

JAÚ ROTARY CLUB BRAZIL – DISTRICT 4480

PROJECT:

Faces: Facial prosthetics with 3D printing



PROJECT SUMMARY:

RATIONALE, PARTNERS, BENEFICIARY, COSTS

This project aims to speed up restoring quality of life to SUS patients who have no palate, or no ear, or no nose, or no eye by making facial prosthetics with 3D printing in a cancer treatment hospital.

SUS patients are patients who depend on the Brazilian federal public health system (called SUS) for medical care, having no financial means for paying for private health care providers.

The Jau-Leste Rotary Club arranged the partnerships for implementing the procedure (software, training professionals, technical consultants, etc) but seeks funds for purchasing the equipment for the hospital.

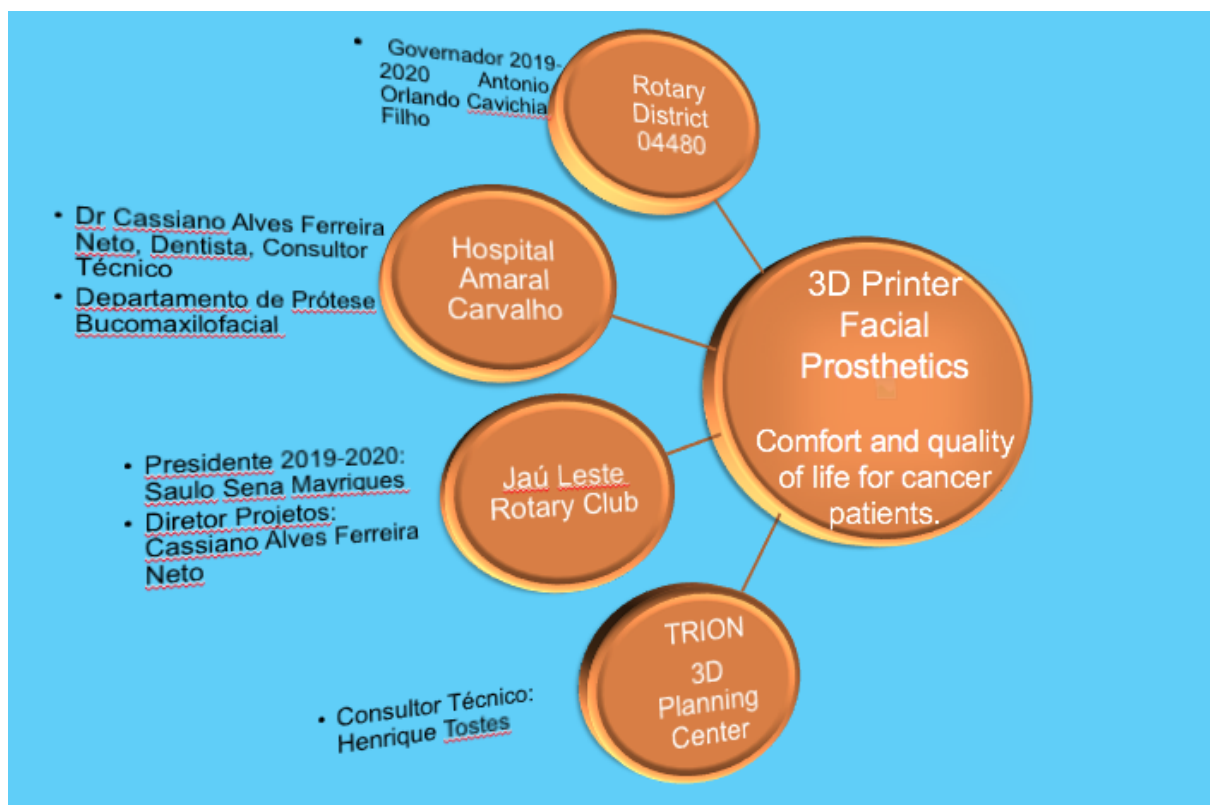
Hospital Amaral Carvalho, a philanthropic hospital which already has a facial prosthetic lab, would benefit by saving costs and by being able to treat more patients. The patients would benefit by diminishing the waiting time to get a facial prosthesis.

Oral and Facial Rehabilitation is an important service not only from a technical point of view but above all, from the human and social point of view: this service allows the patient to return to their basic functions of feeding, phonation and swallowing with the oral rehabilitation and allows the reintegration to human and social contact with facial rehabilitation – and that is why it needs to happen in a speedy way.


THE IMPORTANCE OF SPEEDY ORAL AND FACIAL REHABILITATION

- Without the palate or part of it, speech becomes difficult to understand, food / liquids flow out through the nose, the patient starts feeding with a naso-gastric tube and ends up thinning and weakening.
- Without the nose or part of it, the patient breathes but the aesthetics of the face makes it difficult or impossible to socialize or to wear glasses.
- Without the ear the patient continues to listen, but the aesthetics of the face make it difficult or impossible for social interaction or to wear glasses.
- Without an eye, without an eyelid, the aesthetics of the face make it difficult or impossible for social interaction

THE PARTNERSHIPS:



PARTNER and BENEFICIARY: Amaral Carvalho Hospital



102 years
102 ANOS
HISTORY AND TRADITION

HAC has the mission of promoting health, well-being and knowledge; with technology, competence, ethics and, above it all, care humanization in treatment.

HAC is a reference in:

Bone marrow transplants

High complexity surgical processes

Diagnosis Center

Clinical and Chirurgical Oncology

Hematology

Nuclear Clinical Center

HAC – Hospital Amaral Carvalho

- ▶ Medical centers for each reference specialty.
- ▶ Hi-tech medical instruments
- ▶ Public and private health assistance
- ▶ Humanized treatment.

PARTNER:



- ◆ Planejamento Virtual para Cirurgia Ortognática
- ◆ Planejamento 3D para Cirurgia Guiada de implantes dentários
- ◆ Centro de impressão 3D
- ◆ Cursos, Treinamentos e Consultoria em softwares de modelagem e impressão 3D



TRION
3D PLANNING CENTER

BENEFITS:

THE TRADITIONAL WAY OF PROSTHESIS MANUFACTURING – 8 consultations

- Patient evaluation and consultation
- Molding
- Preparation of the working model
- Preparing the sculpture for the proof
- Testing the sculpture
- Form fitting for the final piece
- Characterization (“make-up”)
- Finalizing e fitting on the patient

How this process would happen with 3D printing – 3 consultations

- Patient evaluation and consultation
- Photogrammetry (or scanning) of the patient in Dentist lab at HAC, using a cel phone
- **Send photogrammetry file from cel phone to printer technician for processing (same day)**
- **3D print the prosthesis model in Dentist lab at HAC (same day)**
- **Form fitting of the model (same day)**
- Finalizing and characterization (make-up) of the prosthesis

Benefits of this Project for the Patient

- ✓ Decrease of the patient's permanence time in the hospital
- ✓ Less travel times for consultations (some patients travel hundreds of kilometers each time)
- ✓ Improved adaptation of prosthetics due to the accuracy of photogrammetry and 3D printer
- ✓ Decrease of the time between the first consultation and delivery of the prosthesis - from 8 to 3 weeks
- ✓ Increased patient satisfaction when receives a better fitted prosthesis
- ✓ Speedier physical and psychological recovery

Benefits of this Project for the partner Hospital

- ✓ Decrease of the patient's permanence time in the hospital
- ✓ Decrease consultation bureaucracy and paperwork (3 consultations instead of 8)
- ✓ Possibility of at least doubling the number of patients treated annually,
- ✓ Increase of the perceived and aggregated value of HAC and its services

Benefits of this Project for the Rotary Club

- ✓ Raising awareness of the Club to a great number of people (patients and their relatives, employees, autonomous and liberal professionals, hospital's fundraising events) in the city and region, enabling:
 - More members for the District clubs
 - More free advertisement for Rotary Club
 - Increases public receptivity of the Club
 - Reinforces and improves local Rotary Club image and presence
- ✓ Increasing the perceived and aggregate value of Rotary Club in the city and region, increasing people's awareness toward the entity.

INVESTMENTS:

Scanning and design: scanning booth, software, computer



Prosthetics manufacturing: 3D printers, resins, printer maintenance kit, curing oven:



Labflo UV® 70W - Modelo para resina 3D

O Forno Fotopolimerizador *LabFlo UV Grande*, possui um modelo desenvolvido especificamente para realizar a polimerização de **Resina Fotopolímero de Impressão 3d - SLA 405nm UV**, de maneira controlada por temporizador.

Características do Produto:

Alimentação Bivolt;
Potência **70W**;
Temporizador pré determinado;
Dimensões: L 350mm x P 120mm x A 170mm.



Item	R\$ (Brazilian currency)	US\$ (obs 1)
Facial Scanning Booth dOne3D	33,000.00	8,396.95
Acer NITRO 5 (i7) Notebook	7,000.00	1,781.17
FlashForge Hunter 3D Printer	40,000.00	10,178.12
Resins / Supplies for FlashForge Hunter	8,000.00	2,035.62
FlashForge Guider II 3D Printer	12,000.00	3,053.44
FDM Filaments / Supplies	4,000.00	1,017.81
Formlabs Cleaning and Finishing Kit	1,500.00	381.68
UV Curing Oven Labflo	2,000.00	508.91
Training and implementation TRION (obs 2)	12,000.00	3,053.44
Reserve for exchange rate	2,000.00	508.91
Total Cost of the FACES Project	121,500.00	30,916.03

obs 1: may/03/2019 exchange rate: R\$3.93

obs 2: R\$12,000.00 Training break down:

<i>Air transportation (Brasília/Jaú)</i>	<i>3,000.00</i>	<i>763.36</i>
<i>Lodging (Brasília/Jaú)</i>	<i>1,000.00</i>	<i>254.45</i>
<i>Technical/Technological Consulting and Training</i>	<i>8,000.00</i>	<i>2,035.62</i>

CONTACTS:

- **Governador Rotary District 04480** – Antonio Orlando Cavichia Filho
- **Assistente do Governador:** Veidson Marcelo Gonçalves
- **Presidente R.C. Jahu-Leste** – Saulo Sena Mayriques
- **Technical Consultant** – fellow Dr. Cassiano Alves Ferreira Neto, Dentist responsible for the Facial and Dental Prosthesis of Amaral Carvalho Hospital, in Jaú, SP, Brazil (CROSP 21985)
- **Technological Consultant** – Henrique Tostes, TRION 3D, CNPJ: 24.250.096/0001-04
Website: <https://trion3d.com.br/>, Phone: +55 61 9 9955-0777
Address: ÍON Escritórios Eficientes, SGAN Q601 Bloco H, Sala 1049 - Asa Norte, Brasília - DF, 70830-018
- **Amaral Carvalho Hospital** – Antonio Luis C. de Moraes Navarro,
Superintendent/President - Cristina Moro, Health Development Director,
– Rua Dona Silveria, 150 – 17210-080 Jau, SP – Brasil – CNPJ 50.753.755/0001-35