Mission Cancer Experience and Lessons Learned

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#MISSIONITALIA HORIZON EUROPE
Info day nazionali sui bandi EU MISSIONS 2024
INTEGRATION BETWEEN ACADEMIC RESEARCH & CLINICAL RESEARCH GOES BEYOND THE CITY LEVEL – Emilia-Romagna Region

Bologna is a HUB acting as an ECOSYSTEM OF INTEGRATED BASIC & CLINICAL RESEARCH EMBEDDED IN A WIDER REGIONAL SYSTEM OF ACADEMIA & RESEARCH HOSPITALS
MISSION ON CANCER FEDERATED NETWORK: THE GOAL

BBMRI-ERIC
Biobanking and BioMolecular resources Research Infrastructure

ERAPerMed

ICPerMed
INTERNATIONAL CONSORTIUM

elixir

ECRIN
EUROPEAN CLINICAL RESEARCH INFRASTRUCTURE NETWORK

PERMIT
PERsonalised Medicine Trials

CanCon
Cancer Control Joint Action

EuroBloodNet

eatris
European infrastructure for translational medicine

European Reference Network for rare or low prevalence complex diseases
Network Paediatric Cancer (ERN PaedCan)

European Reference Network for rare or low prevalence complex diseases
Network Genetic Tumour Risk Syndromes (ERN CENTURIES)

encca
European Network for Cancer research in Children and Adolescents

ALMA MATER STUDIORUM UNIVERSITÀ DI BOLOGNA
Cancer Research @UNIBO: Publications

UNIBO PUBLICATIONS ON «CANCER»*
Temporal framework 2013-2023:
1,085 publications

671 of which in Open Access journals

*Data from Scopus
Cancer Prevention at Work (CPW) is an EU-funded project comprised of 19 European organisations that addresses the implementation of surveillance protocols targeting major infection-related cancers into primary occupational health surveillance programs.

We are assessing the efficacy and cost-effectiveness of incorporating Helicobacter pylori (Hp), Hepatitis C virus (HCV), and Human Papillomavirus (HPV) prevention into on-going occupational surveillance schemes, by engaging with local and regional-level stakeholders.
CPW: approach

Pilot study on Hepatitis C virus (HCV)
HCV screening and treatment as primary prevention of liver cancer within occupational health surveillance programs.

Pilot study on Human Papillomavirus (HPV)
Vaccination as primary prevention of HPV infection and its complications, within occupational health surveillance programs.

Pilot study on Helicobacter pylori (Hp)
Hp screening and eradication as primary prevention of stomach cancer within occupational health surveillance programs.
In Europe, cancer is responsible for 1.3 million deaths each year and up to 50% of cases are considered preventable. Through its Mission Cancer programme, the European Union is **funding six innovative projects** in the field of prevention and early detection. They all share a common goal: to improve cancer screening and save millions of lives.

The Prevention and Early Detection Cluster is a collaborative effort where all members work together to extend the reach and impact of each other’s research.

The cluster consists of the following projects: CPW, CO-CAPTAIN, ONCODIR, PIECES, PREVENT and 4P-CAN; funded under the same call with the objective of maximising overall impact.
Lessons learned and tips

1. Multidisciplinary Collaboration
   - **Experience:** The project involves collaboration between stakeholders from diverse fields, including public health, occupational health, workplace safety, and cancer research.
   - **Lesson:** Future project coordinators should prioritize building strong partnerships and engaging stakeholders with complementary expertise. Multidisciplinary collaboration fosters innovation, facilitates knowledge exchange, and ensures that interventions are evidence-based and contextually relevant.

2. Community Engagement and Participation
   - **Experience:** The project actively engages employees, employers, unions, healthcare providers, and policymakers in the design and implementation of cancer prevention initiatives.
   - **Lesson:** Meaningful engagement of stakeholders is essential for project success. By involving community members in decision-making processes, project coordinators can build trust, enhance program acceptability, and mobilize support for sustainable interventions.

3. Tailored Interventions and Contextual Adaptation
   - **Experience:** The project implements tailored interventions to address specific workplace contexts, occupational hazards, and employee needs.
   - **Lesson:** One-size-fits-all approaches may not be effective in diverse workplace settings. Future project coordinators should conduct thorough needs assessments and feasibility studies to understand local priorities, barriers, and facilitators. Adapting interventions to the unique characteristics of each workplace increases relevance and uptake.

4. Capacity Building and Knowledge Transfer
   - **Experience:** The project provides training, resources, and technical assistance to support capacity building among employers, employees, and healthcare providers.
   - **Lesson:** Investing in capacity building is crucial for sustainable impact. By empowering stakeholders with knowledge and skills, project coordinators can promote ownership, foster long-term behavior change, and facilitate the dissemination of best practices beyond the project lifespan.
Lessons learned and tips

5. Monitoring, Evaluation, and Continuous Improvement
   - **Experience**: The project implements robust monitoring and evaluation mechanisms to assess program effectiveness, monitor progress, and identify areas for improvement.
   - **Lesson**: Monitoring and evaluation are essential components of project management. Future project coordinators should establish clear indicators, data collection tools, and evaluation frameworks from the outset. Regularly reviewing performance metrics and soliciting feedback from stakeholders allows for iterative improvements and informed decision-making.

6. Advocacy and Policy Influence
   - **Experience**: The project advocates for policy changes and workplace regulations to support cancer prevention efforts.
   - **Lesson**: Project coordinators have the opportunity to influence policy at local, national, and international levels. By engaging policymakers, disseminating evidence, and mobilizing advocacy efforts, projects can catalyze systemic changes that promote health equity and population-wide impact.

7. Knowledge Sharing and Dissemination
   - **Experience**: The project disseminates findings, best practices, and lessons learned through various channels, including conferences, publications, toolkits, and online platforms.
   - **Lesson**: Effective dissemination is essential for maximizing the reach and impact of project outcomes. Future project coordinators should develop comprehensive dissemination plans that target diverse audiences and utilize multiple communication channels. Sharing successes, failures, and actionable insights contributes to collective learning and replication of effective strategies.
Thank you
Conclusioni
TAKE HOME MESSAGES

• The Horizon Europe Mission on Cancer calls for a multi-disciplinary, cross-institutional and trans-sectoral approach bringing together BASIC and CLINICAL/APPLIED RESEARCH

• The Research Hospitals (IRCCS) in the Bologna Metropolitan Area are the perfect setting to bring basic research in close contact with real clinical issues

• By maintaining a close link with the clinical needs, academic research can stay focused and avoid research-oriented speculations, addressing real needs

• It is fundamental to aim at achieving a strong, patient-oriented social impact with cancer research

• The overarching goal is to facilitate the integration between academia and Research Hospitals, taking advantage of the privileged situation and potential of the Bologna Metropolitan Area
Integrazione della ricerca di base e clinica in ambito oncologico: il sistema bolognese UNIBO – IRCCS metropolitani

L’esempio di Mission Cancer: mappatura di competenze e risorse congiunta UNIBO – IRCCS metropolitani

Asset UNIBO in ambito oncologico: network, pubblicazioni, brevetti

Progettualità UNIBO in ambito oncologico: Cancer Prevention at Work (CPW)

Lezioni apprese

Conclusioni
Integrazione della ricerca di base e clinica in ambito oncologico: il sistema bolognese UNIBO – IRCCS metropolitani
The MISSION ON CANCER ASKS FOR...
AN INTERDISCIPLINARY AND INTER-SECTORIAL CHALLENGE
WHICH REQUIRES A FEDERATED TERRITORIAL INTERVENTION

Integration between the biomedical, fundamental and the clinical research in our LOCAL ENVIRONMENT (BOLOGNA TERRITORIAL DIMENSION) finds an ENDOGENOUS INTER-INSTITUTIONAL SYSTEM which leads to a FEDERATED NETWORK OF SKILLS & INFRASTRUCTURES

CLINICAL AND POPULATION LONGITUDINAL STUDY DATASET HARMONIZATION

LONGITUDINAL STUDIES AND FEDERATED BIOBANKING SYSTEMS

INTEGRATION OF BIOMEDICAL & CLINICAL COMPONENTS WITH DIGITAL INFRASTRUCTURES AND SKILLS
MISSION ON CANCER: CHALLENGES

✓ This Mission is a basis for stakeholders, including patients, survivors, carers and the wider public, and citizen engagement activities

✓ The Mission asks for synergies to be developed coherently with national cancer plans and other programs of Member States

✓ The Mission aims at synergies fostered on the territorial level through the integration of different stakeholders facilitating the exchange between basic fundamental research, translational medicine and clinical application

The TERRITORIAL STRATEGY: HOW TO MEET THE CHALLENGES

✓ To reach the critical mass of researchers involved in CANCER RESEARCH via a COORDINATED ACTION PLAN at both the UNIVERSITY and/or IRCCS

✓ To create a BOLOGNA CANCER RESEARCH ECOSYSTEM by facilitating joint and complementary networking and alignment with strategic partnerships and networks active in the MISSION CANCER framework

✓ To approach the MISSION ON CANCER recommendations and specific actions → PRE-SCREENING and RATIONAL ORGANIZATION of the portfolio of RESEARCH SKILLS AND INFRASTRUCTURES of the entire BOLOGNA INTEGRATED cancer research community (federated biobanks; federated datasets...)
WHY do we need to INTEGRATE CANCER ACADEMIC AND TRANSLATIONAL RESEARCH?

The latest regional and National guidelines identify in translational research the core activity of a Scientific Research Hospital (IRCCS). IRCCSs must, in fact, serve as a link between scientific research and the treatment of patients.
UNIBO & IRCCS: an INTEGRATED TERRITORIAL SYSTEM

OBJECTIVES:

➢ To enhance intervention complementarities
➢ To increase datasets & biobanks federation
➢ To reach a territorial critical mass → impact on the EU Mission Cancer’s community is higher than with single institutions
➢ To mirror the integration of the territorial basic-translational-clinical research priorities to the Mission on CANCER recommendations
➢ To establish basic Research as guidance for patient-centered treatments
Cancer Research @UNIBO: Strategy (HOW)

1. UNIBO INTERNAL COORDINATION & CRITICAL MASS (FROM THE BASELINE TO A SYSTEMIC OVERVIEW)

2. TERRITORIAL SYNERGIES

3. NATIONAL COMPLEMENTARITIES & FUNDINGS (National cancer plans and other programmes of MS)

4. EUROPEAN NETWORKING & FEDERATED BIOBANKING & DATASETS SHARING
Cancer Research @UNIBO: Strategy (WHO)

Mission on Cancer

UNIBO Research Community

Critical Mass & Systemic Institutional Research Potential

Thematic Catalyzer

Thematic Group (GTA) Health

Research Area

Organization & Support
RESULTS of a UNIFIED VISION

I. MAPPING of Cohorts, Datasets, Patents, Projects on Cancer at the UNIVERSITY & HOSPITAL LEVEL

II. COORDINATED INTEGRATION OF PROJECTS AND PATENTS OF THE BIOMEDICAL, CLINICAL & DIGITAL HEALTH at UNIVERSITY & HOSPITALS LEVEL for PROMOTIONAL AND NETWORKING PURPOSES

III. SET UP of A SINGLE ANNUAL REVIEW OF UNIBO & IRCCS INTERESTS ON MISSION CANCER SPECIFIC ACTIONS

IV. CREATION of a UNIBO & IRCCS INTEGRATED COMMUNITY ACTIVE ON THE MISSION CANCER RECOMMENDATIONS
Asset UNIBO in ambito oncologico: network, pubblicazioni, brevetti
UNIBO HEALTH PARTNERSHIPS & NETWORKS

Collaborating for Digital Health and Care in Europe
ELO working group: Network of eHealth competence centres

nanomedicine
EUROPEAN TECHNOLOGY PLATFORM

EHTEL
Collaborating for Digital Health and Care in Europe
ELO working group: Network of eHealth competence centres

HL7 Italia

eP TRI
EUROPEAN PEDIATRIC TRANSLATIONAL RESEARCH INFRASTRUCTURE

BBMRI.it
Biobanking and BioMolecular Resources Research Infrastructure of Italy

The Guild of European Research-Intensive Universities
Health Deans Group

LifeTime

RESE

STORE
Cancer Research @UNIBO: Patents

A Multidisciplinary Patent Portfolio

- Method for classifying a lesion as a uterine leiomyoma or as a uterine leiomyosarcoma
- Phages for targeting tumoral cells expressing GD2
- PCR Primer designed for genotyping of ODC1 +316 A/G SNP in patients affected by cancer diseases
- Method for melanoma prognosis
- Bionanofenretinide as new antitumoral formulation
- New compounds for cancer diagnosis and treatment
- Phage vector platform for applications and SDT
- New antitumoral formulation
- Prognostic method for identifying, from a blood sample, patients at low-risk and high-risk of developing colorectal cancer
- New diagnostic method and kit for diagnosis of colorectal cancer from blood sample
- Microorganism which reduces the amount of acrylamide in a thermally treated food
- Type II topoisomerase inhibitors
- Method for early detection of Head and Neck Squamous Cell Carcinoma
- Method and diagnostic kit for identification of PTCL subtypes
- Catalyst additive for hybridization reactions
- Compounds for therapeutic use
- Sub-micrometer system comprising nanoparticles of magnesium
- Innovative analytical method for the identification and quantification of drugs
- Cell line of mammary carcinoma of mouse (TUBO)
- Multitarget FAAH and COX inhibitors
- Pharmaceutical composition and pharmaceutical kit for the treatment of hepatocellular carcinoma
Cohorts & population studies: Focus on CANCER cohorts

Colorectal Cancer
Hepatocellular Carcinoma
Breast & Gynecological Herpes tumors
Endometrial and Ovarian Cancer
Gastrointestinal Stromal tumors
EMC/DFSP
Cancer Pain
Hematopoietic paediatric cancer
Providing Cutting-Edge Cancer Research Services Across Europe:

canSERV is an EU-funded project under the Horizon Europe programme that provides cutting edge, interdisciplinary and customised oncology services across the entire cancer continuum. The aim is to offer a comprehensive portfolio of oncology-related research services available to all scientists in EU member countries, associated countries and beyond.

UNIBO Service Provider
Microbiome and bioinformatics analysis

UNIBO Service Provider at ATMA BBMRI-ERIC
EXPERT CENTRE on biomarker verification and validation
Cancer Research @UNIBO: Mission on Cancer outputs

Mappatura EoI sulle 13 aree di intervento, Biobanche, Registri su Mission Cancer

INSTITUTIONAL RESEARCH GROUP MAPPING

INSTITUTIONAL SYSTEMIC APPROACH

OUTPUTS (BOOKLET & COMMUNITY)

EXTERNAL PROMOTION & NETWORKING (TERRITORIAL, REGIONAL, IT, EU)

Conquering Cancer: Mission Possible

Horizon Europe
Mission Cancer @ UNIBO
Progettualità UNIBO in ambito oncologico:

Cancer Prevention at Work (CPW)

2023-27

This project has received funding from the European Union under grant agreement nº 101104716
CPW: facts in brief

Funding organization
CPW is funded under the EU grant agreement No. 101104716

Project duration
May 2023 - April 2027

EU Funding
5 801 577.50 €

Project coordinator
Prof. Paolo Boffetta, University of Bologna (UNIBO), IT
Incorporating Hp, HCV and HPV infection prevention into the schemes of ongoing occupational surveillance programs in selected European regions.

**Pilot studies**

Conduct a series of pilot studies in four European countries for assessing the effectiveness of incorporating primary prevention interventions related to three major carcinogenic infections into existing occupational surveillance programs.

**Identification of implementation barriers and facilitators**

Identify socio-cultural and behavioural barriers, bottlenecks and facilitators for the implementation of occupation-based cancer prevention interventions.

**Cost-effectiveness Assessment**

Assess the cost-effectiveness of incorporating primary cancer prevention interventions in ongoing occupational schemes and their potential scale-up to other sectors and Member States.

**Mission Cancer “Prevention and early detection” Cluster**

Get actively involved in the Mission Cancer “Prevention and Early Detection” Cluster, collaborating with the other projects (CPW, CO-CAPTAIN, ONCODIR, PIECES, PREVENT 4P-CAN) funded under the same call with the objective of maximising overall impact.
CPW: approach

Chronic infections are responsible for an estimated 13% of human cancers, from which HP, HCV, and HPV represent 75%.

Including non-occupational related health surveillance in primary occupational prevention programs can help reducing the burden of these cancers.

We will engage with representatives of relevant stakeholder groups for assessing the implementation of specific interventions for preventing infection-related cancers as part of the primary occupational health surveillance programmes.
We expect to contribute to the control and prevention of stomach, liver, cervical, and oropharyngeal cancers by assessing the implementation of HP, HCV, and HPV infections prevention into occupational health surveillance programs targeting workers from different types of industries and occupations.
Lezioni apprese
HOW WILL BE OUR RESEARCH DONE TOMORROW?

TOGETHER!