Application for Global Grant

Humanitarian Project:
Nasopharyngoscope - Acquisition of a Karl Storz Fiberoptic ImagingSetfor Endoscopy.

Recipient:
Brazilian Association for the Support of Fissured Patients
Brasília-Federal District - Brazil

Responsible for the Project:
Rotary Club of Brasilia-Leste
Brasília - Federal District – Brazil

Table of Contents

PROJECT BRIEF

The project aims to promote functional and aesthetic rehabilitation of patients with cleft lip and palate fissureas well as their full reintegration into society. The beneficiaries are treated in the Brazilian public health network, at the Regional Hospital of Asa Norte– HRAN. The HRAN is a referral hospital in the Central-West Region of Brazil, which provides a Multidisciplinary Service for the Treatment of Cleft Lip and Palate Fissures responsible for themedical procedures and follow-up of patients. About 200 patients are submitted to surgery or are waiting for surgery each year. In addition, 160 patients receive speech therapy treatment per month. To undertake these procedures, it is necessary an endoscopic equipment, the NASOFPHARINGOSCOPE, whichenable qualitative and timelydiagnosis andintervention. Unfortunately, the HRAN does not have this set of equipment, resulting in huge loss in effectiveness. Thus, this project entails the acquisition of a Karl StorzNasopharyngoscope and imaging set, including the training of all professional staff who will operate and care for this set of equipment. The material will be provided to the Brazilian Association of Fissured Patients Support – ABRAFIS, CNPJ, No. 18.272.824 / 0001-86, which will be responsible for the use and maintenance of such equipment. The cost of the project is $85,946, from which the international partner should provide $13,000. With the use of the NASOFPHARINGOSCOPE it is forecasted that the treatment will be more effective reducing the waiting time in the hospital. Consequently, it will reduce the costs of permanence in the hospital,improving overall services delivered. Finally, it will positively impact in the recovery of patient's self-esteem, leading to quick reintegration into society. This project falls under the Focus Area: Prevention and Treatment of Diseases and Improving Child Health Care.

PROJECT OVERVIEW

1. Name
NASOFPHARINGOSCOPE- Acquisition of a Karl Storz Image set for endoscopy.

2. Objective
Promote functional and aesthetic rehabilitation as well as the reintegration of patients with maxillofacial fissures (specifically cleft lip and/or palate) into society.

3. Focus Area
Prevention and Treatment of Diseases and Improving Child Health Care.

4. Expected Results (Indicators)

With the acquisition of the specified equipment, it is expected that there will be an enhancement on the ability toprovide medical follow-up for patients in preoperative and/or postoperative routines reaching100% of demand. Currently there are about 250 patients waiting for an endoscopic examination in postoperative follow-up and/or waiting for a surgical

procedure.Thisequipment will allow for the provision of proper medical examination in 100% of patients undergoing routine speech therapy, which corresponds to approximately 160 patients per month.

Today the Hospital does not have proper equipment for nasal endoscopy.

5. Responsible for the Project

Rotary Club of Brasilia-Leste, District 4530. Registered under RI No. 8019 inApril 30, 1969. Locatedat: SCES, Trecho 3, Lote 6, Avenida das Nações, Brasília – Federal District, Brazil.NationalRegistration(CNPJ) nº 37.159.290 / 0001-20.

6. Beneficiary Entity

Brazilian Association for the Support ofFissured Patients – ABRAFIS. Locatedat: ST SMHN Quadra 101, Área Especial S/N, Zip Code: 70.710-100, Asa Norte, Brasília –Federal District,Brazil. National Registration (CNPJ) nº 18.272.824 / 0001-86.

7. Beneficiary Community

Cleft lip and palate fissured patients treated in the Brazilian public health system at the Regional Hospital of Asa Norte - HRAN, located in Brasília, Federal District, Brazil. The hospital is a member of the Health system of the Federal District. The HRAN is considered a referral hospitalin Brazil for this type of health care provision, specifically in the center west region and surroundings of the Federal District. The treatment and follow-up of patients is done by amultidisciplinary service team for the treatment of labial-palatal fissures.

8. What is Part of the Project

The acquisition of a Karl Storz Image Set for endoscopy to be used on patients with cleft lip and palate fissures, including provision of training onhandling, cleaning, proper sterilization and overall material care by the supplier.

9. Total Cost of the Project

US$ 85,946.00 Rotary dollars (The equipment is estimated in R$ 324,060.00 Brazil real, equivalent to US$ 85,946.00 considering the Rotary dollar of R$ 3.77 in August 2018).

10. Budget

Sources of Financing	Contribution US$	TOTAL (US$)
Local Partner - Rotary Club and Host District		
Rotary Club Brasília-Leste	600.00	600.00
District 4530 (DDF)	10,000.00	10,000.00
District Y (Brazil)	9,761.00	9,761.00
District X (Brazil)	9,762.00	9,762.00
Total (Local Contribution)		**30,123.00**
International Partner - Rotary Clubs and District		
International Clubs and District	13,000.00	13,000.00
Total (International Partners Contribution)		**13,000.00**
World Fund		
Rotary Foundation	42,823.00	42,823.00
TOTAL (US$)		**85,946.00**

Observation: The Host Rotary Club will contribute with an additional value of $100.00 to cover processing fees (5%).

11. Main Local Contacts

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CONTEXT

1. Understanding the Exam and Proposed Equipment (Nasopharyngoscope)

The fiberoptic nasopharyngoscopyis an endoscopic exam which evaluates the nasal internal surfaceproviding clearvisualization and better access to the nasopharyngeal anatomy. This exam is indicated when clear visualization of the nasopharyngeal anatomy is needed for both diagnosis or treatment. In the nasal cavity, fiberoptic nasopharyngoscopy can visualize polyps, tumors, foreign bodies, or sources of epistaxis. Also, in the nasopharynx, the scope can help identify suspected tumors or adenoidal hypertrophy, as well as other obstructions and diseases of the respiratory tract (Chong, 2016).

This exam can be effectively performedby using a portable device callednasopharyngoscope. The nasopharyngoscope is an equipment made up of a flexible tube which allows the passage of an optical fiberin its interior. This optical fiber carry at its end a camera capable of seeing and transmitting images from inside the nasopharyngeal cavity to a video monitor, a record unit and/or an image printer (CMEDN, n.d).

Modern fiberoptic nasopharyngoscopes are portable and have very light weight. They are flexible with a 2-way articulation, providing inline viewing with photo and video capabilities, and can have a distal diameter as small as 2 mm (Chong, 2016).

2. The Multidisciplinary Service for the Treatment of Cleft Lip and Palate Fissures

The Multidisciplinary Service for the Treatment of Cleft Lip and Palate Fissures – MSTLPF - is a Sector inside the Regional Hospital of Asa Norte – HRAN (Brasília) created in March 11, 2013 aspart of the health system of the Federal District. Allpersonnel are hired by the public sector and the services are provided totally free of charges to the public. Since its creation, theMSTLPF is a referral health serviceon the treatment of labial-palatal fissures in the country, especially in the center-west region and surroundings of the Federal District.

In this multidisciplinary service, patients are assisted by an interdisciplinary team, currently composed by: four plastic surgeons, one craniomaxillofacial surgeon, one otolaryngologist, two speech therapists, one pediatrician, one nutritionist, one nurse, two orthodontists, one pediatric dentist, one dental surgeon, one geneticist and one psychologist.

The main objective of the MSTLPF is to support aesthetic and functional rehabilitation, as well as the reintegration of patients with cleft lip and palate into society. They also aim to provide a complete structure of care with all areas related to the rehabilitation process, involving not only the clinical area, but also the areas of speech, psychological, social and educational.

Demand for Medical Support - Needs Assessment

The interdisciplinary team provide care for about 280 (two hundred and eighty) patients per month, responding to more than 2,000 (two thousand) patients per year. Of these, 240 (two hundred and fourth) patients are attended monthly by the speech therapy team. The interdisciplinary surgery team performs around 150 (one hundred and fifty) surgeries per year. However,there are many patients in the waiting list. The number of surgeriescould be higher if there were available technology supporting quick follow up by the medical team, as well as more surgical rooms and anesthesiology teams.

Currently, there are about eighty (120) patients awaiting surgery, both primary labial and palate surgeries, second time surgeries, bone grafts, and rhinoplasty. Also, there are about one hundred (150) patients waiting for orthodontic treatment, not to mention thein fant patients who normally need to be followed throughout their lives until the final stage of growth. The nasopharyngoscope allow for an easy long-term follow up, with the ability to speed up the diagnostic process, enhancing the provision of health assistance to the community, helping in preventing and treating diseases.

Process - Medical Care for Patients withCleft Lipand Palate Fissures

Any patient who seeks the support of the MSTLPF will receive an interdisciplinary evaluation with the presence of a plastic surgeon, an orthodontist, a speech therapist and a psychologist. Those specialists will analyze the case and outline the therapeutic plan for the patient. It is recorded the incidence of 3 to 5 new cases per week.

The videonasofibroscopy is a complementary exam that can assist in the preoperative preparation of the patient with cleft lip and palate fissures, as well as during the postoperative period. The exam can help the interdisciplinary team to evaluate the adequate treatment to be provided, follow up the healing process, as well as support the speech therapy treatment. The videonasofibroscopyalso helpsin emergency cases as it is proper to assess the patient's airway, seeking diagnosis of nasal obstruction and possible chronic infectious conditions such as otitis and rhinosinusitis.

An attempt to quantify the number of patients which requires follow-up with the nasopharyngoscope shows that all patients undergoing routine otolaryngology evaluation, as well as pre and post-operative patients can benefit from this treatment. Therefore, it is estimated that the devicewill improve medical treatment to all patients who are undergoing preoperative and postoperative follow-up, to approximately 550 patients undergoing surgery and/or awaiting surgeries, and those under routine speech-language therapy, which account for 240 people per month.

THE PROJECT

The project entails the acquisition of a Karl Storz Nasopharyngoscope and imaging set,to be provided to the Brazilian Association of Fissured Patients Support– ABRAFIS. The equipment is

of utmost importance for all patients who are undergoing treatment with the MSTLPF. Thisincludespatient'spost-operation, in speech therapy and orthodontic treatment, as well as all other patientsinweekly or monthly monitoring programs. Today, the Regional Hospital of Asa Norte, a member of the Health System of the Federal Districtdoes not have this equipment, potentially compromisingeffectiveness in health treatment and prevention of diseases.

Karl Storz Nasopharyngoscope and Imaging Set

This project verified the need for a set with five devices described below:

a. **A portable video system, which is an integrated endoscopy unit containing in a single device: a video monitor, an image processor for micro-camera or video endoscope connection, and a light source.** The portable video system should contain:
   - LCD Video Monitor with a minimum of 15 inches;
   - Light Source with LED illumination similar to power LED 175, with color temperature of at least 6,000 Kelvin and service life of at least 30,000hours.
   - It should allow for examination through Stroboscope, with an optional for Stroboscopywith pedal and microphone connection.
   - It must accept 1 CCF micro-camera connection and 450 lines of horizontal resolution, with integrated system for capturing photos and videos through USB Devices or SD memory cards, where this system should also link the image files to the name of the patient and data.
   - Should include a keyboard and USB for data entry.
   - Video Outputs: DVI-D.
   - Video Input DVI-D (PIP Possibility).
   - PDD head, 1 chip.
   - NTSC color system with horizontal resolution of 450 lines.
   - Minimum sensitivity: 3 lexus, sensor size: 1 ½ "chip.
   - 25mm focal length and 2 freely programmable control buttons for use with micro endoscope camera and accessories.

b. **A flexible pediatric endoscope D (3.5mm and other specifications).**The pediatric endoscope should contain:
   - Connection for pressure compensation.
   - Set for leak testing with pear and panometer.
   - Case.

c. **A flexible neonate endoscope D + (2.5mm and other specifications).**The neonate endoscope should contain:
   - Connection for pressure compensation.
   - Set for leak testing with pear and panometer.
   - Case.

d. **One rigid endoscope AV (0 ° and other specifications).**The rigid endoscope should be autoclavable, containing:
   - Advanced opticsystem with stick-shaped lenses, resulting in images with excellent resolution and contrast.

- Fiber optic light transmission incorporated with adapters for connection to different fiber optic cables and eyepiece with universal fit.

e. **One rigid endoscope AV (30 ° and other specifications).**The rigid endoscope should be autoclavable, containing:
   - Advanced opticsystem with stick-shaped lenses, resulting in images with excellent resolution and contrast.
   - Fiber optic light transmission incorporated with adapters for connection to different fiber optic cables and eyepiece with universal fit.

Benefits

The advantage of this particular set of equipment is itsportability, allowing the use not only in surgical centers and medical facilities, but also in ambulatory care and anywhere the interdisciplinary team travels for evaluations and other necessary follow-ups, as well as in the treatment of patients duringawareness campaigns to prevent and treatcleft lip and palate fissures. Since the aforementioned service provided by the Regional Hospital of Asa Norte and its interdisciplinary team is highly specialized in this type of treatment, being considered a referral hospital in the central west region, the acquisition of this equipment can support the provision of qualitative health treatment, achieving remote areas and needed patients.

Another advantage in terms of use, conservation,durability and accountability for these devices is that they will be used only by members of the Multidisciplinary Service Team for the treatment of patients with cleft lip and palate fissure, and no other types of pathology.

Costs

The cost of all specified equipment is estimated in R$ 324,060.00 according to the budget provided by the companyH. StrattnerLtda (budget dated January 2018), located at:Av. das Águias, n° 228 – Cidade Universitária Pedra Branca – Palhoça – Santa Catarina - SC, Brazil, zip code: 88137-280. National Registration (CNPJ) n ° 33.250.713/0002-43, State Registration No. 255.588.283, telephone: +55 613323-1858, website: Strattner BR. They have an office in Brasília – DF, and the main contact is Ms. Natalia or Mr. Leones, Managers of their Center West branch.

The cost also includes: training in handling, cleaning,sterilizationand overall material care. They provide warranty for 12 months against any manufacturing defect (according insurance policy available at: Strattner Insurance). Also, they provide permanent technical assistance. The delivery time is about 30 days after order confirmation.

The company H. StrattnerLtda has a certificate of exclusive representation of Karl Storz - Endoskope products in Brazil, which has its factory located in Germany, according documentation in annex, dated of october 24, 2017. They are also the only reseller authorized to provide technical assistance, warranty, maintenance and repairs on products from Karl Storz - Endoskope, through its technicians, trained and qualified in the Karl Storz factory.

This chosen company also has a certificate issued by ABIMED - Brazilian Association of the High Technology Products for Health, located in São Paulo - SP, regarding their exclusive representation of Karl Storz products in Brazil, according attached document.

This amount converted to the Rotary Dollar in August 2018 (1 US$ = 3.77 R$), correspond toUS$ 85,946.00 Rotary dollars, and is therefore within the range of the Rotary Foundation's Global Grant request (range of $ 30,000 to $ 200,000 Rotary dollars).

Brasília-DF– August, 2, 2018.

Leonel Gonçalves Pereira Neto
President 2018-2019 of the Rotary Club of Brasilia-Leste

REFERENCE

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Chong, Ian Dennis. (February 5, 2016). Fiberoptic Nasopharyngoscopy. Available at: https://emedicine.medscape.com/article/149703-overview

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