Brussels, 19 May 2025

COST 067/25

**DECISION**

Subject: Memorandum of Understanding for the implementation of the COST Action “Disparities In Surgical Specialization and Education in Cancer Training” (DISSECT) CA24158

The COST Member Countries will find attached the Memorandum of Understanding for the COST Action Disparities In Surgical Specialization and Education in Cancer Training approved by the Committee of Senior Officials through written procedure on 19 May 2025.

**MEMORANDUM OF UNDERSTANDING**

For the implementation of a COST Action designated as

**COST Action CA24158**
**DISPARITIES IN SURGICAL SPECIALIZATION AND EDUCATION IN CANCER TRAINING (DISSECT)**

The COST Members through the present Memorandum of Understanding (MoU) wish to undertake joint activities of mutual interest and declare their common intention to participate in the COST Action, referred to above and described in the Technical Annex of this MoU.

The Action will be carried out in accordance with the set of COST Implementation Rules approved by the Committee of Senior Officials (CSO), or any document amending or replacing them.

The main aim and objective of the Action is to identify the critical gaps and variabilities in cancer surgery training in Europe. The consortium aims to leverage on knowledge exchange between high and low-resource settings, strengthen the multidisciplinary approach, integrate patient partnership and facilitate mentorship in cancer surgery training, and foster research and surgical innovation. This will be achieved through the specific objectives detailed in the Technical Annex.

The present MoU enters into force on the date of the approval of the COST Action by the CSO.

## OVERVIEW

**Summary**
Cancer surgery remains a key treatment for solid malignancies, particularly in low- and middle-income countries (LMICs) where access to newer therapies is limited. With the growing global cancer burden, the demand for high-quality surgery will rise. As precision medicine advances, cancer surgeons need not only technical expertise but also an understanding of multidisciplinary cancer care, preventive and palliative care, clinical trials, and effective communication. However, disparities in surgical oncology training exist across Europe, affecting access to complex cases, clinical trials, mentorship, and research facilities. These variations are linked to economic disparities, leading to differences in patient outcomes.

The DISSECT project aims to identify and address these disparities in cancer surgery training in Europe. By fostering knowledge exchange between high- and low-resource settings, the project will enhance multidisciplinary training, mentorship, and research capacity. It aligns with Europe's Beating Cancer Plan to ensure equitable access to high standards of care and to reduce cancer-related inequalities. DISSECT seeks to create a sustainable impact on cancer surgery outcomes through improved training and innovation in surgical education.

| **Areas of Expertise Relevant for the Action** | **Keywords** |
|---|---|
| ● Clinical medicine: Oncology<br>● Clinical medicine: Surgery | ● Disparities in patient treatment<br>● Cancer Surgery<br>● Multidisciplinary Knowledge Exchange<br>● Surgical Mentorship<br>● Artificial Intelligence in Surgical Oncology |

**Specific Objectives**
To achieve the main objective described in this MoU, the following specific objectives shall be accomplished:

Research Coordination
● Perform a needs assessment to identify areas of cancer surgery training disparities through surveys and focused group discussions.
● Organize at least two multi-stakeholder meetings within the funding period to develop a roadmap to address critical areas of disparities in cancer surgery training and assess its impact.
● Identify five priority areas of disparities in cancer surgery training where collaboration from high and lower resource settings can have meaningful impact.
● Generate at least five open access publications from the DISSECT network in peer-reviewed journals.

Capacity Building
● Facilitate knowledge exchange and a multidisciplinary team approach between high and low-resource settings
● Facilitate knowledge exchange and a multidisciplinary team approach between high and low-resource settings
● Assess the impact of these joint MDT sessions on patient outcomes, surgical decision-making among young surgeons and research output among trainees.
● Develop learning pathways and tailored mentorship programs for surgical trainees dedicated to patient-

focused cancer research, effective leadership, communication, and innovation
● Develop and assess the feasibility of a tele-mentoring program for surgeons to improve competency in cancer surgery, decision-making for complex clinical cases, and predicting surgical outcomes

# TECHNICAL ANNEX

## 1. S&T EXCELLENCE

### 1.1. SOUNDNESS OF THE CHALLENGE

#### 1.1.1. DESCRIPTION OF THE STATE OF THE ART

Surgery remains a cornerstone of cancer treatment. In many parts of the world, it is still the primary treatment for most solid malignancies. As the global burden of cancer increases, the need for high-quality surgery will also increase [1]. Cancer surgery is the main method of cancer control especially in many low- or middle- income countries (LMICs) where resources and access to newer systemic therapies or radiotherapy is limited[2,3]. With precision medicine and a rapidly evolving research landscape, the role of the cancer surgeon is also changing. Improving their knowledge and technical skills is essential in achieving healthy and productive societies. Today, to be an effective cancer surgeon, one must have the knowledge that integrates different facets of cancer care apart from the technical aspect of surgery itself [4–7]. To provide the best possible care for patients, cancer surgery training should include:

- Multidisciplinary cancer care and exposure to complex oncologic cases
- Accreditation for excellence in the technical and cognitive aspects of surgery, the biology of cancer and principles of its multidisciplinary treatment
- Providing preventive and palliative care, pain management and end-of-life care
- Engagement in research and having a basic understanding of clinical trial design, implementation, and interpretation
- Communication, teamwork and leadership

Across Europe and globally, there are variations in the training of surgical oncologists, largely associated with the economic status of countries or regions [8,9]. Disparities exist in surgical oncology training across Europe with regards to the following [10–13]:

- institutional caseload and exposure to complex cancer cases
- access to clinical trials
- required length of specialization and postgraduate training
- mode of accreditation
- access to mentorship and to facilities conducive for research and innovation

These variations are contributing to disparities in cancer-specific mortalities as well as in research participation between high-resource and lower-resource countries or regions [14–17]. The impact of these disparities, specifically in cancer surgery training and education, need to be recognized and assessed. Although this is a multidimensional problem, there are specific areas that can be improved by learning from one another and working together. Facilitating knowledge exchange is critical for training and mentoring surgical oncologists, increasing research capacity among surgeons, facilitating innovation, and improving patient outcomes.

#### 1.1.2. DESCRIPTION OF THE CHALLENGE (MAIN AIM)

A surgical oncology training program needs to include an adequate number of complex cancer cases and a multidisciplinary team approach for patient care. Moreover, research and quality improvement activities must be embedded in the training. There are disparities among European countries in these basic capacities potentially compromising the training of cancer surgeons and the outcome of patients. So far, these disparities have never been investigated or addressed.

**DISSECT** (**D**isparities **i**n **S**urgical **S**pecialization and **E**ducation in **C**ancer **T**raining) aims to identify these critical gaps and variabilities in cancer surgery training in Europe. The consortium aims to leverage on knowledge exchange between high and low-resource settings, strengthen the multidisciplinary approach, integrate patient partnership and facilitate mentorship in cancer surgery training, and foster research and surgical innovation.

In line with the philosophy of Europe's Beating Cancer Plan, which aims to ensure access to high standards in cancer diagnosis and treatment and reducing inequalities in Europe, **DISSECT** aims to improve surgical oncology training as a pragmatic and sustainable means to improve outcomes among

cancer patients. High quality cancer surgery improves the clinical outcome and quality of life of patients, enabling them to continue contributing to society. Hence, supporting surgical training can be considered a long-term investment towards a productive health system.

## 1.2. PROGRESS BEYOND THE STATE OF THE ART

### 1.2.1. APPROACH TO THE CHALLENGE AND PROGRESS BEYOND THE STATE OF THE ART

**DISSECT** will build upon published standards of surgical training excellence while adapting to the changing landscape of cancer care. The network of proposers believes that empowering the surgical workforce has a societal impact. High quality cancer surgery is critical to a resilient healthcare system and a productive society. A cost-effective strategy to achieve this is by improving cancer surgery training across the EU through virtual and social mobility grants from the COST Action. This platform can enable components of cancer surgery training: knowledge exchange, innovative technology (i.e. virtual reality and artificial intelligence for surgical training), and patient partnership in research development.

**Identifying areas of disparity in surgical oncology training through field research**

The network will "DISSECT" the issue of training disparities by performing field research, surveys, focused group discussions and literature review. These will identify and quantify variabilities and disparities in surgical training. A landscape analysis will be performed including potential impact to patient care and potential solutions adapted to local settings. Stakeholders from specialized training institutions including patient partners will be included in these discussions. These forums will be the starting point for sharing insights from what is happening on the ground and proposing feasible solutions to address disparities in cancer surgery training.

**Knowledge exchange through Multidisciplinary Team virtual meetings across diverse institutions**

Central to the training of future cancer surgeons is exposure to functional and well-informed multidisciplinary teams (MDT). These MDTs must have the capacity to tackle a wide variety of cases and implement shared decision making with patients needing cancer treatment. However, there are variabilities to the organization and functioning of MDTs across Europe. Some are highly organized to discuss and follow-up complex clinical cases regularly while some may not even have regular meetings.

**DISSECT** proposes to use virtual mobility grants to bridge MDT discussions from two institutions, one from a high-resource setting and the other from a lower-resource setting, focusing on anonymized patient cases. Through virtual mobility strategies, knowledge exchange through joint MDT discussions on treatment strategies will be carried out. Apart from enriching the knowledge and capacity of the teams through this unique interaction, the goal is to deliver basic evidence-based treatment recommendations for patients suffering from cancer. Participating trainees will be involved in organizing these joint MDT meetings. This will facilitate understanding not just of surgical approaches but also the full spectrum of cancer treatments, highlighting the need for shared decision-making with patients.

**Building research capacity through collaboration and patient partnership**

Several studies have demonstrated that in countries with less cancer research output, patient outcomes are worse. It is also well known that surgical studies represent a minority of trials registered in clinicaltrials.gov.[18–20]. These have a direct impact on the research literacy and training of cancer surgeons. Without the conducive environment that would encourage trainees to perform collaborative research, high quality and evidence-based cancer care, specifically surgical care, is difficult to achieve. Hence, **DISSECT** will foster partnerships across COST Full member countries and Inclusivity Target Countries to stimulate joint research projects focused on patient-centred research questions, pragmatic study designs, surgical innovation and quality improvement. **DISSECT** will harness the expertise of the network and partnership with patient advocates to increase surgical research capacity.

**Cancer surgery mentorship**

Cancer surgery training is highly technical. Surgeons also need to develop leadership, communication, and negotiation skills to empower them as they navigate career pathways. Mentorship, exposure to operative cases with varying degrees of complexity, and availability of specific innovative learning tools are critical in surgical training. **DISSECT** will develop tailored mentorship programs focusing on these skills to empower surgeons as they grow in their role in the society.

Some countries have highly specialized cancer centres with abundant resources while some lower-resource countries may have a high volume of patients albeit less access to newer drugs or diagnostic modalities. Nonetheless, with their best available resources, patients still get treatment and care with locally tailored approaches. **DISSECT** will harness these differences in order to enrich the capacity for learning supported by effective mentorship. Short-term exchange programs using social mobility grants between training institutions of COST full member countries and Inclusivity Target Countries will allow bi-directional knowledge exchange. Cross-pollination of skills, knowledge and partnerships for research and surgical innovation are expected to emerge.

**Harnessing emerging technologies for surgical innovation and better patient care**

**DISSECT** will leverage its expertise in virtual reality technology, fluorescence guided surgery, robotic surgery and precision cancer surgery to optimize surgical training and mentoring. Workshops on innovation and training are essential for cancer surgeons to foster a culture of innovation. These can enhance surgical skills, promote interdisciplinary collaborations, help manage complex cases and ultimately contribute to better patient outcomes.

**DISSECT** will focus on developing training programs around emerging technologies in cancer care such as artificial intelligence (AI) for surgeons. The possibility for these tools to be used for quality improvement and effective management of surgical care pathways will be explored. Moreover, surgeons will be introduced to responsible use of AI and ethical issues of its use in surgical oncology, such as decision-making in complex cases, informed consent, and end-of-life care.

### 1.2.2. OBJECTIVES

#### 1.2.2.1. *Research Coordination Objectives*

The main objective of the DISSECT Action is to create a cohesive network and identify the critical gaps and variabilities in cancer surgery training in Europe. The consortium aims to leverage on knowledge exchange between high and low-resource settings, strengthen the multidisciplinary approach, integrate patient partnership and facilitate mentorship in cancer surgery training, and foster research and surgical innovation. This will be done through achievement of our Research Coordination Objectives:

- Perform a needs assessment to identify areas of cancer surgery training disparities **t**hrough surveys and focused group discussions.
- Organize at least two multi-stakeholder meetings within the funding period to develop a roadmap to address critical areas of disparities in cancer surgery training and assess its impact.
- Identify five priority areas of disparities in cancer surgery training where collaboration from high and lower resource settings can have meaningful impact.
- Generate at least five open access publications from the DISSECT network in peer-reviewed journals.

#### 1.2.2.2. *Capacity-building Objectives*

- Facilitate knowledge exchange and a multidisciplinary team approach between high and low-resource settings
- Conduct joint MDTs with virtual clinical discussions between paired high and low resource institutions within the network DISSECT
- Assess the impact of these joint MDT sessions on patient outcomes, surgical decision-making among young surgeons and research output among trainees.
- Develop learning pathways and tailored mentorship programs for surgical trainees dedicated to patient-focused cancer research, effective leadership, communication, and innovation
- Develop and assess the feasibility of a tele-mentoring program for surgeons to improve competency in cancer surgery, decision-making for complex clinical cases, and predicting surgical outcomes

# 2. NETWORKING EXCELLENCE

## 2.1. ADDED VALUE OF NETWORKING IN S&T EXCELLENCE

### 2.1.1. ADDED VALUE IN RELATION TO EXISTING EFFORTS AT EUROPEAN AND/OR INTERNATIONAL LEVEL

**DISSECT** aims to contribute to the goals of the **EU Beating Cancer Plan** by capitalizing on the best individual capabilities of countries from the network, sharing knowledge and resources, and harnessing virtual reality and blended learning to reduce the gaps in cancer surgery training in Europe. It will collaborate with the **European Society of Surgical Oncology (ESSO),** which is the leading organization promoting cancer surgery education in Europe and beyond. DISSECT also aims to work side by side with ongoing initiatives such as **INTERACT-Europe** which has a broader goal for facilitating inter-specialty training for cancer, **Breast International Group Patient Partnership Initiative** (BIG- PPI), a non-for profit research organizations such as the **Anticancer Fund Belgium**, and Champalimaud Foundation together with Lisbon School of Medicine for their expertise in educational programs applied for technological literacy, specifically AI. This COST Action will focus on improving cancer surgery training, innovation and research which is usually not prioritized through other funding mechanisms [21]. It will work with ongoing surgical initiatives with the longer-term goal to improve cancer care delivery, clinical outcomes and quality of life of patients.

## 2.2. ADDED VALUE OF NETWORKING IN IMPACT

### 2.2.1. SECURING THE CRITICAL MASS, EXPERTISE AND GEOGRAPHICAL BALANCE WITHIN THE COST MEMBERS AND BEYOND

At proposals stage, the DISSECT Action network represented the following countries:

| | | |
|---|---|---|
| Austria | Belgium | Bulgaria |
| Czech Republic | Denmark | Germany |
| Italy | Latvia | Malta |
| Montenegro | The Netherlands | Poland |
| Portugal | Romania | Serbia |
| Spain | United Kingdom | Brazil |
| India | United States | |

DISSECT will start with at least 17 members from the COST Full members, of which 9 are Inclusiveness Target Countries. There are currently 3 additional members from Third Countries. Those identified as female are 10 (42%) while the total number of young investigators (age less than 40) in the network are currently 10 (42%).

DISSECT's main goal is to leverage on knowledge exchange between high and low-resource settings to strengthen the multidisciplinary approach, facilitate mentorship in cancer surgery and research, surgical innovation and patient partnership. It will therefore actively **pursue the involvement of more NNCs and IPCs**, through (1) interaction with existing European and international initiatives, (2) direct contacts with international societies (including patient advocacy groups), and (3) networking events and scientific meetings. DISSECT will **incorporate gender equality** by ensuring a gender balance in the Action's management committee and working groups, fostering an equitable environment for decision- making. In addition, our focus is on networking opportunities for **Young Researcher and Innovators (YRI)** through our focus on development of educational opportunities and materials for the transfer of knowledge and skills to those who require this knowledge.

### 2.2.2. INVOLVEMENT OF STAKEHOLDERS

**Clinicians and researchers specialized in cancer**
The general scientific community will be reached mainly through networking, social media engagement, newsletters, and the website. Multidisciplinary specialists in treating cancer such as surgeons, radiologists, pathologists, and oncologists will be approached through professional networking and will be involved in identifying areas of disparities in cancer surgery training. Experts in cancer clinical and translational research, international research organisations involved in large scale clinical trials will be

asked to participate in developing a research learning pathway surgeons. The focus of the Action will be on improving surgery training as a pragmatic and sustainable means to improve outcomes among patients living with cancer, and thus generally improving patient management in the European healthcare sector. Experts from outside the European community will also be invited to participate in the Action to provide a global perspective on cancer surgery training disparities.

**Patient experts and advocates**
Once the Action is up and running, specific outreach to patient experts in cancer research and patient advocacy groups will be performed. They will be partners of the DISSECT consortium in developing the research learning pathway, mentorship, and innovative learning programs. They will be involved in stakeholder meetings during scientific meetings to ensure that the patient perspective is integrated in cancer surgery training, education, and research. Patient experts will be asked to provide input in mentorship programs especially on the aspect of shared decision making and communication.

**Industry partners and academia with expertise on AI and tele-mentoring using virtual or augmented reality**
The Action will reach out to stakeholders like hyperscalers, academic institutions such as the Lisbon School of Medicine, and non-profit research institutions such as the Champalimaud Foundation through the organisation of Action meetings, participation in international conferences, newsletters, and the DISSECT website. Potential new members, including those specialized in robotic surgery, molecular imaging, fluorescence-guided surgery, AI and virtual reality will be approached to co-develop the innovation learning pathway.

**Government and Policymakers**
Policymakers at the national and European level, including health services representatives, will be identified and kept informed about the main gaps in surgical patient care, and areas of potential improvement in services and treatments through updates when new research or treatment methods become available and the use of regular reporting. Government officials from both member and non-member states will be included in any news releases pertaining to current policies or recommendations for new policies and even general newsletters.

# 3. IMPACT

## 3.1. IMPACT TO SCIENCE, SOCIETY AND COMPETITIVENESS, AND POTENTIAL FOR INNOVATION/BREAKTHROUGHS

### 3.1.1. SCIENTIFIC, TECHNOLOGICAL, AND/OR SOCIOECONOMIC IMPACTS (INCLUDING POTENTIAL INNOVATIONS AND/OR BREAKTHROUGHS)

**DISSECT** aims to cultivate excellence and collaboration. It has the potential to create a significant and sustainable impact within the field of surgical oncology by identifying the areas of disparities or variabilities, investing in high-quality cancer surgery training and education. Improvements in local and regional treatment for cancer is a cost-effective means to reduce the financial toxicity of cancer care across public healthcare systems. The network can contribute to this broader aim by strengthening the “basics” of cancer care: multidisciplinary approach, patient-focused research, and innovation. **DISSECT** can contribute to a “democratisation” of top-quality surgical training, research and innovation across diverse economic and cultural settings, upskilling the surgical workforce ensuring that healthcare professionals remain at the forefront of technological advancements. This not only improves job prospects for surgeons but also contributes to the resilience and adaptability of healthcare systems in the face of rapidly evolving technologies such as AI integration in surgical workflows.

## 3.2. MEASURES TO MAXIMISE IMPACT

### 3.2.1. KNOWLEDGE CREATION, TRANSFER OF KNOWLEDGE AND CAREER DEVELOPMENT

**DISSECT** will collaborate with several stakeholders and develop a unique learning platform for surgical mentorship, cancer research and precision cancer surgery using hybrid (virtual, in-person and assisted by virtual or augmented reality) educational methods. Disparities will be addressed through virtual mobility,

short-term training schools, and scientific meetings to optimize cancer surgery education. It will allow a more interactive and innovative way of transferring knowledge and exchanging ideas regardless of a country's economic status. It will also engage patients and surgeons in a partnership for meaningful and pragmatic cancer research. **DISSECT** will focus on generating knowledge about the current landscape of cancer surgery training, understanding how to best utilize new and innovative tools, including AI to improve education, training, and decision-making in surgery. Most of all, it will ensure the integration of the patient perspective in the educational portfolio. Taken together, these initiatives will empower and engage young surgeons to the rapidly evolving landscape of cancer diagnosis, treatment and research.

### 3.2.2. PLAN FOR DISSEMINATION AND/OR EXPLOITATION AND DIALOGUE WITH THE GENERAL PUBLIC OR POLICY

To achieve maximum impact and outreach, the network will capitalize on partnerships with established cancer surgery organizations such as the European Society of Surgical Oncology (ESSO) to disseminate the outcomes of this Action. DISSECT will coordinate with ESSO to potentially organise some of its scientific and core group meetings at the time of its annual congress attended by more than 1000 surgical oncologists from Europe and other countries.

DISSECT will be engaged in social media and will optimize in-person and virtual meetings, workshops, and focused group discussions to animate its stakeholders. There will be a special focus on involving patient advocates as well as academic and industry partners to facilitate meaningful exchanges and potential joint projects. These events will be summarized and accompanied by analytics and Key Performance Indicators (KPIs) to improve the Action's educational portfolio. Dissemination of information and dialogue with the public will use:

- **A dedicated DISSECT website** which will feature its aims, work packages, activities and progress reports. It will highlight the involvement of the young surgeons leading the different activities.
- **E-newsletters and press releases** at least twice a year
- **"E-blast" through different social media platforms** focusing on the importance of improving cancer surgery training and research
- **6 monthly webinars** with a panel discussion involving multidisciplinary experts, industry and patient partners
- at least **two scientific meetings** for the consortium
- at least **five publications** in an open access peer-reviewed journal
- **Patient-friendly communication co-developed with patient partners** highlighting the impact of improving cancer surgery training on patient's clinical outcomes

**Dissemination of results and promotion of (public) awareness**

The Action will disseminate the results of relevant research and upcoming outreach activities (i.e. talks by experts, meetings, etc.) through publication in scientific journals, relevant websites, social media and on its own website news and/or research areas where it can be accessed quickly and freely by medical professionals and interested patient groups. The Action will organise meetings for dissemination of guidelines and scientific results. The Action's members will be encouraged to attend conferences to represent the Action and to present results obtained through cooperative work at relevant conferences. The achievement of the Action will be quantified according to the following metrics:

• Number of active partners
• Geographic and demographic balance
• Number of Young Researchers and Innovators (YRI) and ITCs/NNCs/IPCs involved
• Number of meetings, training schools, and STSMs
• Number of collaborative research projects and joint publications

Special attention will be given to encouraging participation opportunities and to creating new opportunities for YRIs, such as training schools and STSMs, thereby securing the future through involving the best and the brightest experts in the field. In order to monitor effectiveness and outcomes, appropriate measures will be determined, such as the number of participating members and their geographic and demographic range.

# 4. IMPLEMENTATION

## 4.1. COHERENCE AND EFFECTIVENESS OF THE WORK PLAN

### 4.1.1. DESCRIPTION OF WORKING GROUPS, TASKS AND ACTIVITIES

| Working Group | Main Task / objectives | Activities |
|---|---|---|
| **1 - Identification & Evaluation of Disparities** | Identify **five priority areas** of disparities in cancer surgery training where collaboration from high and lower resource settings can have meaningful impact.<br><br>Evaluate how disparities in cancer surgery training **impact patient outcomes**<br><br>Understand the current treatment protocols for specific cancers and how surgical trainees can best learn optimal patient care from **clinical practice guidelines** adapted to their local settings | Perform a survey on the different cancer surgery training programs in terms of:<br>Cancer surgery curriculum<br>Surgical technique development<br>Rotations across subspecialties<br><br>Perform a survey on the technical and research skills, career development needs, and expectations of surgical oncology residents.<br><br>Develop a roadmap to address critical areas of disparities in cancer surgery training and assess its impact. |
| **2 - Building research capacity** | Empower surgeons with the technical knowledge and organizational skills to **engage in pragmatic and patient-centred cancer research**<br><br>Integrate the **patient perspective** in cancer surgery research<br><br>Foster **collaboration between HICs and LMICs** to increase surgical research capacity<br><br>**Facilitate long-term research mentorship** between expert academic surgeons and trainees (through close collaboration with work package 3: Surgical Mentorship) | Develop a research learning pathway tailored for surgeons including the following topics:<br>Basics of biostatistics<br>Critical evaluation of levels of evidence<br>Developing clear, patient-centred research questions<br>Pragmatic study designs<br>Developing systematic reviews and meta-analyses, surveys and pragmatic data collection methods<br>Writing a full protocol and IRB submission file<br>Data analysis, presentation of results, writing and publishing a paper<br>Establishing collaborations with academia, industry, patient partners<br>Writing grant applications |
| | | Practical considerations in running clinical trials |

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| **3 - MDT knowledge exchange** | **Analyse variation** in the structure and accessibility of MDT (i.e. surgeons, radiologists, pathologists, oncologists, nurses, researchers, patients) meetings across our network<br><br>**Foster interaction** and collaboration between MDTs from **HIC and LMICs**<br><br>**Improve access** to the educational aspects of MDT meetings across our network<br><br>**Assess the impact** of our interventions on MDT structure and trainee access to MDT meetings | Perform a needs assessment survey across our network, investigating variations in the use of MDT meetings in different resource settings and across different tumour types.<br><br>Develop an MDT fellowship programme, with a pool of host specialist cancer centres for MDT members from low resource settings<br><br>Establish a regular programme of virtual MDT meetings, which will be accessible across our network<br><br>Repeat the initial survey-based study across our network at key time points during the grant period |
| **4 - Surgical Mentorship** | **Develop a sustainable mentorship program** focused on developing cancer surgery technical skills, decision-making, and research skills<br><br>**Train** young surgeons to become **effective leaders and communicators** in daily clinical practice, within multidisciplinary teams and healthcare systems | Establish a pool of trainees and mentors that can be matched based on demographic profiles, technical training skills, career development needs/expectations, and area of expertise<br><br>Connect young surgeons with experienced surgical oncologists (matched-mentorship program) to facilitate knowledge transfer, skills development, and career guidance through virtual or in-person meetings<br><br>Foster collaboration between work packages on research and innovation to co-develop respective mentorship programs |
| **5 - Innovation** | **Establish a Training School** that will utilize **artificial intelligence (AI)** based-technologies and strategies to close the gaps in surgical oncology training<br><br>**Evaluate how these tools can help improve patient outcomes**<br><br>**Develop a training school for technological innovation** that will promote precision cancer surgery and optimal care for patients | Conduct virtual forums and podcasts on artificial intelligence (AI) to:<br>Foster understanding and help members understand the potential of AI in surgical oncology<br>Discuss ethical implications and data privacy concerns: FAIR, CARE GDPR and HIPAA<br>Equip members with the basic knowledge to work in an AI- driven healthcare environment<br><br>Conduct practical skills workshops to teach members how to use AI tools effectively.<br><br>Development of a surgical remote telementoring program. |

4.1.2. DESCRIPTION OF DELIVERABLES AND TIMEFRAME

| Working Group | Deliverables | Timeframe |
|---|---|---|
| **1 - Identification & Evaluation of Disparities** | One online survey to identify disparities in cancer surgery training, their degree and their main courses.<br><br>A focused group discussion to assess critical areas of priorities and develop a roadmap to address the disparities<br><br>One report on priority areas and roadmap for addressing disparities | **Year 1** - development and rollout of survey on disparities with report on priority areas<br><br>**Year 2** - focused group discussion during the Action meeting with report of roadmap and proposals to address disparities<br><br>**Year 3** - manuscript writing<br><br>**Year 4** - final report on outcome of proposals |
| **2 - Building research capacity** | Virtual journal club: critical appraisal; endpoints relevant for patients<br><br>Workshop on basic cancer research biostatistics; basics of pragmatic study designs and randomized clinical trials integrating patient-centric questions; developing good survey questions; perform systematic reviews and meta-analyses<br><br>Workshop on writing a study protocol, basics of translational research; develop informed consents, ethical, regulatory and data privacy requirements in research; patient involvement in surgical research<br><br>Workshop development of case report forms; integrating quality of life data or patient reported outcomes; strategies for patient recruitment and retention<br><br>Workshop on data analysis and visualization; presenting and writing results; practical aspects of academic and industry collaborations; cost drivers of research; grants writing skills; funding surgical research<br><br>Report on the number of research outputs developed within DISSECT<br><br>Manuscript on the impact of research learning pathways for surgeons | **Year 1** - conduct the virtual journal club and workshop on basics of cancer research<br><br>**Year 2 -** conduct a workshop on writing a protocol and informed consent<br><br>**Year 3 -** conduct a workshop on data collection; patient recruitment<br><br>**Year 4 -** conduct a workshop presenting and publishing research, harnessing collaborations and funding strategies<br><br>Final report on total number of new research activities developed within DISSECT<br><br>Manuscript on the impact of research learning pathways for surgeons |

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| **3 - MDT knowledge exchange** | Develop and execute a survey-based study on variability in MDT meetings across the network.<br><br>Develop a short-term MDT fellowship programme between HIC and LMICs. Hosting agreements with HICs and development of a fellowship-specific curriculum.<br><br>Develop an educational virtual MDT platform, held at least two times a year<br><br>Report on the formal assessments of the impact of the above interventions including:<br>a repeat of the initial MDT survey to assess subsequent access to MDT meetings<br>reports from MDT fellows on the experience and outcome of their fellowships<br>attendance records and feedback form from the educational virtual MDT platforms | **Year 1**<br>Design, execution and subsequent publication of a report on variability in MDT meetings.<br><br>**Year 2**<br>Finalisation of the MDT fellowship programme and enrolment of the first MDT-fellows. Enrolment will continue during the grant period<br><br>Organisation of the first virtual MDT meetings, which will continue on a quarterly basis during the grant period<br><br>**Year 3**<br>Attendance records and feedback forms from the virtual educational MDT programme. These will be assessed continually during Years 3 & 4<br><br>Reports from MDT fellows to be completed within 6 months of the end of each fellowship.<br><br>**Year 4**<br>Execution and subsequent publication of follow-up surveys on access to MDT meetings across the network |
| **4 - Surgical Mentorship** | Needs assessment survey and database development of potential mentors and mentees<br><br>A structured and sustainable mentorship framework focusing on research, innovation, leadership and communication for surgeons<br><br>Training courses on “soft skills”: networking, team management, leadership, communication, negotiation, motivation, active listening, conflict management, overcoming failures<br><br>Workshop for surgeons as leaders of innovation, quality improvement, and healthcare systems<br><br>A report and manuscript on the mentorship program, summarizing outcomes, challenges, and recommendations for future iterations. | **Year 1** - needs assessment survey, development of the mentorship database and framework<br><br>**Year 2** - Webinars on communication, active listening, overcoming failures, motivation<br><br>**Year 3** - Training workshop soft skills<br><br>**Year 4** - Workshop on surgeons as leaders of innovation, quality improvement and healthcare systems in collaboration with work package 5 (surgical innovation)<br><br>Report and manuscript about the feedback of mentors and trainees |
| **5 - Innovation** | Develop a Training School for Integrating AI in precision cancer surgery focused on the following: Multidisciplinary workshops | **Year 1**<br>Introduction to AI medical imaging and large language models for surgeons |

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| | on precision surgery (surgery and molecular imaging)<br>AI in medical imaging<br>Large Language Models in Surgery<br>AI-assisted surgical planning<br>Robotic surgery with AI<br>AI for predicting treatment outcomes<br><br>Focused group discussions and podcast with virtual agents to develop a program for surgical telementoring | Focused group discussion to develop a pilot program for surgical telementoring, including a surgical podcast<br><br>**Year 2**<br>Basics of Molecular Imaging for surgeons<br>Fluorescence guided surgery<br><br>**Year 3**<br>AI-assisted surgical planning Robotic surgery with AI<br><br>**Year 4**<br>AI for predicting treatment outcomes<br>Surgical telementoring pilot test |

4.1.3. RISK ANALYSIS AND CONTINGENCY PLANS

| Working Group | Risk Analysis | Contingency Plans |
|---|---|---|
| **1 - Identification & Evaluation of Disparities** | Lack of responses to surveys<br><br>Lack of diversity among the responses on the surveys | Dissemination of the surveys and information on the focused group discussion will be shared through various digital platforms, and collaborating networks beyond surgical specialists |
| **2 - Building research capacity** | Financial demands related to face-to-face research workshops<br><br>Knowledge translation gap between the workshop and daily clinical practice. Young surgeons may find it difficult to translate newly gained research skills into real outputs.<br><br>Participants may struggle to develop high-quality research projects or collaborate effectively, limiting the program's research capacity-building objectives. | Early identification of easily-accessible locations in more affordable countries for in-person meeting; use of virtual platforms to conduct the workshops; organize the workshops on the same dates as major surgical oncology conferences to maximize participation<br><br>Pair trainees with experienced research mentors to guide them in project development and execution.<br><br>Encourage cross-institutional research collaborations to diversify expertise and resources, making research projects more feasible. |
| **3 - MDT knowledge exchange** | Potential risks of non-representative results of the survey study due to variability in participation across the network.<br><br>Lack of engagement in the MDT-fellowship programme from potential fellows | Use the network's local representatives to promote and encourage participation in the survey at a local level as well as advertising it in newsletters, social media etc.<br><br>Development of fellowship grants, covering travel and accommodation costs in addition to advertisement of the |

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| | Time zone differences, conflicting schedules, and limited institutional participation could affect the regular organization of joint MDT sessions. | fellowships using the strategies named above.<br><br>Develop a rotating schedule for MDT meetings to accommodate participants from different regions and time zones.<br><br>Record MDT sessions for participants unable to attend live discussions, allowing them to review cases and offer input afterward.<br><br>Encourage institutions to nominate multiple representatives to ensure consistent attendance at MDT sessions.<br><br>Set up dedicated coordination teams at each participating institution to ensure smooth scheduling and communication. |
| **4 - Surgical Mentorship** | Limited participation from experienced surgical oncologists due to time constraints or competing professional commitments may affect the quality and scale of the mentorship program. | Engage with professional societies (e.g., European Society of Surgical Oncology) to identify and recruit additional mentors<br><br>Create a flexible mentorship schedule, allowing mentors to contribute based on their availability.<br><br>Use virtual platforms to reduce time and logistical constraints for mentor involvement.<br><br>Develop a rotation system among mentors to balance workloads and ensure consistent engagement.<br>Increase targeted outreach through medical institutions, professional societies, and conferences to raise awareness about the benefits of the program. |
| | The program may face challenges in attracting young surgeons and trainees, especially from lower-resource countries, due to lack of awareness, language barriers, or perceived lack of benefits. | Offer incentives such as certificates, access to professional networks, and potential research opportunities to motivate participation.<br><br>Provide language support and use clear, simple communication materials to ensure inclusivity for non-native English speakers. |
| | Sustaining consistent engagement from both mentors and mentees over the four-year program period may become challenging as initial enthusiasm wanes. | Regularly assess the mentorship program's impact through surveys and feedback to adapt the structure and content based on participants' needs.<br><br>Introduce incentives such as awards or recognition for active participation in the program. |

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| **5 - Innovation** | **Lack of AI knowledge**: Surgeons may have little to no experience with AI technology, which could result in confusion or resistance to adopting AI in their practices. | **Pre-workshop materials**: Provide introductory resources (tutorials, videos, reading materials) to prepare attendees for AI concepts ahead of time. Offer basic AI modules. |
| | **High learning curve**: AI concepts, machine learning models, and technical jargon might be difficult for surgeons to grasp in a short period. | **Hands-on learning**: Focus on practical, hands-on demonstrations and simulations, showing how AI directly benefits surgical planning, decision-making, or outcomes. |
| | **Scepticism about AI**: Surgeons may be sceptical about the benefits and trustworthiness of AI, especially if they feel it challenges their expertise or decision-making. | **Clear communication**: Emphasize that AI is a supplementary tool that enhances, rather than replaces, the surgeon's expertise. Include examples where AI has proven beneficial in surgical applications. |
| | **Patient data security**: AI systems rely heavily on large datasets, often involving sensitive patient information. Mishandling of this data could lead to privacy breaches or legal issues. | **Data anonymization training**: Teach best practices for de-identifying patient data when using AI systems. Ensure compliance with privacy laws like HIPAA (US) or GDPR (EU). |
| | **Technical issues** with virtual reality (VR), augmented reality (AR), or video conferencing platforms could disrupt training sessions or mentor-mentee interactions. | Implement alternative teaching methods, such as video tutorials or recorded sessions, to ensure continued training if live virtual sessions are disrupted.<br><br>Develop a backup option using traditional methods (e.g., case study reviews, recorded lectures) in case of prolonged technical failures. |

## 4.1.4. GANTT DIAGRAM

| DISSECT COST Action GANTT Chart | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| **Management Committee** | | | | | | | | | | | | | | | | |
| Creation of the Core Group and election of members | | | | | | | | | | | | | | | | |
| Regular meetings (face-to-face or conference call) | | | | | | | | | | | | | | | | |
| Yearly face-to-face meetings for all MC members to attend | | | | | | | | | | | | | | | | |
| Annual progress report | | | | | | | | | | | | | | | | |
| **Core Committee** | | | | | | | | | | | | | | | | |
| Main website creation | | | | | | | | | | | | | | | | |
| E-newsletters and press releases | | | | | | | | | | | | | | | | |
| Management of application for new members | | | | | | | | | | | | | | | | |
| STSM candidate selection and training | | | | | | | | | | | | | | | | |
| **WG1 Identification G Evaluation of Disparities** | | | | | | | | | | | | | | | | |
| Development and roll out of survey on disparities | | | | | | | | | | | | | | | | |
| Focused group discussion to assess critical areas of priorities and develop a roadmap to address the disparities | | | | | | | | | | | | | | | | |
| Manuscript writing | | | | | | | | | | | | | | | | |
| Final report on outcome of proposals | | | | | | | | | | | | | | | | |
| **WG2 Building Research Capacity** | | | | | | | | | | | | | | | | |
| Conduct of virtual journal club and workshop on basics of cancer research | | | | | | | | | | | | | | | | |
| Workshop on writing a protocol and informed consent | | | | | | | | | | | | | | | | |
| Workshop on data collection; patient recruitment | | | | | | | | | | | | | | | | |
| Workshop on presenting and publishing research, harnessing collaborations and funding strategies + manuscript on the impact of research learning pathways for surgeons | | | | | | | | | | | | | | | | |
| **WG3 Multidisciplinary Team (MDT) Knowledge Exchange** | | | | | | | | | | | | | | | | |
| Design, execution and subsequent publication of a report on variability in MDT meetings | | | | | | | | | | | | | | | | |
| Finalisation of the MDT fellowship programme and enrolment of the first MDT-fellows | | | | | | | | | | | | | | | | |
| Holding of the first virtual MDT meetings, which will continue on a quarterly basis during the grant period | | | | | | | | | | | | | | | | |
| Process attendance records and feedback forms from the virtual educational MDT programme | | | | | | | | | | | | | | | | |
| Execution and subsequent publication of follow-up surveys on access to MDT meetings across the network | | | | | | | | | | | | | | | | |
| **WG4 Surgical Mentorship** | | | | | | | | | | | | | | | | |
| Needs assessment survey, development of the mentorship database and framework | | | | | | | | | | | | | | | | |
| Webinars on communication, active listening, overcoming failures, motivation | | | | | | | | | | | | | | | | |
| Training workshop soft skills | | | | | | | | | | | | | | | | |
| Workshop on surgeons as leaders of innovation, quality improvement and healthcare systems in collaboration with work package 5 (surgical innovation) | | | | | | | | | | | | | | | | |
| Report and manuscript about the feedback of mentors and trainees | | | | | | | | | | | | | | | | |
| **WG5 Innovation** | | | | | | | | | | | | | | | | |
| Workshop: Introduction to AI medical imaging and large language models for surgeons | | | | | | | | | | | | | | | | |
| Focused group discussion to develop a pilot program for surgical telementoring, including a surgical podcast | | | | | | | | | | | | | | | | |
| Workshop: Basics of Molecular Imaging for surgeons & Fluorescence guided surgery | | | | | | | | | | | | | | | | |
| Workshop: AI-assisted surgical planning & Robotic surgery with AI | | | | | | | | | | | | | | | | |
| Workshop: AI for predicting treatment outcomes& Surgical telementoring pilot test | | | | | | | | | | | | | | | | |

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