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Sociedade Portuguesa de Oftalmologia  
Porto, Portugal

| 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.

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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-Refactive 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.

Professional improvement

Institutional improvement

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 mission
Program and Target

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.
- 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).

Points of Difference

- 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.

Reasons to Believe.

- Homogenization of themes/contents under the responsibility of an editorial board.
- Small on-site internships with early programming and greater profitability of experience.
- Content available in the form of a platform that can be reviewed at an appropriate time.
- Group Learning with the possibility of sharing motivation and experiences.
- Didactic content organization
- 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.

Tradicional model observership

Greater economic and time expenditure.
Non-uniform contents and experiences.
Subject to approval and institutional/personal relationship items.
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<thead>
<tr>
<th><strong>Product/Program:</strong> Adequacy to time and personal motivation</th>
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<td><strong>Characteristics:</strong> 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).</td>
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<th><strong>Price:</strong> Optimized resource utilization</th>
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<td><strong>Characteristics:</strong> Free trending model. Freemium model to be considered (free access to theoretical content and possible symbolic fee for observerships).</td>
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<td><strong>Rational:</strong> 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.</td>
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<th><strong>Communication:</strong> Personalized information</th>
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<td><strong>Characteristics:</strong> 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.</td>
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<td><strong>Rational:</strong> Promote among the national and international ophthalmological community. Keep the program's target-oriented focus.</td>
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<th><strong>Distribution:</strong> Easy program access</th>
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<td><strong>Characteristics:</strong> 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).</td>
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<td><strong>Rational:</strong> 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.</td>
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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.
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.
• **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 business model Canvas

Key Partners
- SPO: Portuguese Ophthalmology Society
- CIRP: Portuguese Cataract and Implant-Refractive Surgery Group
- PAAO: Pan-American Assn of Ophthalmology

Key Activities
- Scientific program (webinar delivery)
- Observational Internships
- Operating theaters and meeting rooms (Observerships)
- Digital Storage & Streaming platform

Value Proposition
- Educational Program
- National/International Networking
- Educational Experience/Data (Specialized technical and scientific education)
- Overall increase in specific technical capacity

Customer Relationship
- Community based (Institutional)
- Web-Based (forums, social media, webinars)
- Platform (web)
- On-Site (Observerships)

Customer Segments
- Ophthalmology Residents
- General Ophthalmologist
- Ophthalmologists from the Portuguese-speaking community (associated programs)

Key Resources
- Your Body text

Key Partners
- Industry: Thea laboratoires
- Scientific Experts & Training Centers

Cost Structure
- Digital Platform (Thea and SPO Sponsorship)
- Facility Costs (Training Centers Sponsorship)
- Marketing Advertisement (Industry Sponsorship)

Revenue Streams
- Participant fees (freemium model possible)
- Industry Sponsorship
- Training Centers (Facility Costs sponsorship)
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.
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.