Pan American Association of Ophthalmology

Curso de Liderazgo

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Title of Project: Establishment and Implementation of a New Screening Law for Early Detection and Treatment of Neonatal Eye Disease in Costa Rica

Purpose: Costa Rica has a well-established Social Security System with multiple hospitals that serve the vast majority (>95%) of its population's medical needs.

Neonatal Screening programs for Cardiology, Hearing, Metabolic and, Immunodeficiency diseases exist in the Social Security system. There is no program for Neonatal Ophthalmic screening. It is critical that early detection and treatment of childhood ocular disease and avoidance of long-term blindness that such a program be implemented.

Methods: To better understand the need for neonatal ocular screening, a longitudinal retrospective study was performed. The study was between September 1, 2017, and August 31, 2019. It included 8681 or 94% of the 9233 live births in Costa Rica's CCSS hospitals. Children less than 32 weeks of gestation were excluded. Visual disabling pathology was found in more than 11% of newborns. This data was assembled and brought to the Legislative Assembly by the Costa Rican Society of Pediatrics, the Costa Rican Society of Ophthalmologists and, the Director of the National Hospital for children. The preliminary results have been published in (REOP-Vol VIII; N. 1, 2021).

A plan for approval of a new Costa Rican law - mandating the establishment of a neonatal ophthalmic screening program was studied.

The following components are necessary:

I. Organization of a network of qualified ophthalmologists familiar with pediatric eye diseases and their diagnosis and treatment.

II. Identification of the pediatricians working within the nurseries and NICU’s of the CCSS that will examine and refer appropriate children.

III. Establishment of a well-defined referral system between pediatricians, ophthalmologists, and administrative personnel to record and memorialize all data.

IV. Collection and disbursement of ophthalmic equipment necessary to examine and diagnose neonatal eye disease.

V. To establish a consistent protocol for screening of the infant's eye by the pediatrician -which includes the timing of the examination and criteria for the referral to an ophthalmologist.

VI. Education of all involved personnel.

VII. Commitment from the Social Security system to fund this program and help solicit support for this new law.

VIII. Collection and publication of all data from the first full year, from activation that includes the number of children diagnosed with eye disease, the percentage of each diagnosis and, breakdown of medical and surgical treatment needed.

Results: The final approval of this law-Ocular Screening of Newborns is presently being analyzed by the Costa Rican Legislative Assembly.
Once approved, it will be signed into law by the President of the country.

The education of CCSS nurseries and neonatal units is proceeding successfully. Presently 7 out of the 23 pediatric nurseries in the country have been educated and are ready to begin screening. Ongoing education by trained pediatricians continues in the remaining nurseries.

**Conclusions:** The enactment of this law in Costa Rica and the early diagnosis of newborn ocular pathology will help prevent permanent blindness and disability for many children. It is expected that the success of this program will help stimulate the formation of other national models throughout the world.
**Title of Project:** Incorporate the use of NEO2 Blend in the NICU to reduce de risk of ROP

**Purpose:** Reduce the percentage of premature infants with advance stages of ROP in the Dominican Republic by introducing oxygen mixers with compressed air at the NICU.

**Methods:** An O2 mixer (NEO2 Blend) was placed at five nursery stations set to saturate 89-94%. Proper use was monitored after at each shift change by the head of the service. A note was written with the desired ranges at board near the patient’s bed to remember the correct numbers and turned on the monitor alarm.

**Results:** A total of ninety-three premature infants were evaluated by an ophthalmologist during the period of January 2019 – July 2021, out of which seventy-six premature infants were seen before and seventeen premature after the placement of the Blenders at the NICU. Twenty-three babies out of the seventy-six went to develop ROP and seventeen of them needed some type of ocular treatment. In the group of seventeen premature infants seen after introduced the blenders three developed ROP and all of them needed treatment.

**Conclusions:** 30% of the preterm infants who received oxygen therapy before the use of the blenders developed ROP, while only 17% of the preterm infants who were managed with the blenders developed the pathology. We need to continue evaluating the incidence of premature infants that develop ROP and require treatment even while under the use of the Blenders, to obtain reliable data. As a consequence of the 2020 COVID-19 pandemic there was a significant reduction in the number of premature patients who attended consultation due to parental insecurity when attending a hospital and/or due to the poor education of the general population on the visual complications that ROP brings with it, thus reducing the importance of visiting the ophthalmologist.

**Spanish version abstract**

**Objetivo:** Reducir el porcentaje de prematuros con desarrollo de estadíos avanzados de retinopatía de la prematuridad en la República Dominicana y buscar mayor concientización en los pediatras neonatólogos y del personal, en general, que trabaja en las unidades de cuidados intensivos neonatales, introduciendo mezcladores de oxígeno con aire comprimido para los prematuros que necesiten oxigenoterapia.

**Método:** Se colocó un mezclador de O2 (NEO2 Blend) en cinco estaciones de cuneros y se administró oxígeno diluido con aire en un rango de 89-94 % a cada prematuro que demandara oxigenoterapia. Se mantuvo vigilancia del uso adecuado en cada cambio de turno por la jefa del servicio. Se colocaron carteles al lado de cada cama para recordar los valores deseados, además de activar la alarma del monitor cuando se traspasaran los parámetros. Se obtuvo la concentración de O2 al combinar los flujos de O2 y aire comprimido de acuerdo con la siguiente fórmula:

\[
\text{FiO2: Flujo de O2 (LPM) + 0,21 x Flujo de aire (LPM)}
\]

\[
\text{Flujo de aire (LPM) + Flujo de O2 (LPM)}
\]

Debido a que los mezcladores manufacturados eran muy costosos para la adquisición en nuestros hospitales, decidimos asesorarnos con los miembros del Grupo ROP de Argentina, quienes nos guiaron en el proceso con reuniones virtuales mensuales con todos los involucrados (oftalmólogos, pediatras neonatólogos, enfermeras y
asistentes) en la creación de mezcladores de tubo en Y, debido a que ellos, bajo la guía de la Dra. Alicia Benitez, han implementado el sistema en varios hospitales y es el objetivo del Ministerio de Salud argentino que se lleve a todos los hospitales del país. La Dra. Benitez fue jefa de la Unidad de Neonatología de la Maternidad Ramón Sardá, de Buenos Aires y asesora en la prevención de secuelas graves de la prematuridad en el ámbito del Ministerio de Salud de la Nación; además, nos acompañó en el proceso el Dr. Alejandro Dinerstein, jefe actual de la Unidad de Mediano y Alto Riesgo en Neonatología de la Maternidad Ramón Sardá. Decidimos iniciar con uno de los hospitales dominicanos, para evaluar la evolución y adecuación del sistema, a fin de luego poder expandirlo a las demás maternidades de la República Dominicana, en conjunto con las Sociedades de Neonatología y Oftalmología.

Criterios de Inclusión y Exclusión: Se incluyeron todos los prematuros que fueron ingresados al UCIN del Hospital Metropolitano de Santiago (HOMS) y que necesitaron el apoyo de oxígeno para respirar adecuadamente y que además fuera visto con el Departamento de Retina durante el periodo enero 2019 – julio 2021.

Se excluyeron los prematuros que ingresaron al UCIN y no fueron evaluados por un oftalmólogo del mismo centro hospitalario.

**Resultados**: Se evaluaron un total de 93 prematuros en el periodo enero 2019- julio 2021, de los cuales 76 prematuros fueron evaluados antes y 17 prematuros luego de la colocación de los blenders en la unidad de neonatología. De los 76 niños a los que se les administró O2 puro sin control estricto de los parámetros, 23 presentaron ROP y, de ellos, 17 recibieron tratamiento ocular por el retinólogo con antiangiogénicos, láser y/o cirugía, para una correlación en porcentaje de un 73 % de los niños que fueron diagnosticados con retinopatía que recibieron tratamiento. En el grupo de prematuros evaluados luego de la colocación de los mezcladores de O2 en la unidad, se enrolaron un total de 17 niños; 3 de ellos presentaron algún grado de retinopatía, recibiendo tratamiento los 3 casos.

**Conclusión**: Necesitamos seguir evaluando si los prematuros desarrollan o no ROP aún estando bajo oxigenoterapia con blenders y, al mismo tiempo, analizar la cantidad de niños tratados dicha patología para obtener datos fiables y así obtener una mejor calidad visual. Tuvimos como limitante la pandemia ocurrida durante el 2020, la cual redujo significativamente la cantidad de pacientes prematuros que asistieron a consulta por temor, de los padres, a asistir a centros hospitalarios y/o por el hecho de la poca educación de la población en general sobre las consecuencias visuales que trae consigo la retinopatía de la prematuridad, restándole así importancia a la visita al oftalmólogo.
Title of Project: Grupo de Mujeres en Oftalmología Chile

Dra. Rosa María Balcells  
Sociedad Chilena de Oftalmología  
Santiago, Chile

Purpose: The objective of this Project is to create an organization of female ophthalmologist in Chile, with the purpose to promote and support career advancement for women, create awareness of the disparity of opportunities in our field and to develop strategies to ensure that women ophthalmologists get the same opportunities to develop and achieve successful and satisfactory careers and with equal opportunities to get to leadership roles in our specialty.

Methods: The project involved the development of 3 areas:

1. Analyze and set a diagnosis about the gender disparity in our field in Chile, and to create awareness about this situation to colleges ophthalmologist (males and females).

2. The development of courses and activities in a systematic and standardized way that allow, through different professionals, the development of soft skills, such as effective communication, adequate presentations, self-validation and competitiveness, among others.

3. Finally development of networks that allow an environment that stimulates the growth and validation of the role of women in our academic and scientific work.

Results: To be able to define the situation of gender disparity in Chilean Ophthalmology, I have reviewed the statistics of leadership positions in Ophthalmology in Chile, to mention one among many data, there have been only 2 female presidents of the Chilean society of Ophthalmology with 36 Presidents to the date. I did a survey that showed that many women felt disparity in the opportunities in training, career development, and in achieving leadership roles. The survey also showed that younger colleagues felt less disparity in opportunities than the older group did.

Because of the Pandemic, the first in-person meeting of the Chilean women's ophthalmology chapter was postponed, taking the recommendation from the Curso mentors, I have changed it to an online meeting. It was a great success, 98 ophthalmologists were connected, there was a featured speaker, specialist in gender and female development. Part of the meeting was open to attendees to share their experiences, and vision about gender disparity. Many ladies were enthusiastic about sharing, we were short on time to be able to let everyone talk. The most valuable result of the meeting many colleges volunteered to become mentors of younger females colleagues. The next meeting is going to be held next month online, And We are included in the Chilean National Congress, to arrange a female short program for the first time this year in November.

I am a regional director of a developing world females ophthalmology organization, WOW, that is meant to be a worldwide network of female ophthalmologists to support each other in training, research, etc. looking forward to having some female residents from Chile been able to connect and do collaborative work, fellowships, etc.

Conclusions: This is an active project, in the early faces, and hopefully will remain active as long as there is gender inequity. I am looking forward to this group to grow, establish and help all female ophthalmologist in Chile to achieve their full potential breaking the glass ceilings that have kept us from developing at our best, allowing an evolution towards a more diverse and equitable space.
Title of Project: Standardize a Surgical Training Protocol to decrease the incidence of posterior capsule rupture with vitreous loss

**Purpose:** The main objective of the project is to standardize an enhanced surgical training protocol in other institutions affiliated to the Sociedad Panamericana de Retina y Vítreo (SPRV) and the University of Buenos Aires (UBA), with the purpose of providing a benefit to young surgeons of our society in their surgical training programs.

**Methods:** We published a study of our surgical training program in recognized Pan American ophthalmological journals. We have also presented our study and surgical training protocol at national and international meetings, demonstrating the benefits and better outcomes that we have obtained by standardizing our protocol during the surgical training of young surgeons.

Through the SPRV mail list and personal relationships, we made contact with surgical instructors and chiefs of surgery to review and improve our protocol. We invited them to be part of a Pan American collaborative training group with ideas and suggestions to improve the surgical training protocol further and standardized it systematically in most of the Pan American training programs. Upon review of the protocol, we sent the final version to surgical instructors and chiefs of surgery of the Pan American training group.

We have also standardized our enhanced surgical training protocol in other international institutions affiliated to the UBA and the SPRV.

**Results:** The final version of this surgical training protocol improved the outcomes of young ophthalmologists during their surgery learning curve, due to a lower incidence of posterior capsular rupture with vitreous loss. Consequently, we have also decreased the rate of secondary vitreoretinal complications associated such as endophthalmitis, retinal detachment, retinal tear, Irvine Gass syndrome and epiretinal membrane.

Annex 1: We have analyzed the records of 265 cases of phacoemulsification surgery performed by second and third year residents of our Institution affiliated to the University of Buenos Aires. We have evaluated and compared the rate of complications in phacoemulsification between the surgical cases from a group of residents trained before the systematic application of our surgical protocol in the technique of cataract surgery during their learning curve of phacoemulsification (academic years 2017 through 2018) with those from a group of residents who were trained with our enhanced surgical training protocol (academic year 2019). We have observed an incidence of posterior capsule rupture of 15% in the first group versus 4% in the group trained with our enhanced surgical protocol.

Annex 2: Enhanced Surgical Training Protocol:

Consists of always and systematically performing the following maneuvers during the phacoemulsification of the last nuclear fragment:

1) Remove the phaco handpiece from the anterior chamber to fill the capsular bag completely with viscoelastic under the last nuclear fragment.

2) Decrease all phacodynamics parameters settings: reduce 30% of ultrasound energy, 20% of vacuum and 20% of flow rate.

3) Increase 20 mmhg of the irrigation pressure by raising the height of the BSS bottle.
Finally, we have also observed that our rate of capsular rupture decreases during the irrigation/aspiration (I/A) of the cortex with the bimanual I/A technique compared to the unimanual I/A technique.

**Conclusions:** Prevention is the Best Medicine. The aim of preventive medicine is preventing the occurrence of a disease and averting resulting complications after its onset.

A statistically significant decrease in the incidence of posterior capsule rupture in cataract surgery and postoperative complications was observed when implementing a standardized surgical training protocol during the learning curve of young surgeons from Pan American surgical training programs.

The Pan American collaborative training group expressed the idea that increased regional participation and collaboration to update and develop a prospective and multicenter study for training surgical programs will be mutually reinforcing.
Title of Project: Does Diabetes Mellitus cause blindness?

Purpose: The purpose of this project is that through a national diffusion advertising campaign using as many communication resources as possible, all people who suffer from DM know about the ophthalmological consequences that they could suffer if they do not maintain adequate control in their blood glucose level and thus avoid blindness. If we succeed, we will reduce the number of blind people caused by cataract, glaucoma and diabetic retinopathy.

In El Salvador everyday hundreds of people are diagnosed with Diabetes Mellitus (DM). Most of them will develop blindness in a short or medium term if they are not treated early and timely. To avoid this, it is necessary that they receive the appropriate information about the consequences of this disease that could mark the rest of their lives, bringing with them psychological, familiar and economic problems.

Methods: El Salvador has a population of 6.4 million people and a territorial extension of 21 thousand square kilometers. To cover the entire country, it was sent and place printed advertisements with a short but accurate message, in all private and community ophthalmological clinics, as well as those belonging to foundations, public hospitals and social security. The main messages were:

1/ DIABETES CAN CAUSE BLINDNESS!
2/ IS IT TRUE THAT DIABETES CAUSES BLINDNESS?

Time and distance were obstacles that we had to overcome to visit distant clinics, as well as obtain the permission of the authorities of public institutions and foundations. To do this, we developed a work plan in association with the ASO team, pharmaceutical companies and ophthalmologist colleagues who work in their private clinics and public institutions.

The financing for the printing of banners was received from Laboratorio Sophia a pharmaceutical company as well as from the ASO's own funds. The radio and television interviews were arranged through journalists in charge of health sections in different media.

We use social media platforms to spread the message to different sectors of the population which made it easier to reach a larger population of different ages, even those who had never consulted with an ophthalmologist.

Results: We visited all the clinics around the country where an ophthalmologist works, both private and public, placing banners in each of them and giving talks to patients in the institutions that were visited.

We discussed the ophthalmologic consequences of people suffering from DM on major television channels and the nation's largest radio stations, through interviews with members of the ASO and its board of directors.

We opened pages on social networks, reaching more people with DM and their families, which were of great help in sharing the message nationally and internationally. Approximately 2 million Salvadorans live abroad and frequently travel to our country to treat their illnesses; they were a population that we reached by breaking the barriers of distance through social networks. More Information @Cegueraenladiabetes.

Conclusions: Diabetic patients and their families should know that DM causes blindness if it is not diagnosed and treated early.
Education to the population in a globalized world and with multiple tools can prevent millions of people from losing their vision as a result of cataract, glaucoma and diabetic retinopathy secondary to this disease that every day claims more victims.

The doctor's mission is not only to cure, but to prevent and educate.
**Dra. Thamar Gómez Villegas**  
*Sociedad Mexicana de Oftalmología*  
Ciudad De Mexico, Mexico

<table>
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<th>Title of Project:</th>
<th>Provision of short patient information “capsules” regarding the main ophthalmological conditions in México on the website of Mexican Society of Ophthalmology</th>
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**Purpose:**
Currently, many patients consult the Mexican Society of Ophthalmology website seeking information about eye conditions and there is no information available.

Providing educational capsules and useful ophthalmological information elaborated by Mexican experts in the field will give our patients practical and reliable information that is specific to Mexico.

The goal of this project is to contribute to the education of our patients through the website of the Mexican Society of Ophthalmology. In addition, we expect it will have a positive impact on the prevention of blindness and visual health of the Mexican population.

**Methods:**

1st Stage:
- I presented the project in a meeting with the current president of Mexican Society of Ophthalmology to discuss it.
- 32 capsules
- Carried out by different subspeciality groups
- Same format
- May include unpublished text, images, algorithms, schemes
- Clear language for patient
- Not to promote people, institutions or companies

After this reunion we decided to launch only 20 capsules and I sent to each president of each subspeciality group the requirements for the capsules and the objectives of this project.

2nd Stage:
- Each president of every subspeciality group delegated to some recognized members (didactic committed people) the production of the capsules.
- During the pandemic our project was interrupted because the Mexican Society of Ophthalmology had other priorities.
- At this time, the convenience of the project was questioned by the Mexican Society of Ophthalmology since its statutes do not contemplate general public education as part of its functions.
- Despite the foregoing, we continued working with the high subspeciality groups and finally I received the capsules.
- One month ago, I received from the current president of the Mexican Society of Ophthalmology the authorization to continue working.
Our material will be presented in the next council meeting of the board of The Mexican Society of Ophthalmology, on September 14, 2021.

3rd Stage:
After this last approval, trained personnel of The Mexican Society of Ophthalmology will upload the material on the website.

4th Stage:
Each January: Review and update of the material in charge of each of the high-specialty president on duty

**Results:** One month ago, I received from the current president of the Mexican Society of Ophthalmology the authorization to continue working.

Our material will be presented in the next council meeting of the board of The Mexican Society of Ophthalmology, on September 14, 2021.

After this last approval, trained personnel of The Mexican Society of Ophthalmology will upload the material on the website.

Each January: Review and update of the material in charge of each of the high-specialty president on duty

**Conclusions:** This Project will represent the beginning of a new mission for the Mexican Society of Ophthalmology: patient education, something crucial for our practice as much as for the benefit of public health. From this Project, other initiatives have arisen to contribute to the visual health of the Mexican population.

This Project has also allowed me to overcome previous technical barriers and to develop ways to convince authorities and many other groups of interest. In the end this Project will be achieved thanks to the contribution of not only of council board of The Mexican Society of Ophthalmology, but also to the work of each group of subspeciality in charge.

These capsules will be updated and perfected annually and can be modified according to needs.

A sample of the capsules is attached below.
CÁPSULAS INFORMATIVAS

PARA INFORMACIÓN ADICIONAL O ACLARAR DUDAS DEBE CONSULTAR A SU MEDICO OFTALMOLOGO DE CONFIANZA

Orbita, Párpados y Vías Lagrimales
ALTERACIONES PALPEBRALES

Las más frecuentes son: ptosis, entropión y ectropión.

La *ptosis palpebral* es la caída de los párpados. Las dos principales son: *ptosis congénita* (en niños) presente desde el nacimiento y se debe a una falla en el desarrollo del músculo elevador del párpado; puede ser en uno o ambos párpados (figura 1).

![Figura 1. Paciente con ptosis congénita derecha.](image)

Cuando la caída del párpado invade la totalidad de la pupila: *ptosis severa* (figura 2 a) causa disminución en el desarrollo de la visión del ojo, generando ambliopía “ojo flojo”. El tratamiento es quirúrgico para evitar alteraciones en la visión (figura 2 b)

![Figura 2 a. Ptosis derecha que invade parcialmente la pupila.](image)

![Figura 2 b. Ptosis corregida quirúrgicamente, libera la pupila.](image)
La **ptosis senil** inducida por el envejecimiento, el músculo elevador es normal pero se hace laxo o se despega de su sitio. Se observa en gente mayor y generalmente es bilateral. El tratamiento es quirúrgico (figura 3).

![Figura 3. Ptosis bilateral asimétrica, en una paciente adulta.](image)

El **entropión**, es la inversión del margen palpebral y pestañas, haciendo que estén en contacto con el ojo (figura 4).

![Figura 4. Inversión palpebral y pestañas, que están en contacto con el ojo](image)

Causa sensación de cuerpo extraño, secreción e irritación de la conjuntiva y córnea. Existen diferentes tipos: congénito, senil, espástico y cicatrizal en la conjuntiva. El **senil** ocasionado por laxitud de los tejidos del párpado y desinserción de los músculos retractores. El tratamiento es quirúrgico (figura 5).

![Figura 5. Entropión derecho, corregido quirúrgicamente.](image)
En el ectropión el margen palpebral gira hacia afuera y se aleja del globo ocular (figura 6).


Bibliografía:
Salcedo, CG: Ptosis palpebral, Diagnóstico y Tratamiento. Ed 1era 1995
Project Abstract

Dr. Marcelo Gonzalo Murillo Sasamoto  
Sociedad Boliviana de Oftalmología  
La Paz, Bolivia

<table>
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<th>Title of Project:</th>
<th>The develop of a framework Academic Platform for young ophthalmologists inner Bolivia and LATAM</th>
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**Purpose:** During pandemic times the difficulty of meeting among colleagues, carrying out sustainable projects in populations at risk with a certain pathology in ophthalmology were practically difficult to carry out. Different types of academic ideas were established to engage and interact with different young societies and to be able to carry out continuing medical education activities.

**Methods:** A dynamic and interactive virtual reality will be investigated in an educational academic scenario where the purpose will be the utility generated by using a virtual platform with didactic resources in the different specialties of ophthalmology.

It will be a descriptive/qualitative study.

**Results:** During the month of April 2020 in the middle of the pandemic, two platforms were created:

1) LATAM Ophthalmology League: where to date twelve meetings have been created via zoom platform, inviting the different young ophthalmological societies of Latin America and the rest of the world. Sharing medical and surgical experiences, updates on different ocular pathologies and creating work/personal links between the different members of societies. This type of multidisciplinary networking allowed to break the barrier and limitations of young societies among themselves.

2) Young Bolivian ophthalmologists- JOB; till the date twenty-one webinars were held with the aim of integrating and encouraging new young Bolivian ophthalmologists to enter to debate, exchange experiences, present clinical and surgical cases, networking with members of their own country and Latin America.

It is a clearing platform so that the young ophthalmologist is not limited to the knowledge learned during his residency or sub-specialization, but rather that he can continue in a current continuous medical education.

**Conclusions:** Both platforms (LATAM Ophthalmology League / Young Bolivian ophthalmologists- JOB) worked and operate on a monthly basis actively, becoming platforms known by young ophthalmologists and their societies; training the new members of these groups to continue with the virtual legacy for the following generations.

https://www.instagram.com/latam.ophthalmology.league/  
https://www.instagram.com/jobolivianos/
Dr. Daniel Horacio Sabella  
Consejo Argentino de Oftalmología  
Mar Del Plata, Argentina

<table>
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<th><strong>Title of Project:</strong></th>
<th>Create a Development and Innovation Commission within Argentine Council of Ophthalmology</th>
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**Purpose:** For an Idea to be materialized It needs an appropriate environment.  
Precisely…… My project, is about creating that environment, where ideas can became an innovative product  
Precisely…… My project, is about creating that environment, where ideas can became an innovative product.  

**Methods:** The commission workflow is:  
Receive disruptive scientific knowledge projects with high innovative impact  
Analyse the viability  
- Make connections  
- Provide a guideline to work  
- Give help in IP (intelectual propriety)  
- Search for financial support  

**Results:** Our projects:  
1- 3-D printed intraocular implants. We are getting low-cost prototypes of Intra Ocular Device, thanks to the 3-D printers.  
2- Telemedicine online platform customized for ophthalmologists.  
We are decreasing spread of COVID-19 with this type of consultations.  
3- Dry sterilization Unit with Chlorine Dioxide  
We are sterilizing surgical gowns, hats and chinstraps that we need to use in each patient, in the COVID-19 Pandemic.  
This innovative Method is Safe, Eco Friendly, Low-Cost and extremely more effective than ethylene oxide.  

**Conclusions:** I discovered that we are all very Creative. However our Ideas die very soon, because there aren’t the necessary means to take ideas to reality. This Commission works as a bridge between creative idea and innovative project.
Title of Project: PECIR - Programa de estudos de córnea e cirurgia implanto-refractiva -
(Corneal and implant-refractive surgery study program)

Purpose: The purpose was to facilitate access to training in the area of Corneal and Implant-refractive surgery, through the availability of web-based theoretical content complemented with small on-site internships in recognized centers.

Methods: Program
Hybrid program (face-to-face/web-based), self paced introduction to corneal surgery and implant-refractive surgery.

28 themes (14 corneal surgery and 14 refractive surgery), renewable annually, chosen by an editorial board (expert commentators chosen for the different themes).

The themes are delivered in the form of a weekly webinar, which will later be available on an online platform (under password-controlled access) and can be reviewed at an opportune time.

The face-to-face modules are of two types: observational in corneal surgery and observational in refractive surgery. Ideally lasting 3 days, they include observation of cases in the preoperative period, follow-up of surgeries and observation of the postoperative period the following day. Whenever possible, schedule patients with longer post-surgery time on the first or third day. Before and after clinical practice, short briefings draw attention to clinical procedures and cases. (2 participants p/center/module)

Target
Ophthalmology residents and specialists interested in learning about corneal and implant-refractive surgery.

The theoretical modules have a broader target: specialists in ophthalmology from all areas who want to have contact or deepen knowledge in different topics.

The theoretical modules are taught in Portuguese so they can easily be a scientific dissemination mechanism among the Portuguese-speaking community.

The face-to-face modules (to take place during the year between the volunteer and selected centers) must last 3 days and integrate 2 (3 max) participants per module. These are particularly aimed at all residents of ophthalmology in order to standardize opportunities for contact and learning in the areas under consideration.

Results: This project was planned at a stage in which the possibility of a COVID pandemic emerging was not imagined. Its development was partial only because the pandemic prevented part of its execution from being carried out.

The preparation of the project was done in 2019 but during 2020, and due to the emergence of the pandemic, its execution was subject to adaptation changes. The project is a national project designed for our country and developed by the Portuguese Society of Ophthalmology. Due to its characteristics, this project is easily replicable in other PAAO member countries.

We had the possibility of doing 10 theoretical sessions and counting on the presence of national and international speakers of excellence. The themes were broadcast live via webinar and were available online for consultation.
They can be consulted at www.ocular-surface.org under restricted access to login (user: Luis Torrao pass: Thealozduo).

It was not possible to develop on-site internships due to constraints caused by the COVID-19 pandemic (restricted access to hospital units).

**Conclusions:** Digital transformation as a top trend in global education. The program responded to educational needs in a simplified way. It allowed ophthalmology residents to expand knowledge area into otherwise less accessible areas. The program would be completed with small on-site internships. These would permit early programming and greater profitability of experience. Hybrid educational models will make learning more profitable than conventional models. The intention is not to replace direct contact; this is fundamental for learning hard and soft skill. The COVID pandemic only accelerated the process of digital transformation while making even clearer the fundamental value of medicine: humanization.
PECIR
Programa de estudos de córnea e cirurgia implanto-refractiva
(Corneal and implant-refractive surgery study program)
Introduction

This project was planned at a stage in which the possibility of a COVID pandemic emerging was not imagined. Its development was partial only because the pandemic prevented part of its execution from being carried out.

The preparation of the project was done in 2019 but during 2020, and due to the emergence of the pandemic, its execution was subject to adaptation changes. The project is a national project designed for our country and developed by the Portuguese Society of Ophthalmology. Due to its characteristics, this project is easily replicable in other PAAO member countries.

The purpose was to facilitate access to training in the area of Corneal and Implant-refractive surgery, through the availability of web-based theoretical content complemented with small on-site internships in recognized centers. The sessions were in webinar format with the possibility of watching it on a deferred basis. These webinars were in the form of a master conference followed by a discussion with two invited experts in the area in question. Intervention times were between 30 and 45 minutes and with discussion did not exceed 1h 40 min.

We had the opportunity to cover several areas of Corneal and Implant-Refractive Surgery. The themes were chosen and presented via email and social networks a week in advance.

Refractive Surgery and Corneal Surgery

Corneal and implant-refractive surgery are part of the mandatory curriculum of Ophthalmology internships. Medical internships in Portugal are, for the time being, the exclusive responsibility of public hospitals upon approval of the specialty college of the Portuguese Medical Association.

Most Portuguese hospitals do not have corneal surgery, particularly they do not have corneal transplants. Hospitals that perform refractive surgery and excimer laser equipment are rare and there are only few training centers. A large number of ophthalmologists trained in Portugal are unable to come into contact with this type of surgery and their routines during the Internship.

Specialist training

Although the areas of corneal and implant-refractive surgery are part of the mandatory curricula, it is common for a considerable number of candidates to have little contact with the areas. Examination jurists, aware of the complexity of providing equal contact opportunities for different candidates, understandably accept these types of training limitations.

Candidates seek, in turn, to fill these training gaps with observation internships that they request from reference centers where these techniques are carried out. Its acceptance often depends on close relationships between training centers or supervisors.
The opportunity

- Physicians in specific training are classically a class eager for scientific and technical knowledge motivated by learning opportunities.
- Currently, doctors in training have to travel to reference centers autonomously and in an unrecognized or certified way. Often to centers abroad with expenses and personal constraints.
- The possibility of participating in a program with other training colleagues in an organized and recognized way increases the level of involvement and motivation.
- The professional ties created with the centers in the country will make it easier to pursue professional ties or refer cases in the future.

Interns in training

Educational institutions

- Participation in training programs will allow institutions to promote their practices beyond the institution.
- The Institution, through the process of organizing a short-term program, will have an excellent opportunity to review procedures and improve routines.
- Participation in an organized and trans-institutional training program in Ophthalmology may promote interest in participating in other programs in other specialties.
- The entry of professionals from other institutions may be an opportunity to absorb practices and knowledge that they bring to the institution.
- Increases and promotes institutional networking.

Experts

- The teaching of subsequent generations is part of the professional medical activity; professional achievement will be complete with the 3 strands: clinical practice, research, teaching.
- Participating in and organizing the educational program will allow experts to review cases and procedures and optimize their clinical practice.
- Sharing experiences with colleagues from other institutions will be an opportunity to gather insights and different work methodologies - Reverse mentoring.
- Increase professional networking and strengthen ties with colleagues from other institutions.

Professional improvement

Institutional improvement

Professional mission
**Program**

- Hybrid program (face-to-face/web-based), self paced introduction to corneal surgery and implant-refractive surgery.
- 28 themes (14 corneal surgery and 14 refractive surgery), renewable annually, chosen by an editorial board (expert commentators chosen for the different themes).
- The themes are delivered in the form of a weekly webinar, which will later be available on an online platform (under password-controlled access) and can be reviewed at an opportune time.
- The face-to-face modules are of two types: observational in corneal surgery and observational in refractive surgery. Ideally lasting 3 days, they include observation of cases in the preoperative period, follow-up of surgeries and observation of the postoperative period the following day. Whenever possible, schedule patients with longer post-surgery time on the first or third day. Before and after clinical practice, short briefings draw attention to clinical procedures and cases. (2 participants p/center/module)

**Target**

- Ophthalmology residents and specialists interested in learning about corneal and implant-refractive surgery.
- The theoretical modules have a broader target: specialists in ophthalmology from all areas who want to have contact or deepen knowledge in different topics.
- The theoretical modules are taught in Portuguese so they can easily be a scientific dissemination mechanism among the Portuguese-speaking community.
- The face-to-face modules (to take place during the year between the volunteer and selected centers) must last 3 days and integrate 2 (3 max) participants per module. These are particularly aimed at all residents of ophthalmology in order to standardize opportunities for contact and learning in the areas under consideration.
The traditional marketing plan seeks to identify the uncovered needs ("pains") and from there identify how the program is different from the "traditional" approach, creating reasons to believe in the success of the solution. Thus, leaving for an internship program in an external service was considered a traditional experience, and the approach of the program was considered as a hybrid online/in-person.

In the next phase, it characterizes the product and its "pricing" model (cost of use), as well as the product's communication channels and its distribution model (in this case, the way in which its two components are delivered to the participants).

The third phase of the marketing plan is to build the participant's experience and how they interact throughout the program. In the specific case, two different types of participants are considered: those who only access theoretical themes and those who, in addition, participate in face-to-face moments.

The evaluation of the educational experience was not considered in the marketing plan. As a program for the acquisition of highly specialized technical and scientific content, it will be interesting to evaluate the scientific and technical evolution related to the baseline moment. Additionally, analysis of the consolidation rates of those who have an exclusively theoretical experience vs those who participate in face-to-face internships could be considered.
Positioning

To: Ophthalmologists without age limit, interested in getting in touch with or deepening their knowledge with corneal and implant-refractive surgery.

Frame of Reference
- Maximum use of resources and time.
- Adequacy to training needs.
- Frequency of theoretical modules or theoretical and face-to-face modules.

Points of Difference
- No intention to assess knowledge or confer formal skills. (no evaluation module).
- Live vs on-demand learning. Self paced and self customized (if only a few modules are chosen).

Reasons to Believe.
- Speakers chosen among national / international reference top specialists.
- Accessibility, convenience, gratuity (tendentially).
- Digital transformation as a top trend in global education.
- Scientific and logistical support by recognized institutions.

Participant
- Response to educational needs in a simplified way.
- Flexibility adjusted to your professional/personal life.
- Expansion of knowledge area into otherwise less accessible areas.
- Difficulty in accessing specific training areas (Cornea, IR).
- Traditional observerships subject to acceptance and with personal/professional expenses and constraints.
- Heterogeneity of experiences and content in traditional programs.

Oriented Training - PECIR

Specialized Medical Education

Traditional model observership
- Greater economic and time expenditure.
- Non-uniform contents and experiences.
- Subject to approval and institutional/personal relationship items.
**Product/Program:** Adequacy to time and personal motivation

- **Characteristics:** Hybrid program (face-to-face/web-based), self-paced introduction to corneal surgery and implant-refractive surgery. 28 themes (14 corneal surgery and 14 refractive surgery), renewable annually, chosen by an editorial board (expert commentators chosen for the different themes).
- **Rational:** Digital transformation as a top trend in global education. Content available in the form of a platform that can be reviewed. Homogenization of themes/contents under the responsibility of an editorial board.

**Price:** Optimized resource utilization

- **Characteristics:** Free trending model. Freemium model to be considered (free access to theoretical content and possible symbolic fee for observerships).
- **Rational:** Pricing must be a tool for democratizing access. The fee (if any) seeks only to create a budget to support the program, but above all to commit participants when scheduling the internships on-site.

**Communication:** Personalized information

- **Characteristics:** The program should be publicized through an institutional channel (Portuguese Society of Ophthalmology), although it should use highly dispersed digital media (email, discussion groups, targeted social networks). The pharmaceutical industry partner of the program can be a communication channel.
- **Rational:** Promote among the national and international ophthalmological community. Keep the program's target-oriented focus.

**Distribution:** Easy program access

- **Characteristics:** Mostly web-based. Currently live content available in the form of a webinar. Possibility of reviewing deferred content. The content is hosted on a platform protected by access through credentials (free of charge provided access is approved by the platform manager).
- **Rational:** Make knowledge in the area accessible to as many ophthalmologists as possible. Thea laboratoires collaborated with the program by sponsoring technical support and web hosting.
Educational experience

**Experience:** The motivation to learn knowledge leads to enrollment in the program (1). The initial phase of the program will be the acquisition of introductory knowledge on the topics of corneal surgery and implant-refractive surgery. This moment can be the time to prepare for on-site observership moments or just the beginning of a customized program to deepen knowledge. (2),(5). On-site internships will ideally be 2 and will be at different times. One for refractive surgery and one for corneal surgery. Participants can do both, one or none of the on-site conferences. The moments of participation must occur at separate moments to facilitate the logistics of the training centers. (3),(4). During the program there are times when participants can choose to modify their entry into the on-site internships (or leave if they are not available to participate). So they can choose to participate eg only in one of the stages. (5),(6) Participation in person or only in web-based theoretical modules should converge in a final moment of summary and clinical application with presentation of complex cases and multi-factorial clinical evaluation.

Participants: full-participants and participants only for web content
Business Plan Overview

A traditional **business plan** considers more analysis items, however, as the program is not a business in its essential nature, only two fundamental analyzes were considered to assess its feasibility: the value proposition canvas and the business model canvas.

The **value proposition canvas** is a framework to ensure that there is a fit between the product and market. It is a detailed look at the relationship between two parts; participants (customer segments) and value propositions. The Value Proposition Canvas can be used when there is need to refine an existing product or service offering or where a new offering is being developed from scratch. The Value Proposition Canvas is formed around two building blocks – participant profile and the proposed value proposition.

The **Business model canvas** is a framework, divided into nine components that cover the four areas considered the main areas of a project, which are customers, supply, infrastructure and financial viability. It is common that adjustments and changes are made to the business model during its creation or remodeling, which is not a problem for the use of the tool. When considering the project, and taking into account that it is not a for-profit project, the valorization of its scientific component should not underestimate its viability and sustainability. Many projects of this nature end up not being developed because they have not taken this aspect into account.
Value Proposition Canvas

**Pains: Participants:** Difficult access to training in corneal and implant-refractive surgery. Cost and logistics for accessing internships at recognized training centres. Training programs are not homogeneous and sometimes do not cover all relevant topics. **SPO:** Lack of a training program in the area. Training centers: number of unpredictable internship requests, and difficult planning.

**Pain relievers:** Participants: Ease of access to a standardized but customizable program, cheap and homogeneous in its contents, seeking to be comprehensive. **SPO:** Thematic training program in the area of corneal surgery and implant-refractive surgery, free of charge and with a face-to-face module. Training centers: Possibility of receiving in an organized and planned way colleagues from other centers.

**Gains** Structured training and optimized utilization of national resources. Promotion of trainers and national training centers. Increased general knowledge in corneal surgery and implant-refractive surgery. Preparation of specialty inmates in this specific area. Possibility of establishing transversal partnerships between centers and the pharmaceutical and technological industry in a training program. Specific specialized educational experience with possible data analysis related to scientific and global increase of the class over the years.

**Gain creators:** Thematic webinars with presenters and commentators from different centers and recognized expertise in the area. Digital repository of themes so that they can be consulted on demand. Short-term internships at affiliated centers. Possibility of exchanging experiences between professionals from different centers. Possibility of establishing mentoring programs and reverse mentoring. Networking between national and international ophthalmologists.
The PECIR project was proposed and submitted before the COVID pandemic and, although the web-based part was partially developed, the face-to-face aspect was compromised by the need to reduce exposure to the risk of infection.

The identified needs ("pain"), lack of general access to basic training in implant-refractive surgery, motivated the creation of a mixed program with a theoretical and practical component.

The participant experience is easy to implement and replicate, and the necessary partners and resources are present and available.

The costs involved are low due to the general accessibility of the necessary resources. Sponsorship needs are low.

The pharmaceutical industry was available to participate. The financial investment was residual but their participation was essential for the project.

The possibility of charging a small fee to participants in the face-to-face part was considered, taking into account the growth of experience in the future with the involvement of simulators and/or wetlabs.

Medical education is a chain of knowledge transmission in which we are simultaneously receivers and transmitters. More than an obligation, it is a gesture of generosity that characterizes and ennobles the medical profession.
Acknowledgments

Participating in the leadership program promoted by PAAO was a very enriching experience both personally and professionally. It was a moment of reflection on the importance of maintaining ties between the different countries of the PAAO community; our needs, motivations and concerns are similar, but it is at the mission level that the harmony is complete: to seek excellence in the practice of our profession in all its aspects.

I want to thank all the members who make up the core of the course, represented by its directors: Zélia Correa and Peter Quiros. Your welcome allows SPO to continue to benefit from the PAAO community.

I would like to thank the board of the Portuguese Society of Ophthalmology for being appointed to this course. Their appointment was very encouraging and motivating. To my friend, and project supervisor, Luis Oliveira, coordinator of the CIRP in the previous years, a special hug, which more than a thank you, expresses the desire to maintain a close collaboration in the future.

Finally, a special thanks to Prof. Falcão-Reis, president of the former board of the Portuguese society of ophthalmology. His vote of confidence was for me an unprecedented moment of satisfaction in my career.
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**Title of Project:** National Teaching Guidelines for Glaucoma Fellowship Programs

**Purpose:** The Brazilian Society of Glaucoma (SBG) is developing teaching guidelines and minimum physical structure requirements for the glaucoma fellowship programs in Brazil. Services that meet the minimum requirements will receive a SBG quality seal. In this way, there will be a minimum homogeneity of education at a national level, raising the care quality. Better-trained specialists are critical in better fighting the disease.

**Methods:** Phases:
- Creation of a minimum curriculum for the fellowship
- Define minimum workload for the program
- Define theoretical and practical assessment model for students
- Define minimum ophthalmological procedures for subspecialist training
- Create a teaching platform with the CBO (Brazilian Council of Ophthalmology) with basic themes
- Create a research support platform (access to journals, classes on scientific methodology, etc.)
- Creation of the SBG quality seal for complying institutions

**Results:**
- minimum requirements under final review by the Brazilian glaucoma society (SBG)
- commitment to the project's continuity by the next two elected presidents of SBG
- basic themes and online class schedule for fellows being finalized with CBO support through CBO leadership project of Dr. Diego Torres
- the visitation of some institutions for reference sampling is still suspended due to the pandemic.

**Conclusions:** The creation of teaching guidelines will be a guide for the teaching of glaucoma in the country. It will support course and department coordinators, providing didactic guidance, study material and security in the delivery of content and medical care. For the population, there will be better trained professionals, with better diagnosis and adequate treatment skills regarding glaucoma, which is the biggest cause of irreversible blindness in the world.