

A COMMITMENT IN 8 COUNTRIES

Over the years, the Pierre Fabre Foundation has been working in the Central African Republic and Democratic Republic of the Congo (2011), then in Madagascar (2012), Senegal (2013), Congo, Burkina, Faso and Haiti (2014) and Cameroon, (2015). Its efforts are now split between 8 countries and 5 programmes with a focus on screening, the implementation of healthcare protocols, training healthcare personnel and raising awareness.

In each country, and in collaboration with its various partners, the Pierre Fabre Foundation adopts a progressive and pragmatic approach in order to ensure the development and sustainability of its activities.

It also counts on pooling experiences. The CRLD in Bamako is a model in this respect: a place for regular follow-up and welcoming sufferers in emergency situations, it is also a subregional training centre for African healthcare professionals. In Burkina, the CID (Comité d’initiative contre la drépanocytose – Initiative committee against sickle cell disease) is also very dynamic. In Central Africa and the Indian Ocean, the multinational platform grouping together Congo, the Democratic Republic of the Congo, Cameroon and Madagascar, in turn proves its efficacy: the treatment protocols are managed there and applied in the various countries involved.

How can sickle cell disease be treated?

Treatment of sickle cell disease involves preventing complications and managing painful episodes. It therefore includes: screening of newborns in order to implement medical procedures and educational therapy sessions with parents. The prevention of infections by administrating penicillin together with a pneumococcal vaccine. An adapted antalgic treatment. Blood transfusions to treat aplastic anaemia, prevent strokes or in life-threatening emergency situations. Treatment with hydroxyurea to decrease the risk of stroke, ACS (Acute Chest Syndrome), especially if the implementation of chronic transfusions is difficult (as is the case in Africa).
**Why have early screening?**

The first symptoms of sickle cell disease present in newborns from as early as three to four months. However, very often the disease is diagnosed following a serious episode which reveals the disease. It can induce illnesses such as necrosis of the hip, anaemia, infection, liver problems etc. The clinical signs are irreversible and lead to life-long treatments which are much more difficult than the basic treatment of sickle cell disease (antibiotics, penicillin etc.). Early screening is necessary to ensure effective treatment, prevent vaso-occlusive crises and better manage complications in order to sustainably improve the general condition of young sufferers.

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**INTERVIEW**

Prof. Brigitte Ranque
Inserm, Research unit into vasculopathy in sickle cell disease

The Foundation launches an epidemiological study into sickle cell disease and infant mortality

"Up until now, due to the lack of screening for sickle cell disease at birth and premature mortality which in all likelihood is relatively high in African countries, we do not know how many people really suffer from sickle cell disease and how many die from it in Africa. We believe that infant mortality due to this disease is high and that most sufferers die before the age of five, but this has never been confirmed by an epidemiological study in the general population. We therefore suggested doing things a little differently to estimate how many deaths of children under 5 are due to sickle cell disease.

We chose the method of "oral autopsy": we ask mums, who we know have at least one child with sickle cell disease, if they have children who have died, how many and at what age. The laws of genetics allow us to know that when two parents carry a sickle cell gene, on average 1 in 4 of their children will be a sufferer. We can therefore determine by a statistical calculation that for mums with a child born with sickle cell disease, one in four of her children will be a sufferer. Obviously, this is never exactly the case for a family but it is true, on average, for the general population. We then compare the answers of mums who have a child with sickle cell disease and those of mums who do not have children with sickle cell disease (we check that they are not carriers of the sickle cell disease gene), by asking them the same questions. Using statistical calculations we will then see if there are differences between the population of non-carrier mums and the population of mums with at least one child with sickle cell disease (and therefore potentially 1 in 4 of their children are sufferers) and we will come to a good estimation of mortality caused by sickle cell disease in children.

It is not the real cause of death that is of interest but knowing how many children have died and at what age. We will statistically see the weight of sickle cell disease in infant mortality in these countries. This involves going into waiting rooms and questioning mums of children with sickle cell disease, then suggesting they give us the name of one of their sisters or female cousins to allow us to question them in turn and compare women belonging to similar socio-economic backgrounds (the socio-economic background has indeed a great influence over mortality). We will nonetheless ask all of these women specific questions on their socio-economic level, even if mortality is higher in one group or another, to check that it is not because we chose women who are more economically disadvantaged.

The objective is to make public authorities aware of the weight of sickle cell disease in infant mortality, a major public health issue in all African countries."
The CRLD in Bamako continues its development

CONTEXT

The Pierre Fabre Foundation’s activities in Mali date back to 2006. They started alongside Prof. Dapa Diallo, head of the haematology department at the Point G hospital in Bamako, who told the Foundation about his desire to create a centre dedicated to sickle cell disease in his country. Under his leadership and in the context of a public-private partnership binding the Malian government, the Pierre Fabre Foundation, French ministry of Foreign Affairs and several other partners and backers, the CRLD opened its doors in 2010. Since then, this reference medical centre’s ambitious programme has included screening for the disease, patient consultations, follow-up and visits in day hospitals, informing the public, training healthcare personnel and setting up clinical research works. In Mali and more widely in West Africa, the CRLD in Bamako has become a symbol of a voluntary method which places patients at the centre of concerns and focusses on equal access to healthcare.

PROGRESS IN 2015

2015 saw the expansion of the work carried out by the CRLD. The higher frequentation figures at each stage of the treatment protocols confirm more than ever the usefulness of this Centre in the Malian medical landscape. Thus, the number of patients, which exceeded 5,000 in 2014, increased to more than 6,000 in 2015. The number of consultations increased from 9,916 in 2014 to 10,922.

In addition to this quantitative progress, 2015 was also marked by the construction and completion of a new treatment unit, delocalized within the Fouseyni N’Daou hospital in Kayes. Situated a little more than 600 kilometres from Bamako, this medical centre, although more modest than the CRLD, is nonetheless of great importance. Firstly, because it will avoid populations in the Kayes region from having to travel distances which can sometimes be fatal, in emergency situations. Then, because this alternative will relieve the Bamako services which are finding it difficult to provide regular follow-up consultations (4 per year for children, 3 per year for adults) and the treatment of episodes.

On a technical level, the facility in Kayes now counts 10 beds (4 adult beds and 6 children’s beds). The equipment arrived at the end of 2015. It was estimated that the Kayes medical centre would have a frequentation of 70 patients in the first year, then 180 in the second year and up to 270 in the third year.

On a medical level, the Bamako teams are responsible for training the personnel from the Kayes unit, based on a transfer of expertise. The CRLD can pride itself on its experience on a subregional scale.
PROSPECTS

All of the medical personnel seconded to the sickle cell disease treatment unit in Kayes will be trained in 2016. Treatments should continue to be decentralized due to the training of doctors all over the country. The implementation of a research database is also being contemplated. Moreover, the CRLD is involved, alongside the Pierre Fabre Foundation, in two studies that it supports, one on epidemiology and the other on the reliability of a new RDT (Rapid diagnostic test) for screening. This study will take place in 2016 in three countries – Mali, Togo, the Democratic Republic of the Congo – and may open new doors in terms of screening for sickle cell disease.

INTERVIEW

Prof. Dapa Diallo
Haematologist, general director of the CRLD

“Kayes is one of the regions where sickle cell disease is the most common disease; according to studies which are already dated, average prevalence of the sickle cell trait is 15% and 2.4% of the sickle cell disease sufferers recorded by the Reference Centre in Bamako come from Kayes. With the new Centre in Kayes, we will be able to treat patients closer to home and be closer to the many sufferers who live more than 600 km from Bamako. We decided to build Mali’s first unit for sickle cell disease treatment in Kayes given that access to the CRLD was difficult due to distance. The Pierre Fabre Foundation provided the facility with all of its equipment, allowing it to ensure optimal treatment of the complications of sickle cell disease and patient follow-up. In the course of 2016, it will be run by a medical team composed of a paediatrician, a GP and medical technicians, along with the biology team from the Fousseyni Daou hospital in Kayes, which houses the facility.

The current situation in Mali in terms of sickle cell disease makes this decentralisation of treatment necessary, in the medium-term, in all regions with a high prevalence of the disease, like Kayes. In order to fulfil this objective, resources will be required, which the State is incapable of providing due to other healthcare priorities. External funding will therefore be necessary and I would like to take the opportunity to thank the Pierre Fabre Foundation for its renewed commitment to the Malian State, which led it, after the construction of the reference Centre in Bamako, to invest in the completion of this Unit in Kayes. Since the creation of the CRLD in Bamako, our achievements and this new achievement in Kayes demonstrate that our knowledge of the disease is progressing as is our fight against it."
analysis of samples collected during neonatal screening at the maternity ward of the Saint Camille hospital.

PROGRESS IN 2015

Systematic neonatal screening started in May 2015 in two maternity units in Ouagadougou: the Saint Camille hospital and Schiphra medical centre. By the end of 2015, more than 1,000 screening tests had been carried out and 13 cases of sickle cell disease in children detected.

An information and awareness-raising centre for the public was opened in the spring in premises made available by the Ouagadougou Council with equipment funded by the Foundation. This centre now allows the CID to develop its activities promoting prevention, awareness-raising and informing families in a site dedicated to exchange and sharing, where people aware of the issues surrounding sickle cell disease can easily meet.

Finally, an orthopaedic surgery unit was also funded by the Pierre Fabre Foundation; numerous patients suffering from sickle cell disease develop necroses of the hips and need prostheses.

The Foundation funded the fitting out of an orthopaedic operating theatre designed for bone surgery. The medical missions were carried out by surgeons from the Monaco Red Cross in the Saint-Camille hospital.

PROSPECTS

The challenge is to extend screening to all births in listed hospital centres then to other facilities in Ouagadougou. The Pierre Fabre Foundation and CID/B are also reflecting on the delocalised development of treatment in Bobo Dioulasso, the second largest city in the centre of the country.

Finally, the Pierre Fabre Foundation appointed the NGO Douleurs Sans Frontières to start, in 2016, training to treat sickle cell disease for healthcare personnel in Ouagadougou and Bobo Dioulasso. The Pierre Fabre Foundation and CID/Burkina Faso work in partnership with 4 partner hospitals (3 in Ouagadougou and 1 in Bobo Dioulasso) and 120 healthcare personnel trained (doctors, nurses, pharmacists, paediatricians and anaesthetists).
CONTEXT

The sickle cell disease prevalence rates in Senegal (prevalence of the sickle cell trait: 11% - prevalence of sickle cell disease: 0.5%) are no less worrying than in the other countries of the West African region. And, unfortunately, for numerous sufferers and healthcare personnel, sickle cell disease remains little known. Since October 2010, a Health Sciences training and research unit (UFR) opened in the Gaston Berger University (UGB) in Saint-Louis, North Senegal, which is designed to train doctors. This UFR focusses its research activities as a priority on chronic diseases, including sickle cell disease.

In 2013, called upon by Prof. Ibrahima Diagne, paediatrician and sickle cell disease advisor to the Senegal Ministry of Health, the Pierre Fabre Foundation signed a partnership agreement with the Saint Louis UGB for a period of 6 years, for the implementation of an operational study combining research (systematic neonatal screening) and treatment (early treatment of children with sickle cell disease). This study, based notably on the analysis of epidemiological, clinical and socio-anthropological data, relies heavily on collaboration with the research teams of other departments of the UGB (applied sciences and technology, sociology and anthropology). It seeks to measure the beneficial effects of the screening and early treatment of newborns.

In order to carry out the study, it was necessary to build a mobile treatment unit for children diagnosed with sickle cell disease and an adjoining laboratory, the CERPAD (Mobile sickle cell disease research and treatment centre).

PROGRESS IN 2015

After two years of work, 2015 saw the completion of the construction of the CERPAD. The centre was officially inaugurated on 10 December. In parallel to this construction, information intended for pregnant women who are to give birth in these two facilities was drawn up. Women from villages and towns surrounding Saint Louis benefit from the follow-up of midwives trained in raising awareness. It was these midwives who were able to explain to the mothers using brochures that a sample would be taken from the baby during labour to screen for sickle cell disease.

The operational study is based on screening in two healthcare facilities: the Saint-Louis hospital and the main health centre in Saint-Louis on the basis of 6,000 births per year.

PROSPECTS

Managed by Prof. Ibrahima Diagne, the study aims, in the long-term, to submit an innovative model to the Senegalese health authorities so that systematic neonatal screening for sickle cell disease is implemented in Senegal. 2016 should also see the continued training of healthcare personnel and the effective start of screening.

ACTIVITIES

OPENING OF THE CERPAD
A centre dedicated to research and sufferers

SENEGAL

CONTEXT

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PROGRESS IN 2015

After two years of work, 2015 saw the completion of the construction of the CERPAD. The centre was officially inaugurated on 10 December. In parallel to this construction, information intended for pregnant women who are to give birth in these two facilities was drawn up. Women from villages and towns surrounding Saint Louis benefit from the follow-up of midwives trained in raising awareness. It was these midwives who were able to explain to the mothers using brochures that a sample would be taken from the baby during labour to screen for sickle cell disease.

The operational study is based on screening in two healthcare facilities: the Saint-Louis hospital and the main health centre in Saint-Louis on the basis of 6,000 births per year.

PROSPECTS

Managed by Prof. Ibrahima Diagne, the study aims, in the long-term, to submit an innovative model to the Senegalese health authorities so that systematic neonatal screening for sickle cell disease is implemented in Senegal. 2016 should also see the continued training of healthcare personnel and the effective start of screening.

ACTIVITIES

OPENING OF THE CERPAD
A centre dedicated to research and sufferers

SENEGAL

CONTEXT

The sickle cell disease prevalence rates in Senegal (prevalence of the sickle cell trait: 11% - prevalence of sickle cell disease: 0.5%) are no less worrying than in the other countries of the West African region. And, unfortunately, for numerous sufferers and healthcare personnel, sickle cell disease remains little known. Since October 2010, a Health Sciences training and research unit (UFR) opened in the Gaston Berger University (UGB) in Saint-Louis, North Senegal, which is designed to train doctors. This UFR focusses its research activities as a priority on chronic diseases, including sickle cell disease.

In 2013, called upon by Prof. Ibrahima Diagne, paediatrician and sickle cell disease advisor to the Senegal Ministry of Health, the Pierre Fabre Foundation signed a partnership agreement with the Saint Louis UGB for a period of 6 years, for the implementation of an operational study combining research (systematic neonatal screening) and treatment (early treatment of children with sickle cell disease). This study, based notably on the analysis of epidemiological, clinical and socio-anthropological data, relies heavily on collaboration with the research teams of other departments of the UGB (applied sciences and technology, sociology and anthropology). It seeks to measure the beneficial effects of the screening and early treatment of newborns.

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Like in the Democratic Republic of the Congo, in Madagascar the Foundation supports 8 healthcare facilities in 4 cities. More than 10,500 screening tests were carried out in these two countries, more than 1,500 patients were treated and almost 300 professionals were trained.

PROGRESS IN 2015

Cameroon is the third country to have joined the socio-medical sickle cell disease treatment platform. On 15 June 2015, in the presence of the Minister of Public Health, Cameroon officially launched its activities on this platform. In this country, based on its usual approach, the Pierre Fabre Foundation relies on existing facilities and the Cameroon Institut Pasteur for screening.

In parallel, the Democratic Republic of the Congo continued the development of its work with 45 healthcare facilities proposing screening and, among them, eight which provide treatment.

Globally, in 2015, 22,500 children benefitted from a screening test. 2,000 sickle cell disease sufferers were treated in partner health centres. 800 healthcare professionals were trained in screening and treating sickle cell disease. 29,000 people were provided with information about the disease.

PROSPECTS

According to forecasts, 12,000 newborn Cameroonians should, in the long-term, benefit from a screening test. 600 sufferers will be followed-up in 7 establishments in Yaoundé and Douala and 200 healthcare personnel will be trained. The Pierre Fabre Foundation’s other objective is of course to continue to offer support to the IECD with a view to formalising and harmonising operational procedures and programme tools, as well as the IMRA (Madagascan institute of applied research) in Antananarivo.

CONTEXT

Given the worrying statistics announcing almost 40,000 births every year of children carrying the severe form of the disease, as early as 2006, the health authorities of the Democratic Republic of the Congo implemented a national programme to combat sickle cell disease. Alongside this first country, the Pierre Fabre Foundation began its commitment to Central Africa by making the decision to support, in 2011 and for two years, the sickle cell disease treatment unit at the Monkolé hospital centre in Kinshasa. Prof. Léon Tshilolo was the managing doctor.

The Foundation donated to the Monkolé centre part of the medical equipment necessary for screening and treating patients, training healthcare personnel (in particular through exchanges with the CRLD in Bamako, Mali), raising awareness and informing patients and the general public. In 2012, it helped fund the construction of a paediatric treatment unit for sickle cell disease in the hospital centre.

In 2014, the Pierre Fabre Foundation wanted to continue its involvement in this process by promoting the transfer of knowledge, pooling of experience and cohesion of treatment protocols between several countries affected by the disease. It then joined forces with the European institute for cooperation and development (IECD) supported by the French Agency for Development (AFD) to create an extended platform in Madagascar, Cameroon and the Congo.
disease consultations in the three hospitals it supports. With regards to the healthcare personnel, three nurses were given training in sampling, (one completed the sickle cell disease university diploma provided by the West Indies-Guyana University in Pointe-à-Pitre) and will therefore be able to begin screening tests in each of the three partner hospitals. In terms of clinical research, a doctor was also trained in sampling techniques so that he could manage coordination of screening. The Ethics Committee validated the study protocol on 12 July 2015.

The cohorts now consist of more than 800 patients within the three partner hospitals: we have a cohort of 250 sickle cell disease sufferers in the Haiti university hospital (HUEH); a cohort of 65 sickle cell disease sufferers in the hôpital universitaire de la Paix (HUP) where sickle cell disease consultations began in April 2014, and a cohort of 500 children with sickle cell disease in the hôpital Nos Petits Frères et Soeurs St-Damien.

**PROSPECTS**

The start of neonatal screening in all three hospitals, where the number of weekly births has been estimated at 180 (10 births per day and per hospital on average), i.e. 720 per month.

The Pierre Fabre Foundation intends to enhance the awareness-raising and educational work carried out in the three medical centres that it supports and also with respect to the general public. World Sickle Cell Day on 19 June is very important in this respect: it should see events organised throughout the entire week preceding World Sickle Cell Day. The public will be able to attend awareness-raising and information sessions as well as the broadcasting of the video in different media and events in the three centres etc.

On the fringes of the 16th congress of the Haitian Paediatric Society (SHP) planned from 13 until 15 June, a “sickle cell disease” focus has been organised through workshops and support groups intended both for medical personnel and the general public. Leaflets, posters and brochures regarding sickle cell disease will be widely distributed to the public present at this event.

In 2014, the Pierre Fabre Foundation wanted to extend its involvement in combating sickle cell disease in the Caribbean, and supporting a project in Haiti, in cooperation with the Institut Necker Pédiatrie Haiti (INPHA – Necker paediatric institute in Haiti) and the Carest network1. After an exploratory mission, the Foundation began an initial operation seeking to study the feasibility of a programme to improve the treatment of sickle cell disease, while notably compensating for the shortage of epidemiological data. It funded the training of healthcare personnel in the three partner facilities: the Haiti university hospital, hôpital universitaire de la Paix, and the hôpital Nos Petits Frères et Soeurs St-Damien.

**PROGRESS IN 2015**

The progress of the programmes is somewhat slowed by the complexity of the healthcare situation in Haiti. However, through the Association d’Anémie Falciforme d’Haiti (AAFH - Haiti Sickle Cell Anaemia Association), the Pierre Fabre Foundation supported efforts to communicate, educate and raise awareness in the general public, which involved the creation of informative material (brochures, posters, video in Haitian Creole). The Foundation funded the purchase of DVD players and televisions so that this video could be shown during sickle cell disease consultations in the three hospitals it supports.

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1 Caribbean network of Researchers on Sickle cell disease and Thalassemia}.
Access to quality healthcare is a fundamental right for every human being, but it is unfortunately not a reality everywhere on our planet. In developing countries in particular, numerous obstacles prevent populations from accessing basic healthcare: the absence or remoteness of healthcare facilities, lack of drugs, and lack of qualified healthcare professionals, lack of material or financial resources. For all of the reasons listed, Southern countries sadly hold the record for what the WHO calls “avoidable deaths”. The Pierre Fabre Foundation chose to invest in providing isolated populations with access to quality healthcare by taking a variety of actions. Supporting existing medical facilities, supporting the creation of further facilities where they are insufficient, providing medical assistance in the field in emergency situations or adopting a forward-looking attitude by banking on e-health; these are the various approaches adopted by the Foundation in response to this complex issue.
When it comes to access to healthcare, several main factors characterise poor countries: the limited financial resources of the populations, distance from medical centres1 and a lack of human medical resources. This gives rise to numerous dramatic situations. A 2015 WHO report notes for example that “almost all maternal deaths (99%) occur in developing countries”. With regards to children, in 2012, another report deplored the death of more than “6 million children under the age of five, every year, from treatable or preventable diseases”. In addition to this litany of damning facts, the management of chronic diseases in Southern countries is becoming increasingly complex. The governments of the countries concerned are facing all of these challenges at a time when international healthcare assistance is still focussed on the major pandemics (HIV/Aids, tuberculosis, malaria). How can we try to help improve the situation? The Pierre Fabre Foundation is taking a variety of actions.

SUPPORTING RURAL HEALTH CENTRES

Since its beginnings, the Pierre Fabre Foundation has taken an interest in the issue of access to primary healthcare, which led it to support or build medical centres in isolated rural areas. In Senegal, the Foundation supported the Wassadou Medical Centre in a disadvantaged region in the east of the country. The Foundation contributed to the creation of this facility in 2005 and continues to assist in its operating today. Every year, the Pierre Fabre Foundation also provides funding to the socio-medical centre in Khaldieh (Lebanon), created and managed by the Order of Malta, continuing the personal commitment Mr Pierre Fabre made twenty years ago.

EMERGENCY MOBILISATION

This long-term presence and the relations built with local actors have raised the Foundation’s awareness of the emergency health issues created by the Syrian crisis, which leave a considerable number of displaced persons vulnerable. The substantial influx of war refugees in Lebanon has resulted in an exponential increase in healthcare needs, which existing facilities are finding it difficult to cope with. Consequently, the Pierre Fabre Foundation decided to extend financial support to a second socio-medical centre in Kefraya and joined forces with the Order of Malta to set up a mobile medical unit in the Beqaa region.

A NEW OPPORTUNITY

Today, the emergence of information and communication technologies (ICT) offers new ways to provide populations with medical and sanitary assistance. An alternative to traditional methods of intervention, ICT makes it possible to connect information or medical expertise and the needs of patients, in particular through mobile phones. This gives us hope that we can provide complementary and innovative solutions to the numerous difficulties in terms of access to healthcare. The Pierre Fabre Foundation has started to get involved in e-health, which due to its high potential evidently constitutes a chance for the African continent. It has fixed itself the objective of federating actors at the crossroads between health, development and digital technology to form an “Observatory for e-health”. It also supports an ultrasound stethoscope project.

REFLECTION AND POOLING

Eager to draw from the experience of the operators concerned, like it, by the health issues in Southern countries, since its installation in its new premises on the En Doyse site in Lavaur (Tarn), the Pierre Fabre Foundation has been organising an annual meeting dedicated to reflection and sharing good practices. Therefore, after hosting representatives from major international organisations which provide development and healthcare assistance, the October 2015 conference showcased the role of the various actors of decentralised cooperation, by targeting its examples in the Midi-Pyrénées region. This was also the opportunity for the Foundation to recall its fondness for its founder and this region, even if all of its activities have an international focus.

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1. Ideally, the closest health centre/clinic should not be more than 5 km away (or 10 km in particularly difficult regions. (Jacquemot Pierre, “Les systèmes de santé en Afrique et l’inégalité face aux soins” – Afrique contemporaine 3/2012 No. 243 – pp. 95-97)
In addition to its mission, which involves facilitating access to quality healthcare in isolated and disadvantaged areas of Southern Countries, the Pierre Fabre Foundation seeks to be a theatre for dialogue and exchange, in order to establish relations conducive to future collaborations and propose solutions to healthcare problems in Southern countries.

Thus, in 2014 at the En Doyse site, the administrative headquarters of the Foundation, a cycle of annual conferences was initiated bringing together a very diverse public (public authorities, private actors, healthcare operators and non-governmental organisations). The inaugural conference in 2014 was dedicated to the role of France in the public health of Southern countries.

**ANNUAL CONFERENCE**

On 2 October 2015, the Foundation organised its second major conference. This year, the aim of the event was to highlight the role of local authorities in taking measures for the health of populations in the least advanced countries.

The first part of the day was dedicated to analysing the background, organisation and current achievements of decentralised cooperation. The interventions of Jacques Godfrain, former Minister for Cooperation and treasurer of the Pierre Fabre Foundation, and Martin Malvy, President of the Languedoc Roussillon Midi-Pyrénées regional council, preceded a round table on the issues and challenges faced by the regional healthcare actors involved in the cooperation with the South.

The afternoon was dedicated to presentations of concrete cases: actors in the field highlighted the importance of defining relevant criteria in the selection of a project, as well as indicators intended to assess its effectiveness.

These case studies were preceded by the intervention of Dr Jean-Pierre Lamarque, who specified the conditions of a successful cooperation and highlighted the added value of local authorities in the setting up of niche projects.

**CALL FOR REGIONAL PROJECTS**

Since its creation, the Pierre Fabre Foundation has supported initiatives from small and average-sized organisations in the healthcare sector in favour of disadvantaged populations in the South.

In 2015, in order to confirm and structure its support to leaders of local projects, the Foundation became a member of the Midi-Pyrénées Coopdev’, the network of cooperation and international solidarity actors in the Languedoc Roussillon Midi-Pyrénées region.

At the end of the year, and in cooperation with Midi-Pyrénées Coopdev’, the Foundation decided to prepare the launch of a call for regional projects, intended to provide financial support to healthcare assistance activities in Southern countries, put in place by regional organisations, the Foundation’s historic anchor.
EXTENDING SUPPORT

Humanitarian emergencies

CONTEXT

Since 2002, the Pierre Fabre Foundation has been supporting the socio-medical centre in Khaldieh in collaboration with the Order of Malta in Lebanon. The Foundation’s commitment in the Middle East is the extension of the personal endeavour of Mr Pierre Fabre who decided to provide this support after the war in Lebanon.

Situated in the north of the country in a very disadvantaged region, the Khaldieh socio-medical centre allows patients from the region to access numerous social services and medical treatments, both in general and specialised medicine. In addition to the 7,595 consultations and 1,084 medical procedures carried out on average each year, the Khaldieh socio-medical centre is also responsible for organising patient home visits and community activities, thus contributing with increasing relevance and solidarity to the improvement of the region’s healthcare infrastructure and social fabric.

PROGRESS IN 2015

Beyond the faithful extension of Mr Fabre’s initial commitment, the Pierre Fabre Foundation decided to increase its support to Lebanon given the current situation in the country. A neighbour of Syria, with which it shares 375 km of border, Lebanon is currently experiencing a record influx of refugees due to the Syrian conflict: in July 2015, there were 1.2 million refugees for a country with 4 million inhabitants. This situation creates imbalances, in particular regarding healthcare. Informed by the Order of Malta, the Pierre Fabre Foundation made an exceptional donation to the Kefraya socio-medical centre in the Beqaa region for the purchase of drugs.

With more than 400,000 Syrian refugees settled in this border area, the vast majority of which are women and children, access to healthcare has become a humanitarian emergency. In response to this crisis, the Pierre Fabre Foundation and the Order of Malta in Lebanon came together to create a mobile medical unit which will provide medical assistance to Syrian refugees and the local population. The Pierre Fabre Foundation committed itself to this project at the end of 2015, a pilot version of which has been successfully tested by the Order of Malta since 2014 in the Akkar district, in the north of the country. Through this action, the Foundation meets one of its statutory missions: “Allow populations exceptionally plunged into severe political, economic situations and/or natural disasters, to access healthcare”.

PROSPECTS IN 2016

An agreement between the Pierre Fabre Foundation and the Order of Malta was signed to cover the initial investment (purchase of a bus, fitting, provision of equipment and drugs) and two years of operation (funding of a medical team composed of two doctors, a nurse and a social assistant).

The mobile medical unit’s team started work in spring 2016 and should be able to provide 1,200 consultations per month. Its services are not only intended for refugees but also Lebanese populations which are sometimes in precarious situations similar to those of the refugees.

In addition to consultations and dispensing drugs (free for people without means), if necessary, the team will transfer patients to the Kefraya medical centre or a hospital in the region.
INTERVIEW

Charles-Henri d’Aragon
Ambassador of the Order of Malta in Lebanon
and President of the Association Malte Liban

“In light of the emergency situation that Lebanon is currently facing, at the end of September 2015, the board of directors of the Pierre Fabre Foundation validated the decision to fund a mobile medical unit project. We immediately set up the operation by putting together pre-fitting for the unit. A bus for 30 people had to be purchased and fitted to turn it into a medical clinic on wheels. At the same time, we started to recruit personnel (a doctor, nurse, social assistant and, of course, a driver) and train them so that they would be ready to act effectively when the equipment was available.

We already have the experience of another mobile medical unit which has been working successfully in the north of the country since the end of 2014. We can therefore count on a transfer of experience. Said unit mainly welcomes refugees, but also hosts Lebanese populations which live in this poor region. The ratio is around 80% Syrian refugees, 20% Lebanese. The unit sees around 1,200 people per month. There is considerable demand, in particular in paediatrics, gynaecology, chronic diseases such as diabetes, which is very widespread in the region, and cardio-vascular diseases. Given the hygiene conditions, there are also cases of dermatosis, in particular scabies.

We estimate that there are around 1.2 million refugees in Lebanon for a country with a national population of 4 million inhabitants. There are around 400,000 refugees in the Beqaa region. They live in difficult, precarious conditions. Access to healthcare is not evident, thus the idea of being as close to the people as possible, by travelling to them.

“A mobile unit to get as close as possible to the populations”

We have been cooperating for a long time with the Pierre Fabre Foundation in the Khaldieh centre, which is considered as the best primary healthcare centre in the country. It really is encouraging. With this mobile medical unit, which will start to operate between now and the start of April 2016, we are taking an extra and absolutely essential step together.”

Queue in front of the Akkar mobile medical unit, Lebanon, 2015
When it comes to healthcare, a de facto exclusion affects certain geographic areas of Senegal where the populations, particularly those far away from the medical centres in cities, have difficulty accessing healthcare. While public measures like adoption of CMU – universal health coverage, adopted in September 2013, which allows the most vulnerable patients to be cared for free of charge, constitutes progress, there are still many problems to resolve.

In 2014, a national survey\(^1\) acknowledged that while the country had 3,084 healthcare facilities (including 86 hospitals, 242 health centres, 1,250 health posts and 1,506 community clinics), it did not yet respect the recommended standards of the World Health Organisation (WHO) in terms of coverage of healthcare infrastructures. Despite an improvement in the situation during the last two decades, Senegal is notably struggling to reduce certain scourges such as maternal and infant mortality.

It was in this context that the Pierre Fabre Foundation wanted to contribute to the creation of a place likely to offer quality primary healthcare, take responsibility for the health of mother and child, and carry out certain surgical acts. A medical centre was therefore established in a rural region in the east of Senegal, around sixty kilometres from the city of Tambacounda. Operational since November 2005, the Wassadou medical centre offers families general medical care, dental care, a delivery room, small surgical unit, medical laboratory, small pharmacy and 14 short-term hospital beds.

The medical centre personnel also carry out bush missions, in order to care for patients who cannot travel to the centre. Finally, the Wassadou Medical Centre seeks to raise awareness by organising exchange and information sessions.

**PROGRESS IN 2015**

The Pierre Fabre Foundation continued its efforts to support the Wassadou Medical Centre, whose operational management is entrusted to the NGO Première Urgence Internationale. Its funding is intended for healthcare expenses (purchasing drugs, laboratory products, dental products, funding of medical visits) and the functioning of medical personnel.

In March 2015, an assessment was made of the healthcare services offered by the Wassadou Medical Centre and the non-covered healthcare needs of the region’s population, with a view to contributing to the implementation of new healthcare services and income-generating activities, guarantees of the sustainability of the facility.

**PROSPECTS FOR 2016**

The purpose of the Pierre Fabre Foundation, in the short and medium-term is to have the Wassadou medical facility integrated into the Senegalese healthcare system. During the first quarter of 2016, the Pierre Fabre Foundation will fund a project management position to guide the implementation of solutions which optimise and ensure the sustainability of the facility, based on the recommendations of the assessment mission carried out in March 2015.

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\(^{1}\) A continuous national demographic and health survey in 2014

<table>
<thead>
<tr>
<th>Activity</th>
<th>2015 Count</th>
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<tr>
<td>Maternity consultations</td>
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A young girl in front of the Wassadou Medical Centre
### CONTEXT

Situated around 35 km from Fort-Dauphin, the urban community of Ranopiso is located in the south of Madagascar. While a basic health centre exists and is active in the town, the maternity unit, situated nearby, was completely abandoned. The building, which dates back to the 1950s, had never been renovated.

For pregnant women, the follow-up for prenatal consultations was therefore provided by the health centre. However, out of the fifty or so women followed-up each month, on average in the urban community, only two or three of them were going to give birth in the maternity unit, the others preferring to opt for a traditional birth at home, due to a lack of adapted infrastructure.

Called upon by the Ranopiso Council which wanted to get the maternity and obstetrics services in the building back on their feet, the Pierre Fabre Foundation funded the renovation of the maternity unit by partnering, at the end of 2014, through a tripartite agreement, with the regional directorate for public health on which the maternity is dependent, and the Fort-Dauphin Lions’ Club (International NGO which managed this project locally). This action reflects the Foundation’s overall desire to facilitate access to primary care for populations which have little or poor medical services.

### PROGRESS FOR 2015

A month and a half of works was enough to renovate the maternity unit which was inaugurated on 20 March and welcomed its first newborn three days later. The works involved completely renovating the facility using the four pre-existing walls: roof, electricity, examination room, delivery room, postpartum room, midwives office.

The Ranopiso Council also set up accommodation for people accompanying patients, while the regional directorate for public health supplied equipment and furniture.

### PROSPECTS FOR 2016

As well as facilitating access to quality healthcare for a population of around 10,000 people in the south of Madagascar, in the future, the Ranopiso maternity unit should serve as a reference centre for the training of healthcare personnel.
CONTEXT

The evolution of information and communication technologies (ICT) and the worldwide spread of mobile phones, smartphones, tablets and smart objects open a hundred and one possibilities in the medical sector. Digital technology reduces distance while allowing healthcare professionals to communicate on a large scale (information, campaigns, prevention, vaccinations etc.) and to remotely accompany patients (medical follow-up, telemedicine etc.).

The Pierre Fabre Foundation, aware of the numerous opportunities offered by e-health in terms of access to quality healthcare for Southern countries, has been involved in its development for several years already. In the context of the programme to combat sickle cell disease in Madagascar, it supported the development of DrepanoMRS, an application allowing the follow-up of patients with sickle cell disease and sharing of information between doctors. It is now supporting the development of a low-cost hand-held ultrasound stethoscope and the deployment of an application on mobile phones allowing the collection and transfer of healthcare data to health centres in Mali and Burkina Faso. Finally, this year the Foundation decided to get involved in the creation of an Observatory, in order to showcase e-health initiatives which benefit the health of populations in less developed countries.

PROSPECTS FOR 2016

2016 should see the finalisation of the observatory for e-health with the creation of a website dedicated to making information available. An inaugural conference will take place on 4 July 2016, in the Foundation’s premises in En Doyse, to present nine initiatives selected for their relevance and impact, all from Africa and Asia. This event, which will bring together the world of development assistance, new technologies and health, will also be the opportunity for actors in the South and public and private organisations involved in supporting and funding e-health solutions to meet and exchange.

OBSERVATORY FOR E-HEALTH IN SOUTHERN COUNTRIES

2015 saw the creation of a work group, composed of experts, focussing on e-health and its development in favour of less developed countries. The “Observatory for e-health in Southern countries” was born following this group work. The purpose of this Observatory is to identify the innovations and projects, whether pilot or developed, which have demonstrated a benefit for the health of populations in less developed countries. Its goal is also to make the latter known through the creation of a database listing the most relevant initiatives, to promote them to actors in development and public health assistance and finally to contribute to their development by providing direct assistance and through communication campaigns.

The Foundation entrusted two operators with identifying promising start-ups through surveys and field studies. The latter constitute the first database of the Observatory for e-health, which continues to grow due to a permanent watch.
**DJANTOLI: AN APPLICATION FOR THE MEDICAL FOLLOW-UP OF CHILDREN**

In West Africa, one in six children do not reach the age of five due to the fact that they do not benefit from appropriate and quick treatment. The organisation Djantoli set itself the task of helping mothers to monitor the health of their children by developing solutions designed to facilitate quick access to treatment. It therefore created a smartphone application to improve medical follow-up and access to health centres.

The model relies on the development of a simple follow-up, warning and access method based on visits carried out by travelling health workers trained by Djantoli who regularly visit families to ensure follow-up of the children. The information collected is recorded on a “digital health card” (mobile phone application) sent to the referring healthcare facility. At the end of 2015, the Pierre Fabre Foundation decided to offer its support to the organisation to optimise this tool. It also asked Djantoli to study the feasibility of integrating the follow-up of children with sickle cell disease into this mobile healthcare device.

**ECHOPEN: AN OPEN SOURCE ULTRASOUND STETHOSCOPE**

The digital manufacturing workshop EchOpen brings together a collaborative community composed of multidisciplinary experts, which seeks to make ultrasound medical imaging technology accessible. For more than a year, EchOpen has been working on the design and development of a revolutionary tool, a prototype open source ultrasound stethoscope. The device, made using very few resources and simple to use, can be connected with a mobile phone, tablet or smartphone. It could completely change access to healthcare by simplifying the diagnosis process and offering doctors new opportunities, especially in areas with poor healthcare services or in the context of humanitarian missions. The Pierre Fabre Foundation is supporting the project to allow the development of a prototype in 2016.
Trivialised due to their common and “tolerable” nature compared to life-threatening diseases, skin diseases constitute nonetheless a worrying health problem in most developing countries. With prevalence rates reaching 30%, they can have serious complications in the case of insufficient or unsuitable treatment. While there is a demand for treatment, Southern countries lack healthcare professionals trained in dermatology in order to meet this need. A simple infection which goes unnoticed or untreated can turn into a serious disease, and on a social level can lead to stigmatisation related to ignorance or false beliefs.

In light of these needs and the lack of resources, the Pierre Fabre Foundation chose to commit itself to dermatology in tropical areas. It seeks to improve the medical training of healthcare professionals, the cornerstone of quality healthcare, and wants to help both patients suffering from the most common diseases and those with rarer but devastating diseases such as noma.
“Dermatoses” is a generic term which takes into account all skin diseases. Behind this very vast category, we can define sub-categories depending on the most commonly encountered pathologies. There is a long list: infectious dermatoses, hypersensitivity dermatoses, drug eruptions, tumoral dermatoses, auto-immune dermatoses, cosmetic dermatoses and other forms of dermatosis which do not fit into any of these categories.

Known for being common infections, dermatoses are often considered trivial: they can present at any age and affect 30 to 70% of individuals in the world. However, it should be noted that these diseases can have a significant impact on the everyday life of sufferers and can worsen and develop into serious and potentially life-threatening diseases if they are not properly treated.

**COMMON BUT BY NO MEANS TRIVIAL DISEASES**

In addition to creating complications which can include invalidity or even death, dermatoses have a particular psycho-social dimension. The skin is the organ which allows tactile exchanges. Its alteration by a disease can be difficult to cope with, not only for the patient but also their family and friends. In Sub-Saharan Africa, isolation and stigmatisation – exclusion from the community, rejection in the workplace, breakdown of the couple – are often the fate of people suffering from these visible diseases as the populations ignore both the effects and the treatments.

**A COMPLEX PROBLEM**

While this issue was still considered to be of limited interest a few years ago, particularly in the African continent, the extent of dermatological problems in tropical areas is increasingly documented. Several studies look at diseases in certain regions or countries. However, as yet there is no large-scale study which records the breakdown of all skin conditions in the African continent. The variability of the diseases throughout the continent, the diversity of recommendations for the same condition (due in part to imbalances in access to essential drugs), the growing demand for treatments in the affected populations and the lack of professionals qualified in dermatology and likely to identify and treat the disease, are all factors which make the problem complex.

**A NEW AREA OF INTERVENTION**

Acknowledging this situation, the Pierre Fabre Foundation decided to make tropical dermatology its fourth area of intervention. It chose to commit itself equally to improving the diagnoses, prevention and treatment of the most common diseases and the fight against the most serious diseases. Consequently, in Burkina Faso, the Foundation supports an organisation dedicated to combating noma. A disease of poverty, due to a lack of hygiene and treatment, noma has a devastating effect on children who, without treatment, die or are left disfigured for life by the rapid progression of a simple bacterium.

In Mali, the Pierre Fabre Foundation positions itself upstream from treatment. It participates in training healthcare personnel and pooling expertise by implementing a pilot programme in teledermatology in three regions which seeks to improve diagnostics and treatment by means of information and communication technologies.

Finally, the Pierre Fabre Foundation intends to offer medical support to people living with albinism in Africa. It issued a call for projects to various organisations operating in this sector in order to support the best local actors and therefore improve prevention and treatment of skin cancers, a major risk for albino people.
“The problems faced in Southern countries when it comes to dermatology are first and foremost the classic problems faced in this specialty. In Africa, we have the same diseases that we find elsewhere: infectious diseases, bacterial diseases, viruses, parasitic diseases, sexually transmitted disease, cancers etc. Accompanying local economic, organisational and logistical difficulties often complicate matters. The sufferers are faced in particular with difficulties accessing treatments: when patients live in remote areas, they sometimes have to be transported on difficult roads. Terrorism in certain regions prevents the creation or upkeep of health centres… There are also a number of diseases which are specific to Southern countries, which exist in other countries but which, in tropical areas, present specific problems. Albinism, for example, exists throughout the world but, in African countries, the increased sensitivity of albinos to UV rays has more serious consequences related to the strong sunshine. This can have severe medical repercussions as patients who are not screened in time are at a serious risk of developing cancer. Moreover, the medical problems spill over into the social sphere. People with albinism have visual difficulties. It is difficult for children to receive an education, simply because they cannot properly see what is written on the blackboard or in books. They are seen as intellectually retarded children when this is not at all the case and they are excluded. In other cases, in contrast, they are chased, or even killed, due to beliefs regarding the powers that their skin might have. In yet other cases, doctors simply do not see them because the families hide them…

Noma is also a very particular disease, which initially arises due to a simple dental infection that could have been quickly cured by antibiotics but which due to malnutrition very quickly takes on disastrous proportions resulting in death or serious damage requiring corrective surgery. Difficulty accessing treatment and the emergency transfer of medical expertise play a role here. Survivors almost always have serious facial disfigurements.

I believe that teledermatology, and more generally telemedicine, offers an opportunity to improve the situation, make progress, if a certain number of conditions are met. I myself have experience of this in another region of the world. It allows us to make diagnoses, compare specialist opinions, give surgical indications… However, tele-expertise and tele-consultation requires expertise, organisation and a lot of medical time. It is first and foremost a qualitative tool. A consultation remains a consultation even with new possibilities. It should be noted (and taken into account) that telemedicine takes up as much medical time as traditional medicine, if not more because it creates new needs. The practical difficulties must not therefore be eluded and it must be acknowledged that new means do not replace human expertise.

Medical problems spill over into the social sphere

Finally, it is important to note that dermatological problems are often indicators of systemic diseases, which they make it possible to diagnose. For example, certain rheumatisms, cardiac diseases or viral diseases, for example the Zika virus, can present in the form of skin lesions. It is therefore important to train dermatologists. In general, their training is very satisfactory, but the other medical professions – general practitioners or other doctors in other specialities, as well as nurses and physiotherapists - also need complementary and updated training in dermatology. In particular, training must be given to personnel – nurses and nursing auxiliaries - who will be the first to treat sufferers, often in difficult conditions and remote locations: their initial judgment can dramatically change a patient’s future.”
In Mali, according to healthcare statistics provided by the National Directorate for Health, skin diseases constitute the third reason for requiring treatment in primary health centres. However, there is a severe shortage of doctors specialized in dermatology in Mali. There is less than one dermatologist per million inhabitants and they mainly practice in Bamako, the capital city, while the majority of the population lives in rural regions. So much so that, people suffering from skin infections have very little choice: either consult in the primary health centres where there are no specialists, or, when they can, bear the financial and geographic constraints imposed by their situation. This doubly negative alternative leads numerous patients to decide against medical treatment and resort to seeing traditional practitioners or simply self-medicating, which is just as risky.

The resolution of these various problems is evidently complex, but among all the possible solutions, training healthcare personnel seems to be a priority. The Pierre Fabre Foundation has been making efforts to this effect since 2008, by supporting activities carried out by Prof. Ousmane Faye, dermatologist, lecturer and head of the dermatology department of the Centre National d’Appui à la lutte contre la Maladie (CNAM – National support centre for the fight against disease) in Mali. The Foundation supported the medical training given to health officers on a peripheral level (outside the main urban centres) and doctors. Around ten dermatologists have been trained. Another of the Pierre Fabre Foundation’s focuses is the improvement of diagnoses through Information and Communication Technologies (ICT). Noting that healthcare personnel did not hesitate to ask specialist colleagues for their opinion by mobile phone, Prof. Ousmane Faye sought to scientifically assess the scope of this approach. He set up a study entitled “New information and communication technologies and the treatment of skin diseases” in order to assess the feasibility and impact of telemedicine on the treatment of skin diseases. The Pierre Fabre Foundation decided to support this pilot project.

PROGRESS IN 2015

2015 saw the organization of a training workshop for healthcare professionals with the aim, on the one hand, of teaching the latter how to recognize and treat common skin conditions and, on the other hand, allow them to set up a permanent platform for exchanges with specialists in dermatology for the treatment of difficult cases. The workshop entitled “Teledermatology or e-dermatology” took place from 21 until 23 October 2015 in the CNAM premises, in partnership with the Centre d’Expertise et de Recherche en Télémédecine et e-santé (CERTES – Telemedicine and e-health expertise and research centre). Prof. Faye’s programme, designed for peripheral centres in various provinces of Mali, was therefore launched. The telemedicine platform is designed to allow populations in the Koulikoro (Koulikoro, Banamba, Nara), Sikasso (Sikasso, Kadiolo) and Mopti (Mopti, Bankass, Douentza and the Sevaré 2 community health centre) regions to regularly benefit from the expertise of dermatology specialists. 9 pilot health centres have been equipped and 18 workers trained in common dermatoses and digital tools.

PROSPECTS

The Pierre Fabre Foundation is continuing to work on training and equipping healthcare personnel to improve the treatment of skin diseases in Mali. Use of digital tools to communicate a coloured iconography to specialists seems to be an essential and innovative way to reduce diagnostic errors and harmful expenses in disadvantaged areas. In the long-term, the system implemented should result in the creation of a national network and could be extended to other West African countries.
Our teledermatology platform’s strength lies in the fact that it has successfully trained around 25 health workers in basic dermatology and set up a telereference system in three regions of Mali. Ten health centres in these three regions are in direct contact with us, in Bamako, and we regularly discuss the treatment of skin infections in these areas. What is remarkable is that, after giving the health workers basic training, we help them to treat the infections of patients who would have had to travel to see dermatologists. With the implementation of this teledermatology system, they don’t need to travel long distances, they can count on a medical opinion and the prescription of treatment. We are therefore democratizing access to medical diagnoses by specialists. Feedback from the field has shown that patients were fully satisfied. They accept the procedure which involves taking pictures of the symptoms of their disease and sending them to experts for their opinion. The opinions are given within 24 hours and sometimes the same day.

Networking stated in November 2015 and as early as the end of 2015, 45 patients had been treated, i.e. on average 2 patients per centre, which perfectly corresponds to our expectations. The end of the project is planned for the end of 2016. An assessment will then be made, but we are already planning to ask higher health authorities in Mali to extend the operation to other regions in the country and other concerned health centres. Moreover, the networking of telemedicine produced another result: the system generated, as it were, a continuous training cycle. All of the workers receive, at the same time, images from patients sent to our platform and then receive information from specialists. It is as though they are receiving training. As a result, we noticed that the overall level of expertise of the workers is increasing. In the future, I hope that we will be able to train more than 2,000 health officers throughout the country. Ideally, in all developing countries which are lacking resources in tropical dermatology, I would like to see populations benefitting from this treatment system wherever they are. This will mean that we have taken a real step forward.”

Prof. Ousmane Faye
Head of the Dermatology Department at the Centre National d’Appui à la lutte contre la Maladie (Bamako, Mali)
CONTEXT

Albinism is a group of genetic disorders characterized by a decrease in the production of melanin (a pigment which protects from the sun) in the skin, hair and/or eyes. Extremely sensitive to sunshine, people suffering from albinism have an increased tendency to develop skin cancer. We believe that, in Africa, this risk of cancer is one thousand times higher in albinos than in the African population in general. All types combined, albinism affects one in 20,000 births worldwide. However, there are substantial differences in incidence depending on the country: while in the United States and Europe, one in 20,000 people suffer from albinism, this ratio increases to one in 4,000 on average in Sub-Saharan Africa, and one in 1,400 people in Tanzania! Daily protection of the skin and regular medical monitoring are necessary in order to prevent and detect possible skin lesions at an early stage, and enable early treatment. As for the eyes, the vision of sufferers is impaired and they suffer from photophobia and myopia.

In addition to the physical disabilities albinos suffer from, they also encounter difficulties in terms of social integration. In Sub-Saharan Africa, due to persistent beliefs that they have magic powers, albinos are frequently stigmatized and excluded from the community, if not harassed or victims of man hunts.

In the context of its activities concerning skin diseases in tropical environments, the Pierre Fabre Foundation chose to commit to improving the prevention and treatment of skin cancers in people suffering from oculocutaneous albinism in Sub-Saharan Africa, where prevalence is the highest in the world and where the population is particularly vulnerable and deprived of healthcare.

PROGRESS IN 2015

On 23 October 2015, the Pierre Fabre Foundation issued a call for projects to “improve screening, information regarding and treatment of diseases suffered by people with oculocutaneous albinism” to all active organizations in Africa. Among the answers received, three projects (in Côte d’Ivoire, Mali and Tanzania) were pre-selected and are the subject of studies in the field, with a view to a launch in mid-2016.

PROSPECTS

The Pierre Fabre Foundation took particular interest in work which is both preventive and curative, as well as activities to raise awareness in the population and advocacy led by these three organisations. These different courses of action correspond to the Foundation’s objectives which are to intervene in the areas of prevention, healthcare education, early screening, and treatment of the pre-cancerous and cancerous cutaneous lesions of people suffering from oculocutaneous albinism.

With the help of a think tank composed of dermatology experts, Prof. Gérard Lorette, member of the Foundation’s Scientific Committee, Dr Florence Poli and Dr Didier Guerrero – the Pierre Fabre Foundation is now undertaking an in-depth investigation on these organisations and their projects, so that in the long-term the foundations for solid support of their development can be laid, in line with its activities.
BURKINA FASO CONTEXT

Apparently, around 100,000 children in the world suffer from noma each year, mainly in African countries (Niger, Burkina Faso, Mali) and more marginally in Asia and South America. This serious disease was recognized by the WHO as a “public health problem” in 1994, but remains little known due to the lack of epidemiological data, its high rate of lethality and the beliefs and taboos surrounding it. Rapid tissue necrosis, noma is mainly due to a lack of hygiene, malnutrition and an immune deficiency, in children under 6 years of age. It starts with a benign lesion in the mouth before literally devouring, in the space of a few days or weeks, the lips, cheeks, nose and eyelids of the little victims. Without treatment, 70 to 80% of affected children die. The survivors have very debilitating consequences: mutilation of the face, difficulties eating and talking.

The Pierre Fabre Foundation got involved in the fight against noma in Burkina Faso by supporting the charity Les Enfants du Noma. This organization offers its surgical expertise to repair the faces of children left mutilated by noma. Since 2000, 21 surgeons, 10 anaesthetists, 4 doctors and 37 nurses have been involved, at regular intervals, in plastic and reconstructive surgery missions in Ouagadougou, treating 2,500 children.

PROGRESS AND PROSPECTS

A partnership agreement was signed between the Pierre Fabre Foundation and the organization Les Enfants du Noma in 2015, with a view to funding new missions (healthcare personnel, equipment) in Burkina Faso until 2017. However, activities in 2015 were disrupted by unprecedented socio-political instability in Burkina Faso (revolution, change in government, terrorist attack) which required that the planned interventions be postponed. The Pierre Fabre Foundation remains nonetheless very involved and will also be involved upstream in prevention of the disease, by participating in the campaign to raise the population’s awareness which will be carried out in 2016 by the organization “Vaincre Noma” in the Sahel region (in the north of Burkina Faso).

TOGO CONTEXT

In Togo, the Pierre Fabre Foundation has been contributing to another type of dermatological missions: it supports the humanitarian organization Tawaka, in the activities it has been carrying out since 2006 in the Saint-Luc de Tchannadé clinic (North of the country), in the treatment of keloid scars. Black people are frequently concerned by these cutaneous growths, resulting from an excessive scarring process, and whose development continues and spreads indefinitely. While keloids are not life-threatening, they are often the source of social exclusion.

PROGRESS AND PROSPECTS

In partnership with Tawaka, the Foundation contributes to funding the equipment and corticosteroid treatment necessary for the treatment of keloids by Dr Guadagnin, dermatologist-veneriologist.

During the February 2016 mission, around 30 dermatological consultations were organized at the Saint-Luc de Tchannadé-Kara clinic and around 80 took place in Kouméa. Medical equipment was given to the local team, including dermojets. This syringe without a needle allowing any kind of liquid to be injected intradermally without contact with the patient’s skin, proved its usefulness in the treatments. The delivery and installation of sterilization equipment for medical materials is still to come.
This programme involves 200 ha of unexploited land at a rate of 20 ha per year for three years. 650 trees will be replanted during the first half of 2016.