

Title: Improving the care of cancer patients via an **Immuno-Oncology Knowledge HUB** for physicians and nurses.

Grant ID: 34096003

Main Partners:

P1. - The Catalan Institute of Oncology (ICO).

P2. - The Vall d'Hebron Institute of Oncology (VHIO).

P3. - The European Institute of Oncology (IEO).

P4. - The Princesa Hospital, located in Madrid (PH).

P5. - International Society of Nurses in Cancer Care (ISNCC).

P6. - The Spanish Group of Genitourinary Tumors, SOGUG).

P7. - The Spanish Lung Cancer Group (GECP).

P8. - The Spanish Multidisciplinary Melanoma Group (GEM)

Goal: The main goal of the proposed project is to improve healthcare delivery, quality of life and the health education of patients receiving immunotherapy treatment through a comprehensive training program for the healthcare professionals involved in their treatment.

Target: The project will primarily target medical oncologists, hematologists, oncology and hematology residents, other specialists such as internists, and emergency physicians and nurses working in the hospitals included in the project consortium, around 600 physicians and 800 nurses.

Methods: We propose a comprehensive training program focusing on two key aspects:

1. Shared learning between HCPs based on their practical experience, using the adapted SMILEON application.
2. Packaging of knowledge into evidence-based teaching materials so that it can be shared amongst peers and between disciplines (i.e. oncologist to another specialist, oncologist to nurse and vice versa).

Evaluation: We will assess changes in HCP knowledge, competence and performance, as well as patient knowledge, satisfaction with care and outcomes. The project outcomes will meet five of Moore's levels of CME outcomes measurements: learning (levels 3a and 3b), competence (level 4), individual performance (level 5) and patient health outcomes (level 6). We will conduct a prospective pre- and post-intervention analysis to assess the impact of the program on the management of patient care and QoL.

Dissemination: Following conclusion of the project, the program will be available free of charge to other healthcare institutions and HCPs via the e-oncología platform.

Keywords:

HCPs immunotherapy education needs; HCPs education evaluation, nursing immunotherapy training; immunotherapy adverse effect management; patients QoL and Pros reported tools; health education; early toxicity detection.

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C. Main Section

1. - Overall goal and objectives:

The main goal of the proposed project is to improve healthcare delivery, quality of life and the health education of patients receiving immunotherapy treatment through a comprehensive training program for the healthcare professionals involved in their treatment.

Immunotherapy is becoming established as a standard treatment for multiple tumor types, but there is a knowledge gap between highly specialized research centers and most of the healthcare clinical teams staffed by physicians and nurses responsible for the treatment and follow-up of cancer patients. This situation is worse still in the emergency departments of general hospitals and in community oncology centers.

There has been significant progress in immunotherapy research in recent decades. The integration of immunotherapy into clinical care requires evidence-based education to understand the pathophysiology of these treatments and facilitate early detection of their toxicities, and hence facilitate safe and effective care. Training oncology nurses is particularly important as a first step, followed by community nurses. Immunotherapy options for cancer treatment are growing fast, and oncology nurses need a deeper understanding of these therapies — how they work, and how to identify and manage their potential adverse events — so they can continue delivering the best patient care.

We propose to address these gaps by designing and implementing a comprehensive education program that combines the professional education of healthcare professionals (nurses, physicians and clinical research staff) with patient education. It will be tested and implemented in a large European oncology community network.

The project will be implemented in the hospitals that make up the Catalan Cancer Network, including two Comprehensive Cancer Centers, the Catalan Institute of Oncology (ICO) and the Vall d'Hebron Institute of Oncology (VHIO), as well as seventeen community hospitals, the Department of Medical Oncology of the Hospital de la Princesa (HP) in Madrid and the European Institute of Oncology in Milan (IEO). To facilitate evaluation of its impact, the project will focus on the healthcare professionals working at the participating hospitals. However, all the program content (videos, protocols, clinical guides, multimedia content) can be easily disseminated to other healthcare institutions and professionals via our e-oncology virtual community platform.

The project will support a training program for healthcare professionals (HCPs) using a combination of evidence-based products that have been tested over recent years:

1. e-oncología, an e-learning platform for training cancer HCPs, with more than 17,000 students, almost 2,500 hours of multimedia oncology content and a student certification rate of above 70%.
2. A virtual library of lectures and seminars on immuno-oncology recorded at the ICO, the VHIO, the IOE and the HP.
3. SMILEON (Supporting innovative learning approaches through mobile integration in the workplace —Oncology Nursing), a collaborative mobile social learning platform used to generate and disseminate specialized oncology knowledge to nurses (funded by an EU

Leonardo de Vinci Grant, 2013).

Specific objectives:

Aim 1: Create a sustainable Immuno-Oncology Knowledge Hub which is evidence-based and structured around different educational pathways based on the professional profiles, abilities and/or needs of its users. It will include streamed content (also available offline), multimedia e-learning content, virtual scenarios, clinical protocols and guidelines, and discussion spaces with experts or peers. The content will be translated and adapted to the needs of HCPs, based on the environment and the country where they work.

Aim 2: Adapt the SMILEON social learning platform to immunotherapy education, both clinical and practical.

Aim 3: Design and implement changes in the clinical practice of HCPs who treat patients with immunotherapy, via the acquisition of competences and skills related to the health education of patients undergoing this treatment.

Aim 4: Assess the learning process by evaluating the knowledge gained and the level of satisfaction among the professionals involved.

Aim 5: Assess the value of this education program to the quality of patient care by measuring the impact of immune-related toxicity and its management (toxicity-related adv., number of hospital admissions, frequency of non-scheduled visits and frequency of grade 3-4 adverse effects).

2. Current assessment of need in the target area:

Over the next 5 years, immunotherapy will likely become the treatment of choice for a significant proportion of patients with solid or hematologic malignancies. According to the data currently available on the use of immunotherapy in Catalonia for melanoma and lung cancer, the number of patients with these two types of tumors who could potentially be treated with immunotherapy over the next three years in Spain, Italy and Europe will be 17,750, 25,540 and 215,900 respectively (source: Globocan, Catalan Department of Health). The number of patients who could be treated with immunotherapy is much greater if we include other cancers such as bladder, kidney and lymphomas.

The expertise in managing immune-related toxicities is generally restricted to centers that have been involved in clinical trials, and HCPs must acquire knowledge if immunotherapy is to be implemented more widely.

Although immunotherapy supposes a great advance in the treatment of cancer patients, it also presents a challenge to health professionals, not only because its adverse event profile differs from that of chemotherapy or radiation therapy, but because it introduces new areas of clinical practice, such as assessing atypical tumor responses or recognizing the rare phenomenon called hyperprogressive disease (Champiat et al., Clinical Cancer Research, 2016). Although severe immune-related adverse events are rare (<10% of cases using monotherapy), they can become life-threatening if not anticipated and managed appropriately (Champiat et al., Annals of Oncology, 2016). However, the rate of immune-related adverse events will increase when a combination of immune therapies (such as anti-CTLA-4 plus anti-PD1 or anti-PD-L1) become available in routine clinical practice.

Despite the broad range of theory courses on offer for physicians, and the more limited range of courses available for nurses, we are not aware of any comprehensive education programs aimed at all HCPs involved in patient treatment. The range of courses currently on

offer does not address the real needs of HCPs. In our geographical area, this need is particularly relevant in nursing: there are currently very few courses available in Spanish or Italian. As the Oncology Nursing Society (ONS) stated in its June 2017 newsletter, *“oncology nurses across the spectrum will play a key role in education for both patients and colleagues.”* With the development of new drugs and their incorporation into clinical practice, nurses and non-oncology specialists may find it hard to keep abreast of the growing field of immunotherapy knowledge. One aspect of immunotherapy that oncology nurses should be aware of is the unique type and presentation of immune-related adverse effects. These may occur soon after drug administration or months after completing treatment, and it is important to train HCPs to anticipate and detect these.

At the time of writing this proposal we do not have access to reliable information about the following:

1. The degree of immuno-oncology knowledge among healthcare teams.
2. The frequency and rate of adverse effects outside the scope of clinical trials, and their impact on the use of health resources.
3. The level of knowledge among patients about this treatment, and what they can do to improve tolerance.

In [section 4](#) we describe how the training needs in this field will be assessed in the first phase of the project.

3. Target audience: The project will primarily target medical oncologists, hematologists, oncology and hematology residents, other specialists such as internists, and emergency physicians and nurses working in the hospitals included in the project consortium (around 600 physicians and 800 nurses), including research nurses and study coordinators.

To facilitate evaluation of the program for different HCP profiles, we have included different types of hospitals in the consortium:

- The Catalan Cancer Network, including:
 - Four monographic hematology-oncology centers: three centers in the Catalan Institute of Oncology (ICO) and one center in the Vall d’Hebron Institute of Oncology (VHIO). The HCPs working in these centers include highly specialized oncologists and hematologists.
 - Seventeen community or regional hospitals whose staff includes internists, emergency physicians and other specialists who may have to treat patients receiving immunotherapy.
- The European Institute of Oncology (IEO), a comprehensive cancer center which conducts important research and education work. Their participation brings the experience of highly qualified professionals from another European country to the project.
- Hospital de la Princesa (HP) in Madrid, a general university hospital which brings experience from oncologists and other specialists from the academic community.

To evaluate the impact on patient care, we will monitor 50 patients pre-intervention and 50 patients post-intervention in the participating hospitals. A minimum of 250 patients will be surveyed.

4. Project design and methods: The project will be implemented in four stages:

4.1 Stage 1. Pre-assessment:

The objective in this first stage is to understand current gaps in clinical practice and design methods of addressing these. One of the first steps is to obtain more detailed information which allows us to assess the existing gaps and the foreseeable impact of the program. This will comprise:

4.1.1. Needs analysis tools: We will develop appropriate tools for the needs analysis, including quantitative instruments, such as a knowledge questionnaire, and qualitative instruments, such as a semi-structured interview and a focus group protocol.

4.1.2. Assessment of theoretical knowledge of a representative selection of HCPs. Quantitative data about HCP's knowledge and educational needs will be gathered through online surveys aimed at all HCP profiles targeted in the project, i.e. oncology nurses, oncologists, hematologists, internists and emergency physicians. We want to obtain at least 50 responses from physicians and 50 from oncology nurses. These surveys will include questions about immunotherapy efficacy and approved indications, tumor assessment, frequency and management of adverse events and clinical management of tumor progression.

4.1.3. Qualitative assessment of the educational needs identified by doctors and nurses through focus groups or semi-structured interviews. Of the survey respondents, we will select 20 physicians and 20 oncology nurses from the different hospitals and gather qualitative information regarding their opinion on educational needs and the gaps identified.

4.1.4. A representative selection of patients will be followed for six months. Identification of 200–250 patients from across the participating hospitals and gather data on the frequency, grade and type of adverse events, the toxicity-related death rate, the number of hospital admissions, the percentage of unscheduled visits, Quality of Life (QOL) indicators and Patient-Reported Outcomes (PROs), and the level of knowledge of the disease and of the treatment received.

We will use the following tools to assess the impact of the intervention on patients:

1. *A medical record review* to assess the following: date of diagnosis; stage; previous cancer surgery (dates, types); pathology report; chemotherapy administered; response to and duration of previous therapy; immunotherapy administered (dates, agents, doses); other treatments and supportive care medications if any; adverse events and unscheduled admissions and consultations; date and cause of death (disease progression or toxicity).
2. The EORTC QLQ-C30 questionnaire (developed to assess the QoL of cancer patients) and PRO reports.
3. *A basic knowledge evaluation test* to assess the level of patient knowledge about the disease and the treatment received. We will gather information to identify the most important QoL issues for patients and their educational needs.

4.1.5. Deliverables: The following deliverables will be generated in this phase:

1. Quantitative surveys on knowledge and needs.
2. Semi-structured interview and focus group protocols.

access to the learning material that best matches their educational needs.

The Hub's social learning component allows the same professional to be an expert in one subject and a student of another.

The knowledge Hub will include different learning content:

1. **Recordings of in-person sessions:** recordings from every participating center will be streamed or broadcast offline.
2. **Online courses:** Aimed at HCPs from each of the target professions: nurses, oncologists, hematologists and medical specialists.
3. **Current educational scientific material:** protocols, best practice and clinical guidelines.
4. **Collaborative tools, via the SMILEON app:** instant messaging, interactive debate forums, and a database that compiles Hub contributions.
5. **Virtual clinical boards on immunotherapy:** presentation and discussion of complex clinical cases, with the participation of physicians and nurses.

Our partners in the proposed project are world-renowned specialists in immuno-oncology and oncological care and research, and have substantial experience in developing and delivering Continuing Medical Education (CME) curricula. Furthermore, ongoing participation in several relevant and opportune clinical trials will provide the project team with the knowledge and skills necessary to implement the proposed e-curriculum. All educational activities in the program will be CME accredited.

The content will be classified and organized based on the following:

1. Target audience
2. Main topic addressed: indications, adverse reactions, etc.

4.2.2 Detail and deliverables of learning content:

a. Advanced immuno-oncology workshop

We will organize a workshop on the latest developments in immuno-oncology in Barcelona, with the participation of all partners and a renowned European speaker on the subject. The workshop will coincide with a project follow-up meeting, also in Barcelona.

Duration:	4 hours
Language:	English
Target:	30 medical oncologists & hematologists
Content:	- Scientific presentations and discussions on latest advances
Format:	- In-person workshop
Deliverable:	The session will be recorded for later viewing on the e-oncología platform.

b. Immuno-oncology introduction symposium for nurses

We will organize a symposium on immunotherapy for oncology nurses to coincide with the annual symposium of the Spanish Lung Cancer Group (GECP), to be held in Madrid in November 2018.

Duration:	3 hours
Language:	Spanish

Target:	30-50 oncology nurses
Content:	<ul style="list-style-type: none"> - The role of the case management nurse - Immunotherapy efficacy - Immunotherapy toxicity
Format:	- Lectures
Deliverable:	The session will be recorded for later viewing on the e-oncología platform.

c. Online course on immuno-oncology for oncologists & hematologists, delivered via e-oncología

Duration:	15 hours
Language:	Spanish/English
Target:	Medical oncologists and oncologists in training
Content:	<ul style="list-style-type: none"> - Basic immunology concepts - Types of treatments - Evaluation of response to immunotherapy - Toxicities - Sequencing or combinations with other classes of treatments, i.e. immunotherapy and bone marrow transplant.
Format:	- Online
Deliverable:	The course will be available on the e-oncología platform.

d. Online course on immuno-oncology for nurses

Objective:	To train oncology nurses on the identification, early detection and treatment of the adverse effects of immunotherapy and the provision of health education to patients.
Duration:	8 hours
Language:	Spanish/Italian
Target:	Oncology nurses
Content:	<ul style="list-style-type: none"> - Basic immunology concepts - Types of treatments - Adverse effects and their treatment - Patient health education
Format:	- Online
Deliverable:	The course will be available on the e-oncología platform.

e. Online course on immuno-oncology for other specialists

Objective:	To train other non-oncologists and emergency physicians on the identification and treatment of the adverse effects of immunotherapy.
Duration:	5 hours
Language:	Spanish/English
Target:	Non-oncologists and emergency physicians
Content:	<ul style="list-style-type: none"> - Basic immunology concepts - Types of treatments - Adverse effects and their treatment
Format:	- Online
Deliverable:	The course will be available on the e-oncología platform.

f. **Virtual clinical boards on immunotherapy:** Presentation and discussion of complex clinical cases. We propose five virtual clinical boards in total, distributed across the participating hospitals. The sessions will follow the standard Tumor Committee format and the selected cases will cover complex aspects of therapeutic decisions or unexpected/severe side effects. The sessions will be recorded and available for later viewing on the platform.

g. **The SMILEON app** will support shared learning using collaborative tools such as instant messaging, interactive debate forums and chats. The app is already available

in Italian, since the European Institute of Oncology was part of the consortium that developed the project, which was funded by an EU Leonardo da Vinci Grant.

- h. **Recordings of in-person sessions:** This section will include recordings of scientific sessions held in the participating centers on relevant aspects of immuno-oncology. For example, the Medical Oncology Department of the ICO has already held seven sessions during the first quarter of 2017, and VHIO has held six sessions since 2015.
- i. **Cancer immunology course,** to be held from January to May 2018 at the Hospital de la Princesa.

Duration:	30 hours
Language:	Spanish
Target:	Oncologists and oncology nurses
Content:	- To be defined
Format:	- In-person
Deliverable:	The presentations will be available on the e-oncología platform.

4.3 Stage 3. Post-assessment:

We will assess changes in HCP knowledge, competence and performance, as well as patient knowledge, satisfaction with care and outcomes. The project outcomes will meet five of Moore’s levels of CME outcomes measurements: learning (levels 3a and 3b), competence (level 4), individual performance (level 5) and patient health outcomes (level 6). We will select a sample of patients matched with the pre-assessment group to assess changes in patient health outcomes, taking into account the most important prognostic factors. We will compare changes in outcomes over a six-month period in the pre-intervention group vs. the post-intervention group. In section 5 we describe our evaluation methodology.

4.3.1 Deliverable: Pre/post patient assessment analysis report.

4.4 Stage 4. Dissemination:

Dissemination will be co-led by the ICO and the International Society of Nurses in Cancer Care (ISNCC) with the participation of three collaborating groups: the Spanish Melanoma Group (GEM), the Spanish Group for Genito-Urinary Oncology (SOGUG) and the Spanish Lung Cancer Group (GECp).

We will disseminate the program results through the following channels:

- Articles in first-quartile scientific journals in the following areas: oncology, hematology, nursing oncology and health education.
- Participation in specialized national and international congresses and symposia.
- Via members of scientific and research groups participating in the project:
 - The ISNCC, representing over 60,000 cancer nursing members worldwide.
 - The SOGUG, representing almost 300 oncologists and researchers specialized in managing patients with genito-urinary cancer.
 - The GEM, representing 200 individual members involved in managing melanoma in Spain, and 105 hospitals from Spain and other European countries.
 - The GECp, representing almost 400 individual members specialized in managing lung cancer, and 150 hospitals.
- Other scientific societies:

- The Spanish Society of Medical Oncology (SEOM), comprising more than 2,400 oncology specialists.
- The European School of Oncology (ESO). The ESO collaborates regularly with the ICO and has recognized e-oncología's Master in Medical Oncology as an "ESO Recommended Program".
- **Social Networks:** Networking is essential in healthcare environments, and the use of social media adds value to information sharing and making professional contacts. We therefore plan to integrate social media and other digital tools into the project dissemination plan. LinkedIn and Facebook are the most widely used social networks among healthcare professionals around the world. There are currently more than 600,000 personal profiles and 320 groups on LinkedIn related to the keyword 'oncology', making it an important resource. LinkedIn has advanced search capabilities that could prove very useful for dissemination. We will therefore use LinkedIn as our initial point of contact with the medical community, and Facebook as a second point of contact.

Following conclusion of the project, the full program will be available free of charge to other healthcare institutions and individual HCPs via the e-oncología platform.

5. Process Evaluation and Outcomes:

A variety of methods could be used to assess the outcomes of our proposed project. We have opted for the model developed by Moore, Green and Gallis (2009) as the foundation for implementing our outcomes evaluation.

5.1 Process evaluation: To evaluate the adoption and implementation of the program we will measure program coverage and compliance, fidelity to the training program, use of materials, satisfaction with the training and the number of HCPs trained.

Program performance **indicators:**

- Number of participants and profile (profession, gender, age) registered on the course.
- Number of participants and profile (profession, gender, age) that completed the course.
- Number of hours dedicated to the training program.
- Program performance/fidelity to the curriculum (whether the students completed all the modules and exercises as planned).
- Service use (time spent on the course, number of downloads of materials, etc.).
- Opinions, experience, perceptions and satisfaction with the training course.

These indicators will provide important information about the user experience which can be used to optimize and improve the Virtual Knowledge Hub.

5.2. Outcomes evaluation:

5.2.1 Knowledge evaluation: We will conduct a prospective evaluation to assess baseline knowledge and acquisition of knowledge among the target HCPs on topics including therapeutic indications, assessment of efficacy/effectiveness, mechanisms of resistance, adverse effects and their proper management, combinations with other classes of treatments and patient information after the intervention. The pre- and post-intervention comparison will provide a statistical efficacy measure for evaluating the usefulness of the program.

5.2.2 Impact evaluation: We will conduct a prospective pre- and post-intervention analysis

to assess the impact of the program on the management of patient care and QoL, comparing the following aspects for the two groups of patients:

- a) Frequency, grade and type of adverse events.
- b) Number of hospital admissions, and percentage of unscheduled visits.
- c) QoL indicators and PROs, using the EORTC QLQ-C30 questionnaire.
- d) Level of knowledge of the disease and of the treatment received.

A sample calculation will be conducted in collaboration with a biostatistician.

5.3. Deliverables: The following deliverables will be generated in this phase:

- a. Report on the results of the program process evaluation.
- b. Report on the impact on knowledge improvement among HCPs trained.
- c. Report on the impact on management of patient care, QoL and PROs: results of the pre/post intervention comparison of the two groups of patients.
- d. Best practice guide for nurses on health education for patients treated with immunotherapy.
- e. Best practice guide for nurses and physicians on early detection of immunotherapy toxicity.

7. Detailed work plan and schedule of deliverables:

The project work plan spans a two-year period broken down into eight quarters and seven Work Packages (WP). Please refer to Appendix 1 for a schedule of each WP and the corresponding deliverables, including each partner's level of involvement. Project leadership and the capacities of those involved in the project are detailed in section E.

The ICO will manage the project and coordinate with the other partners. The ICO will ensure that project activities are delivered in accordance with the proposal and that milestones are reached as planned. The relevant contracts between the consortium members will be signed during the first month after the project is assigned and prior to the start of the work. Said contracts will set out the commitments made by each member.

- From Q1 to Q3 we will implement the activities to identify the needs and expectations of HCPs (design of questionnaires, sampling, etc.), as well as the patient evaluation to inform the impact assessment (questionnaires, medical record review, sample selection, etc.). Patients will be monitored for six months, from Q2 to Q3.
- From Q2 to Q4 we will design the education program adapted to the different profiles and needs identified, and we will develop the online courses. In parallel, we will implement the technological adaptation of the e-oncología and SMILEON platforms to support all the components of the Immuno-Oncology Knowledge Hub set out in section 4.2.
- From Q5 to Q6 we will implement the education program in each of the participating hospitals, including 1) access to all courses, collaboration tools and other materials via the e-oncología and SMILEON platforms, and 2) courses, sessions and in-person virtual boards which will be streamed and remain available on the platform.
- From Q6 to Q7 we will repeat the evaluation of the second patient group among those to be monitored for six months.
- From Q5 until the end of the project we will implement the planned dissemination activities. This work will conclude during Q8 with the preparation of articles and results reports.

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Appendix 1

Immuno-Oncology Knowledge HUB - GANTT CHART

	Activities/ Deliverables	Q1			Q2			Q3			Q4			Q5			Q6			Q7			Q8				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
WP0	Project management	[Hatched]																									
D0.1	Project Management Handbook: tasks, requirements, timeframe.	D0.1																									
D0.2	Interim Report												D0.2														
D0.3	Follow-up Meeting Barcelona											D0.3															
D0.4	Final Financial Report																									D0.4	
D0.5	Final Report																									D0.5	
WP1	HCPs Needs & Knowledge Assessment	[Hatched]																									
D1.1	Needs & knowledge Quantitative instruments			D1.1																							
D1.2	Needs & knowledge Focus groups protocol			D1.2																							
D1.3	Needs assessment report						D1.3																				
WP2	Patients Impact Evaluation	[Hatched]																									
D2.1	Medical Record Survey questionnaire			D2.1																							
D2.2	Patients Knowledge questionnaire			D2.2																							
D2.3	Adaptation EORTC QLC-C30 & PROS questionnaires			D2.3																							
D2.3	Patients survey, QOL & PROs Initial Report									D2.3																	
WP3	Design the Virtual Knowledge HUB	[Hatched]																									
D3.1	Adapt e-oncología platform to an adaptive intelligent system																										
D3.2	Adapt SMILEON platform																										

Improving the care of cancer patients via an **Immuno-Oncology Knowledge HUB** for physicians and nurses.

	Activities/ Deliverables	Q1			Q2			Q3			Q4			Q5			Q6			Q7			Q8		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
WP4	Develop educational activities: online courses, face to face training, virtual clinical boards																								
D4.1	Program Outline					D4.1																			
D4.2	Advanced Immuno-Oncology Workshop (recorded for later viewing)										D4.2														
D4.3	Immuno-oncology Introduction Symposia for Nurses (recorded for later viewing)											D4.3													
D4.3	Online course on immuno-oncology for oncologists & hematologists												D4.3												
D4.4	Online course on immuno-oncology for nurses													D4.4											
D4.5	Online course on immuno-oncology for other specialists													D4.5											
WP5	Implement and launch training program																								
D5.1	Inform all target HCPs of the hospitals through different channels																								
D5.2	Publish all the training resources and open the platform													D5.2											
D5.3	Deliver the courses: scientific & technical tutorship																								
D5.4	Virtual clinical boards (recorded for later viewing)																								
WP6	Process, Outcome, and Impact Evaluation & Analysis of Data																								
WP6.1	Process Evaluation																								
D6.1.1	Report on program coverage, compliance and fidelity																						D6.1.1		
D6.1.2	Report on participants satisfaction																						D6.1.2		
WP6.2	Outcome Evaluation																								
D6.2.1	Report on results on knowledge improvement assessment																						D6.2.1		
D6.2.2	Report on results in competency and performance-based changes																							D6.2.2	

	Activities/ Deliverables	Q1			Q2			Q3			Q4			Q5			Q6			Q7			Q8		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
WP6.3	Impact Evaluation																								
D6.3.1	Patients survey, QOL & PROs																								
D6.3.2	Report on results of the pre/post intervention comparison of the two groups of patients.																							D6.3.1	
D6.3.3	Best practice guide for nurses on health education for patients treated with immunotherapy																							D6.3.2	
D6.3.4	Best practice guide for nurses and physicians on early detection of immunotherapy toxicity																							D6.3.3	
WP7	Dissemination																								
D7.1	Dissemination plan																								
D7.2	Design of dissemination material: brochures, LinkedIn, etc.																								
D7.3	2 Writing manuscripts																							D7.1	
D7.8	Dissemination through scientific societies																							D7.2	

Responsibilities:

The Catalan Institute of Oncology members will lead WP0 to WP7.

The WP1 will be co-lead by the International Society of Nurses in Cancer Care (ISNCC).

The WP2 will be co-lead by The Vall d’Hebron Institute of Oncology (VHIO).

The WP4 will be co-lead by all the partners.

The WP5 will be co-lead by ICO, VHIO, IEO, and PH.

The WP6 will be co-lead by ICO and The European Institute of Oncology (IEO) and The Princesa Hospital (PH).

The WP7 will be co-lead by the International Society of Nurses in Cancer Care (ISNCC), the Spanish Group of Genitourinary Tumors, SOGUG, the Spanish Lung Cancer Group (GECp), and the Spanish Multidisciplinary Melanoma Group (GEM)