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Institut National du Cancer

SCIENTIFIC REPORT 2024

ACTIONS FOR CANCER RESEARCH

The French National Cancer Institute is the health and science agency in chage of cancer control.

Working group

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IT Cancer

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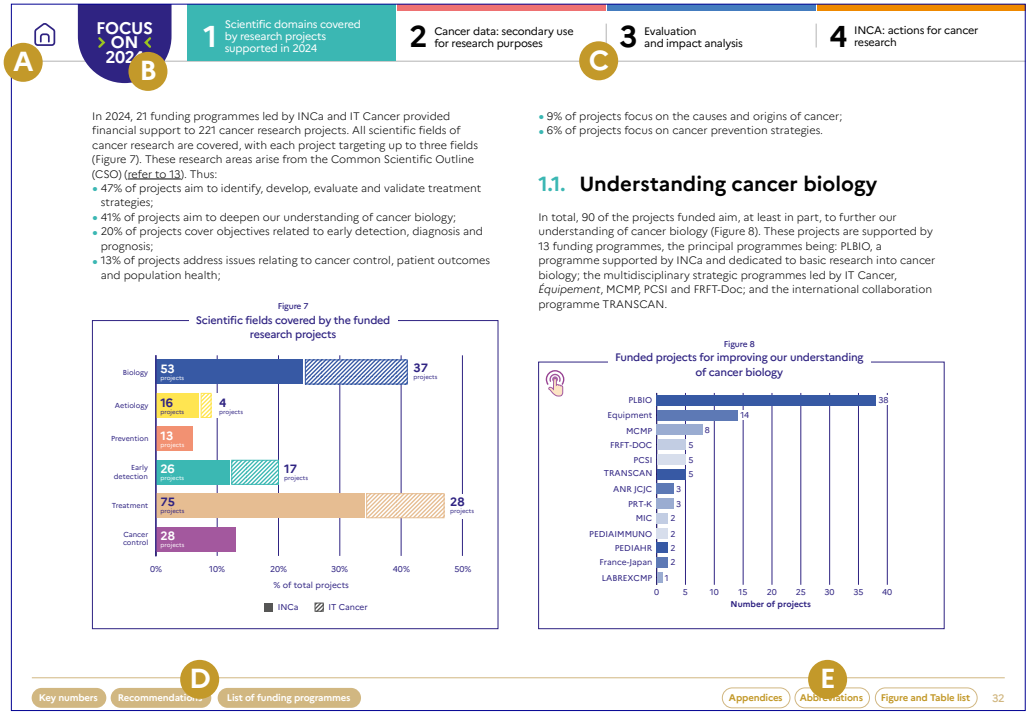
- **a horizontal navigation bar at the top of the document** providing direct access to the table of contents (A), the "Focus on 2023" section (B), and the four main parts of the report (C);
- **buttons located at the bottom of each page** for easy access to key figures, recommendations, and the list of funding programmes (D), as well as to the appendices, abbreviation, and list of figures and tables (E).



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Norbert Ifrah

Prof. Norbert Ifrah,
President of the French National Cancer Institute

The year 2024 marks the fourth year of the 2021-2030 Ten-Year Cancer Control Strategy. More than 200 of the 237 actions planned for the first five years have already been initiated or completed. These actions aim to strengthen prevention, to reduce after-effects and improve patient quality of life, to combat poor-prognosis cancers and to guarantee equitable access to innovation. In 2024, the Institute has actively supported and mobilised research, selecting and funding 241 projects, to fulfil the ambitions of this Strategy.

The designation of the first two research networks of excellence on poor-prognosis cancers – COALA, for lung cancer, and FRAP, for pancreatic cancer – constitutes a significant milestone in the structuring of research on these cancers. These networks bring together multidisciplinary teams with members involved in basic, clinical and translational research and in the human and social sciences, across the country.

The Institute has carried out two new waves of early-phase clinical research centre (CLIP^2) designation, to promote the access of a growing number of patients to therapeutic innovations. This initiative has supported eight specialised paediatric cancer centres and 19 specialised adult cancer centres. In addition, the pan-MSI cohort, which emerged from our AcSé programme for access to targeted therapies, was launched in 2024 to provide therapeutic options based on the molecular characterisation of patient tumours.

In 2024, the Institute continued its international collaboration efforts to ensure sustained effective funding for cancer research. The Institute has, thus, continued to participate to TRANSCAN, a network of 31 funding organisations from 20 countries supporting translational research. A bilateral partnership between the Institute and the Japanese research agency AMED has made it possible to co-fund joint research projects between teams of internationally renowned excellence based in these two countries. The Institute remains committed to two major international initiatives – Cancer Grand Challenges and G7 Cancer – to focus global resources and expertise on solving the most pressing challenges posed by cancer, such as developing effective therapies for paediatric cancers and accelerating research into young adults-affecting cancers as well as poor-prognosis cancers.

True to its commitment to support ambitious French research, the Institute continues to support its four flagship national programmes in cancer biology (PLBIO), translational research (PRT-K), clinical research (PHRC-K) and human & social sciences and public health (SHS-RISP). At the same time, efforts to structure and coordinate the ecosystem are continuing, to improve clarity, to strengthen synergies between teams and to maximise the benefits for patients and healthcare professionals alike.

The end of 2024 marked the start of a review phase, with the completion of the first roadmap of the Ten-Year Cancer Control Strategy in 2025. By assessing the progress made, we will be able to refine the strategic directions for the second roadmap, thereby ensuring that our research efforts remain relevant, effective and beneficial to society.

EDITORIALS

Bruno Quesnel

Cancer research remains a major priority of the Ten-Year Cancer Control Strategy. Numerous actions have been implemented over the first five years. However, scientific knowledge has progressed considerably since the development of this initial roadmap in 2020. Recent breakthroughs have been made in the areas of clonal evolution, somatic mutations in healthy individuals, and spatial multi-omics, for example. We are now incorporating these advances into the Ten-Tear Cancer Control Strategy, to refine our goals for its second phase.

The evaluation of the first roadmap by INCa's Scientific Advisory Board and input from the scientific community and exchanges with our partners – particularly those from the G7 Cancer Initiative and Cancer Grand Challenges – are enabling us identify actions with the greatest impact, with maximal leverage and synergy at both national and international levels.

Looking beyond the Ten-Year Strategy, we must also begin to envisage the ways in which these recent advances will shape the trajectories of cancer patients in the near future. Will they lead to incremental improvements in survival or to true cures? Will it become possible to intercept clonal evolution in healthy individuals before cancer is diagnosed? How can we prevent this clonal evolution altogether?

For more than a decade, the former ITMO Cancer of Aviesan supported various aspects of cancer research, focusing specifically on interdisciplinary approaches involving mathematics, physics, and chemistry, in close coordination with INCa. The Aviesan alliance ended in 2024, and the French biomedical research landscape has since been profoundly transformed. A new research agency, the *Agence de programmes de recherche en santé*, has been created and is now hosted by INSERM.

An upheaval of this magnitude requires time for the various stakeholders to establish new coordination mechanisms. This is particularly true in the field of cancer, in which INCa will be responsible for leading the Ten-Year Cancer Control Strategy. In the meantime, INSERM's Cancer Thematic Institute has taken over ITMO Cancer's activities to ensure a smooth transition to the new structure that will soon be established. This smooth transition is essential to maintain the effectiveness of collaborations between national research agencies and INCa in the future.

Prof. Bruno Quesnel,
Director of the Research and Innovation Division at the French National Cancer Institute and Director of the INSERM Cancer Thematic Institute

None of these actions would have been possible without the commitment of the staff of INCa, of INSERM's Cancer Thematic Institute and of the former members of ITMO Cancer, and the invaluable expertise of the members of the Scientific Advisory Board[2]. I would like to take this opportunity to thank them all for their unwavering commitment to our fight against cancer.

THE FRENCH NATIONAL CANCER INSTITUTE

The French National Cancer Institute, INCa, was created by the French Public Health Act of 9 August 2004. INCa's missions were defined with the French government, under the auspices of both the Ministry of Health and the Ministry of Research. In addition to state representatives, the Institute's board of trustees also includes charities, health insurance funds, hospital federations and research organisations.

As a State agency for scientific and health expertise in cancer, the Institute's mission is to develop, propose and implement cancer control strategies and measures, together with stakeholders from the health, social, economic and scientific fields. The Institute's areas of intervention range from prevention, screening, and research to care. Its actions therefore serve all French citizens: patients, their relatives, caregivers, users of the health system, the general population, health professionals, researchers and decision-makers.

The Institute is entrusted with the mission of ensuring the implementation of the 2021-2030 National Ten-Year Cancer Control Strategy.

The Institute's Research and Innovation Division sets and executes the national cancer research strategy. It does so by funding, structuring, coordinating and federating the research ecosystem.

INSTITUT THEMATIC CANCER (IT CANCER)

INCa's actions for cancer research are supplemented by a dedicated funding allocated to national research organisations (ONRs). Previously managed by *ITMO Cancer – Aviesan*, this fund is now overseen on a transitional basis by the *Institut Thematic Cancer* (IT Cancer) – the INSERM thematic institute for cancer – pending the establishment of an INCa/*Agence de programmes de recherche en santé* coordination structure. IT Cancer is also tasked with improving the performance, competitiveness and visibility of French research in the field. Over the years, successive cancer control plans and the Ten-Year Cancer Control Strategy have been entrusted to *ITMO/IT Cancer*, which has been responsible for programming and funding research in line with national strategic priorities.

OBJECTIVES AND STRATEGY FOR CANCER RESEARCH

The Ten-Year Cancer Control Strategy 2021-2030

France has adopted a 10-year national cancer control strategy, running from 2021 to 2030, to complement existing initiatives, measures and structural tools in the fight against cancer. The Institute is responsible for steering and monitoring this Strategy, which focuses on four main areas:

- Improving prevention
- Reducing after-effects and late effects and improving quality of life
- Combatting poor-prognosis cancers
- Ensuring that everyone benefits from progress

It targets **41 main topics** through a total of **237 specific actions**.

The Objectives and Performance Contract (COP)

The Objectives and Performance Contract (COP) records the implementation of INCa's missions as defined in its strategic and operational objectives. It takes into account the national strategy in research and health and is complementary to the Ten-Year Cancer Control Strategy.

This COP is an agreement drafted collaboratively between the Institute and the State.

Five main strategic priorities have been identified and translated into 24 operational objectives, as follows:

- Continuing the structuring and coordination of cancer control activities
- Improving anticipation and innovation capacities and promoting access to innovation
- Ensuring a high-quality service for each of the Institute's missions
- Reinforcing the Institute's contribution to European and International initiatives
- Strengthening the Institute's performance and efficiency

THE INTERNATIONAL SCIENTIFIC ADVISORY BOARD: OPINIONS AND RECOMMENDATIONS

The French National Cancer Institute's Scientific Advisory Board (SAB) is composed of internationally renowned experts appointed by joint decision of the French Ministers of Health and Research. The SAB issues advice and guidance relating to the strategy and action planning of the Institute, to address long-term cancer research challenges. Its missions, as defined by law, include:

- Ensuring the coherence of the Institute's scientific and medical policies;
- Reviewing the Institute's annual scientific report before its presentation to the Board of Directors;
- Making recommendations and providing opinions on the Institute's scientific strategy and its implementation.

This 19th report to the SAB reviews the actions of both INCa and IT Cancer. This report is the key element enabling SAB members to review the actions undertaken by the Institute for cancer research.

Members of the International Scientific Advisory Board

Prof. AGUIRRE-GHISO Julio A., PhD., Albert Einstein College of Medicine, Mount Sinai School of Medicine, New York, NY, USA
Dr. ALMOUZNI Geneviève, PhD, Institut Curie, Paris, France
Dr. BARILLOT Emmanuel, PhD, Institut Curie, Paris, France
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Prof. ZITVOGEL Laurence, MD, PhD, Gustave Roussy, Villejuif, France

2025 Scientific advisory board (SAB) recommendations

Reading the midterm reports of the Ten-Year Cancer Control Strategy, the SAB was impressed with what had been accomplished over the past 5 years. The SAB review reports on the 1st roadmap of the Strategy were submitted to INCa in June of 2025 with comments and recommendations as guidance for the 2nd roadmap.

The following feedback and recommendation focus on the discussions that took place at the SAB annual meeting and on the presentation by INCa of the draft 2nd roadmap of the Ten-Year Cancer Control Strategy.

1. **It was difficult for the SAB to identify if the recommendations of its review of the 1st roadmap were incorporated into the draft of the 2nd roadmap.**
   i. The SAB would have valued a more explicit discussion of, and response to, the recommendations made in the SAB June report. It is important for the SAB to understand how their recommendations contributed to the shape of the new roadmap. For that reason, the SAB would appreciate the chance to review a more detailed outline of the 2nd roadmap. Ideally, suggestions made by the SAB should be acknowledged and linked to the actions planned in the 2nd roadmap. The SAB understands incorporating all recommendations may not be feasible, but it is important to understand if and why such decisions are taken.
   ii. It seemed to the SAB that there was a disconnect between the *new research priorities* presented at the meeting and the new roadmap's priorities. Ideally the research priorities should be informed by the priorities of the strategic roadmap.
   iii. The SAB was disappointed that commitments for *prevention programs and research* were not mentioned in the presentation of proposed second roadmap and new research priorities. Prevention progress is of key importance to achieve the reduced cancer mortality and incidence articulated as strategic goals.

2. **The SAB suggests that the second roadmap include:**
   i. clear goals and rational associated to each priority area;
   ii. planned actions that will impact these goals and will help achieve success;
   iii. sorting of actions according to the impact they will have on the goals;
   iv. a clear interconnection between priorities for research and the strategic priorities;
   v. metrics that will help predict and evaluate the impact of the planned actions – and which will help track the achievement of targeted goals to ensure that implemented actions are leading to success.

3. **The SAB strongly recommends that expert scientific leaders be in place at INCa for each priority area of the new roadmap.**
   i. It seems to the SAB, that, while INCa staff are highly qualified and clearly devoted to achieving the strategic goals, INCa does not yet have "in-house" all of the expertise needed to accomplish the huge amount of work required by the Ten-Year Cancer Control Strategy. A clear examination of where gaps exist (e.g., prevention) should be followed by secondment of appropriate key experts (even part time) to work as part of the INCa team.
   ii. These additional experts should contribute to the detailed development of plans and actions.
   iii. Such recruitments via secondment should be seen as an investment and not an expense, to ensure success of the targeted objectives with the limited available budget.

FOCUS ON 2024

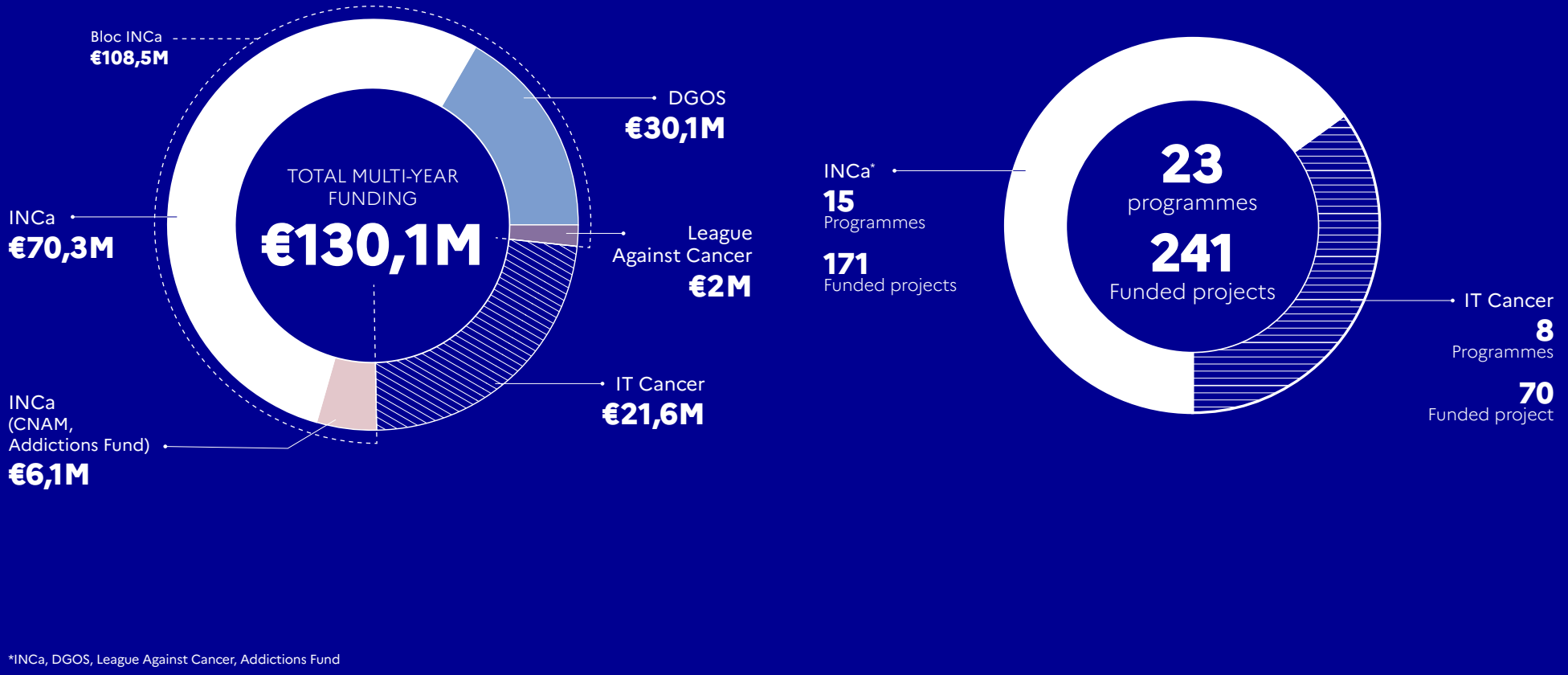
2024 in figures: support for cancer research

List of funding programmes managed in 2024

2024 Institute Highlights

2024 IN FIGURES: SUPPORT FOR CANCER RESEARCH

Figure 1a
Key Figures



*INCa, DGOS, League Against Cancer, Addictions Fund

Figure 1b

Key figure: Funding actually spent on cancer research from 2021 to 2024

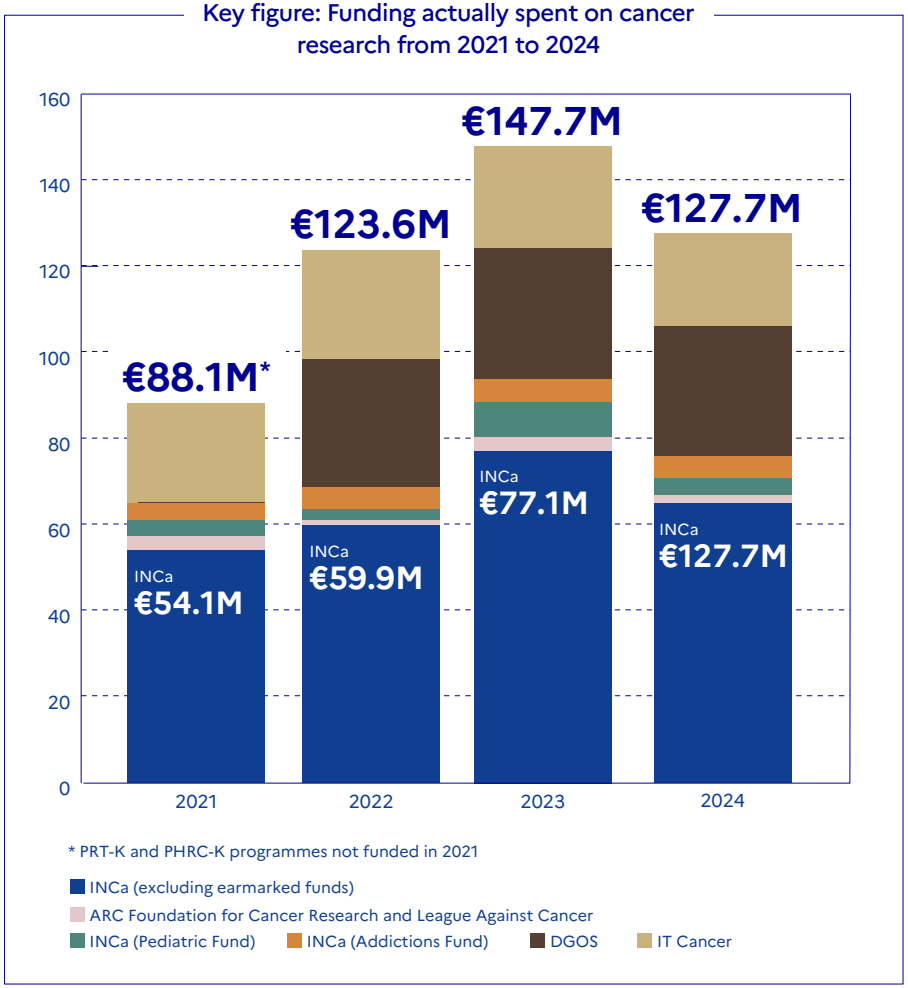


Figure 2a

Mullti-yeat funding for programmes managed in 2024
Programe type breakdown

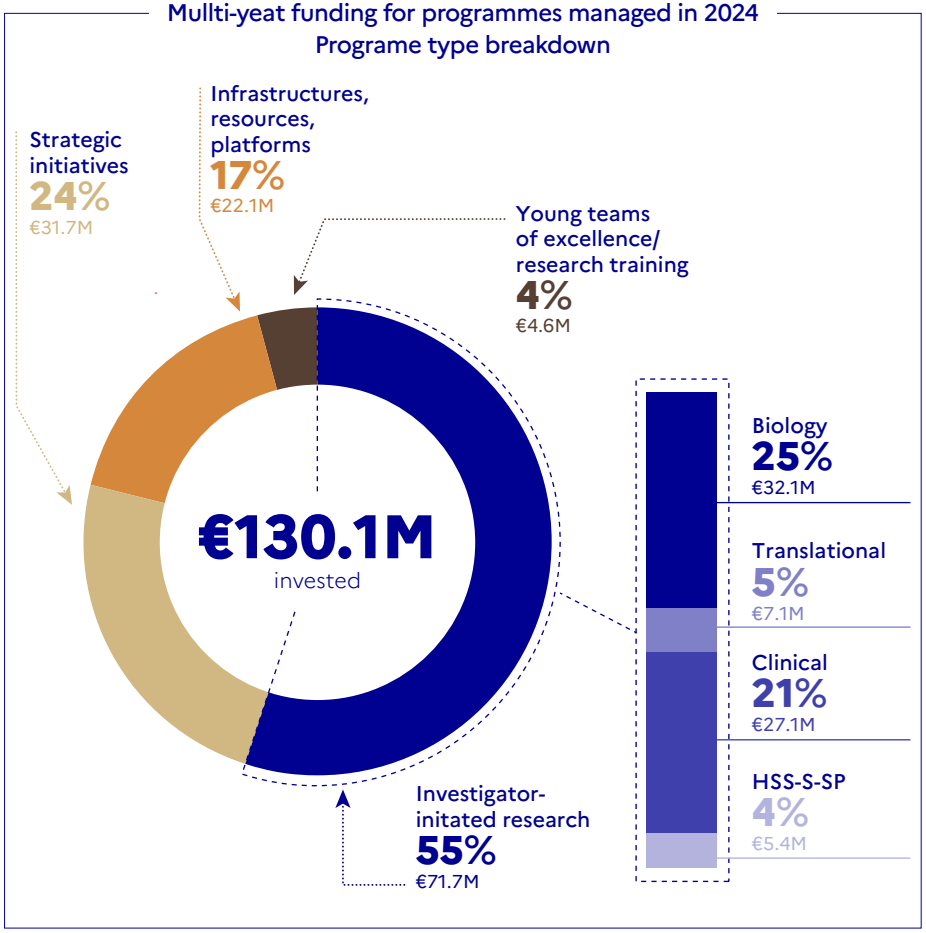
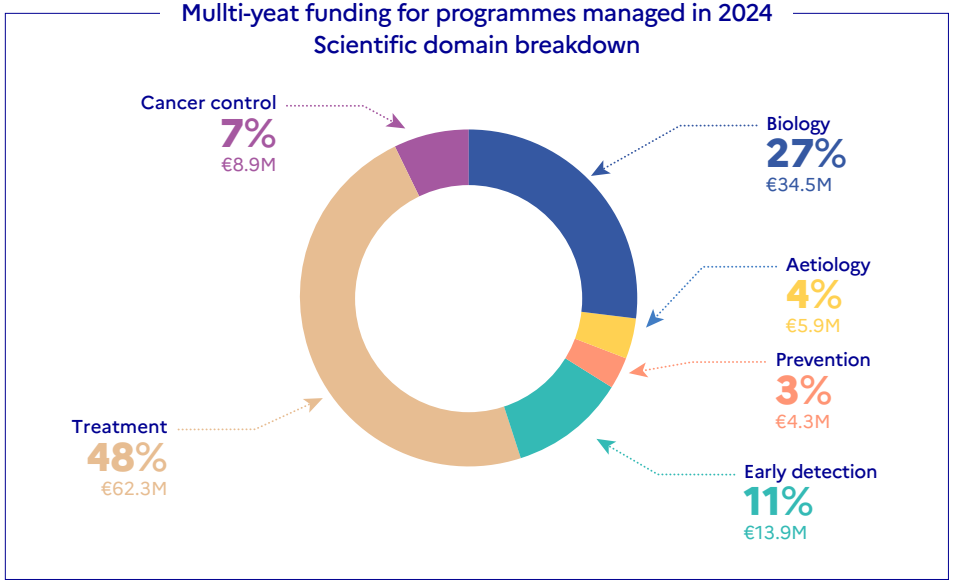


Figure 2b

Mullti-yeat funding for programmes managed in 2024
Scientific domain breakdown



LIST OF FUNDING PROGRAMMES MANAGED IN 2024

Table 1: List of programmes managed by INCa in 2024

INCa 2024 programmes	Objectives	Ten-Year Cancer Control Strategy (numbering of actions)	Funding		Projects funded by the GIP
			GIP (INCa +DGOS+ ARC + Ligue+CNAM)	Year of funding	
CAD (evolution of SPA-CPA)	To support ambitious and innovative research of excellence to improve knowledge of addictive behaviours and drugs	No	€4,716,984	2024	14
CAD-DOC (evolution of SPA-CPA-DOC)	To promote research by young talent on addictive behaviours and drugs	No	€642,910	2024	5
CLIP2	To strengthen the national network of early-phase clinical trial centres for adult and paediatric cancer patients	No	€12,413,676	2024	19
DOCSHS	To promote research among young talent in the fields of human and social sciences, public health and epidemiology applied to the fight against cancer	No	€660,738	2024	5
UCOM	To promote clinical research structuring in overseas french territories by supporting the UCOM group	Yes (III-5-2)	€100,000	2025	1
FRANCE-JAPAN	To encourage collaboration and resources mutualisation between researchers based in France and Japan for large-scale international basic research projects in cancer biology	No	€1,993,040	2025	3
LABREXCMP	To accelerate research on poor-prognosis cancers through the designation of research networks of excellence	Yes (III-1-1)	€5,955,228	2024	2
PEDIAHR	To support original, bold and conceptually innovative "high-risk/high-gain" fundamental and translational research projects in paediatric oncology	No	€3,742,308	2024	6
PEDIAIMMUNO	To support innovative research on paediatric cancer immunology	No	€4,068,090	2024	4
PHRC-K	To support national academic cancer clinical research	No (Yes II-1-3)	€27,071,067	2024	27
PLBIO	To support basic science research projects to advance our understanding of cancer biology.	No	€32,068,382	2024	51
PRT-K	To support translational research and accelerate the transfer of scientific and medical knowledge into clinical practice by encouraging the development of interdisciplinary projects bringing together researchers and clinicians.	No	€7,137,359	2024	11
SHS-RISP	To promote the development of multidisciplinary cancer research in human and social sciences, public health and public health intervention.	No	€5,447,418	2024	14
TABACJC	To promote the development of research on tobacco and/or alcohol by supporting young researchers who present innovative research projects in the fields of human and social sciences, public health and interventional research.	No	€748,836	2024	5
TRANSCAN	Transnational cooperation between 31 funding organisations from 20 countries to support high-impact translational research on cancer	No	€1,702,159	2024	4
		TOTAL	€108,468,195		171

Table 2: List of programmes managed by IT Cancer in 2024

IT Cancer 2024 programmes	Objectives	Ten-Year Cancer Control Strategy (numbering of actions)	Funding		Number of projects funded
			Amount	Year of funding	
ANR JCJC	To support young researchers by granting them additional funding for their cancer research projects	No	€1,101,187	2024	3
ANSE PNR EST	To support the production of scientific knowledge on public health issues related to the environment and the workplace	No	€393,647	2024	3
Atip-Avenir (extensions)	To attract and support young researchers in the conduct of research in the field of cancer	No	€90,000	2024	3
Equipment	To support the acquisition of shared equipment to promote ambitious cancer research projects and strengthen interaction between research teams	No	€3,592,701	2024	19
FRT-DOC	To encourage the training of medicine, pharmacy and veterinary medicine students or recent graduates in basic or translational cancer research through PhD theses funding	No	€1,314,943	2024	9
MCMP	To support interdisciplinary and multidisciplinary projects on the microenvironment of poor-prognosis cancers	Yes (III)	€4,613,618	2024	8
MIC	To attract mathematics and computer science contributions to the cancer research field	No	€2,707,922	2024	7
PCSI	To support the use of concepts and tools from physics, chemistry and engineering sciences to improve our understanding of cancer pathologies and improve patient prognosis.	No	€7,789,728	2024	18
			€21,603,746		70

2024 INSTITUTE HIGHLIGHTS

Poor-prognosis cancers: designation of research networks of excellence

Some cancers elicit a very poor prognosis with fewer than one in three patients surviving five years after diagnosis. These so-called poor-prognosis cancers have unfortunately seen little benefit from recent therapeutic advances. To accelerate the emergence of new treatment options, it is therefore essential to intensify research efforts, particularly in translational research, in order to improve patient outcome.

Designation of research networks on poor-prognosis cancers

INCa has launched an initiative to structure and support research on poor-prognosis cancers by bringing together the best teams of researchers specialising in this field. In 2023, a call for applications, LABREXCMP, was launched to designate dedicated research networks of excellence. These networks of researchers and clinicians working on joint projects aim to accelerate scientific discovery, to improve early diagnosis, to advance our biological understanding of these cancers, and to develop new therapeutic strategies.

The designated networks have several key missions:

- Structuring research through the organisation of teams, infrastructure and resources;
- Promoting the collection and sharing of data and biological samples;
- Establishing integrated multidisciplinary research programmes (combining basic and translational research);
- Ensuring that discoveries are applied in both clinical and public health settings, while promoting and disseminating results to healthcare professionals and the general public.

Two designated research networks focusing on pancreatic cancer and lung cancer

A first edition of the call for applications was launched in 2023, targeting cancers with a five-year survival rate of less than 33%, including, in particular lung, liver, pancreatic, gastroesophageal and central nervous system cancers, together with acute leukaemia arising from the transformation of a myeloproliferative syndrome or myelodysplastic disorder. **Five applications were submitted and, following the evaluation process, two networks were approved: one dedicated to lung cancer and the other to pancreatic cancer. Each of these networks will receive 3 million Euros over a period of five years** Geographic distribution of the teams of the COALA and FRAP networks 3).

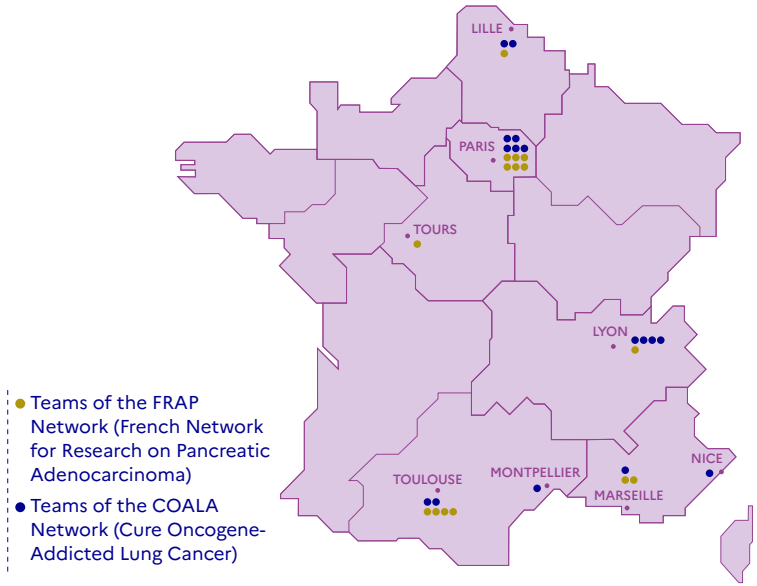
- The **COALA (Cure Oncogene-Addicted Lung Cancer) network**, led by Prof. Julien Mazières at Toulouse University Hospital, focuses on improving the prognosis of lung cancers, particularly those dependent on oncogenes. It seeks to overcome resistance to targeted therapies, to improve the targeting of hard-to-treat molecular alterations (such as KRAS and MET mutations), and to explore the impact of tumour microenvironment. This network is also implementing innovative tools to improve care and perspectives for patients with oncogene-dependent lung cancers. This network brings together several centres of expertise in France to create a collaborative research dynamic.
- The **FRAP network** (French Network for Research on Pancreatic Adenocarcinoma), led by Prof. Jérôme Cros of the AP-HP, aims to overcome the specific challenges of pancreatic cancer, a particularly aggressive cancer with a very poor prognosis. It focuses on structuring biological resources, studying resistance and cachexia mechanisms, and integrating basic research into clinical trials. The FRAP network aims to accelerate scientific discoveries, the development of personalised treatments and to respond to the specific needs of patients, through a collaborative approach involving patients' associations.

POOR-PROGNOSIS CANCERS

This term covers cancers with a standardised five-year net survival rate of less than 30% at the time of diagnosis. This group of cancers includes certain digestive cancers (liver, pancreas, oesophagus, stomach), tumours of the central nervous system, lung cancers and secondary acute myeloid leukaemia.

These cancers, which have been little affected by research advances, are the focus of a whole area of the National Ten-Year Cancer Control Strategy, which aims to intensify translational research and to improve patient survival rates significantly.

Figure 3
Geographic distribution of the teams of the COALA and FRAP networks



INCa support should create a new dynamic, advancing knowledge and improving the treatment of these cancers. In 2024, a new call for applications was launched to designate a new network for 2025 focusing on one of the cancers not selected in the first call.

Early-stage clinical research in oncology: 2024-2029 designation of CLIP² centres

The CLIP² programme (INCa-designated early-stage centres) was launched in 2010 and aims to establish expert cancer research centres within healthcare establishments (university hospitals, comprehensive cancer centres) specialising in early-phase trials of new drugs. Through CLIP² designation, these centres receive logistic and financial support from the Institute, enabling them to improve quality standards and to enhance the attractiveness of French clinical research. The Institute conducted four successive designation campaigns for the 2010-2014, 2015-2019 and 2019-2024 periods. The 2019-2024 designation came to an end in June 2024.

Two new rounds of designation

With the aim of ensuring the continuity and development of the programme, INCa, in partnership with *Ligue contre le cancer* – a French charity supporting cancer research – has launched two calls for applications for the 2024-2029 designation period. For the optimisation of patient access to innovative clinical trials while promoting French scientific excellence and encouraging collaboration between CLIP² centres, the main objectives of the programme include:

- Increasing the number and quality of early-phase clinical trials for adults and children;
- Making new treatments available to patients in a timely manner;
- Developing innovative therapies for types of cancer not covered by pharmaceutical industry development plans;
- Strengthening the international attractiveness of French clinical research.

In total, 19 CLIP² centres have been designated for the 2024-2029 period, with total funding amounting to 12.4 million Euros. Two calls for designation

applications were issued, one in June 2023 and the second in June 2024. Fifteen centres had their designation renewed and four centres were newly designated (Figure 4). The 2024-2029 CLIP² centres therefore include:

- 11 CLIP² centres in adult oncology, including three newly designated,
- 8 CLIP² centres with dual paediatric and adult cancer specialisation: one of which is newly designated.

As in previous calls, *Ligue contre le cancer* is providing specific financial support for the structuring and development of this paediatric component, there by improving access to early clinical trials for young patients.

Call for applications in June 2023

The first call for applications received 21 responses including five from new candidate centres. The scientific evaluation committee, composed of 14 international experts took into account the scientific quality, expertise and organisational project of the candidate centres. For centres designated over the 2014-2019 period, specific attention was paid to achieved objectives and progress made from the previous designation. 16 applicants were selected for designation following this call, of which 13 had their designation renewed and 3 centre were designated for the first time:

- The CLIP² for Adult and paediatric oncology: Centre for Therapeutic Innovation in Onco-Haematology, Strasbourg Europe Cancer Institute – Strasbourg;
- The CLIP² for Adult oncology: Centre for Early Phase Adult Oncology PACA East, Antoine Lacassagne Centre – Nice;
- The CLIP² for Adult oncology: CARPEM – Clinical Access to Innovative Therapies, Georges Pompidou European Hospital, AP-HP – Paris.

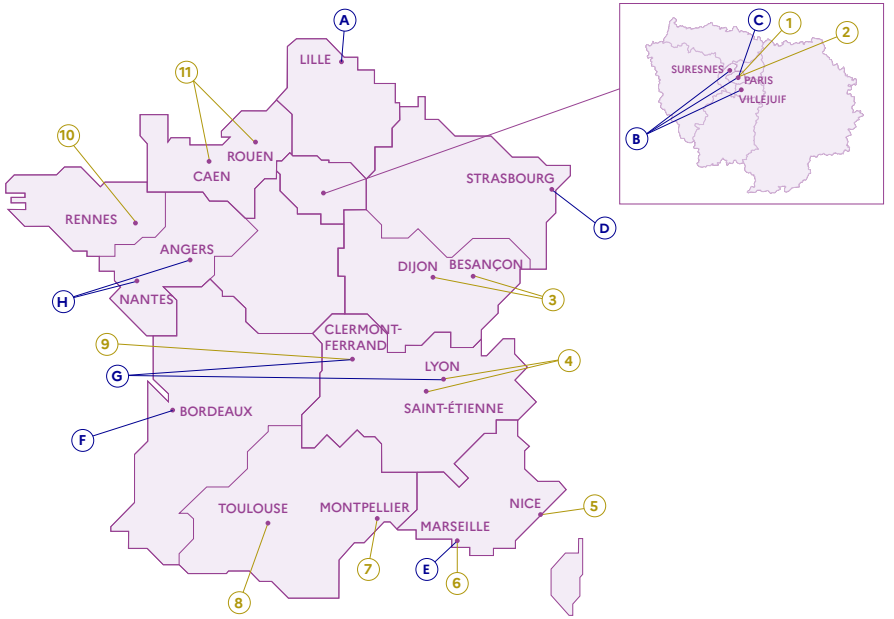
A second call for applications in June 2024

To address the challenges of the Ten-Year Cancer Control Strategy and improve access to innovation throughout the country, the Institute has decided to increase the number of CLIP² centres. A second call for applications was therefore issued in June 2024. This process led, in early 2025, to the selection of three new centres, including one not previously designated.

The CLIP² for Adult oncology – Early Phase Research Unit in Adult Cancer and Cell Therapy, Clermont-Ferrand University Hospital.

Figure 4

Designated CLIP² over the 2024-2025 period



ADULT AND PAEDIATRIC CLIP²

- (A) **LILLE – CLIP² du Centre Oscar Lambret et du CHU de Lille**
  Centre Oscar Lambret – CHU de Lille
- (B) **PARIS – CLIP² – Développement précoce des médicaments Gustave Roussy**
  Hôpitaux Trousseau et Robert Debré – Gustave Roussy – Hôpital Foch
- (C) **PARIS – CLIP² Institut Curie**
  Institut Curie
- (D) **STRASBOURG – CLIP² Centre d'Innovation Thérapeutique en Onco-Hématologie de Strasbourg**
  Institut de cancérologie Strasbourg Europe
- (E) **MARSEILLE – CLIP² AP-HM – Centre d'essais précoces en cancérologie de Marseille**
  Hôpital de la Timone
- (F) **BORDEAUX – CLIP² CIA – Cancer Innovation Nouvelle-Aquitaine**
  Institut Bergonié – CHU de Bordeaux
- (G) **LYON et CLERMONT-FERRAND – CLIP² Centre Léon Bérard**
  Centre Léon Bérard – Centre Jean Perrin
- (H) **NANTES et ANGERS – CLIP² – ILIAD Imagerie et études longitudinales pour améliorer la prise de décision en oncologie**
  Institut de cancérologie de l'Ouest – CHU de Nantes – CHU d'Angers

ADULT CLIP²

- (1) **PARIS – CLIP² Saint-Louis – Paris Nord AP-HP**
  AP-HP Nord – Université Paris Cité – Hôpital Saint-Louis
- (2) **PARIS – CLIP² CARPEM – Accès Clinique aux thérapeutiques innovantes**
  AP-HP Centre – Université Paris Cité
- (3) **DIJON et BESANÇON – CLIP² Bourgogne-Franche-Comté 24-29**
  Centre Georges François Leclerc – CHU de Dijon – CHU de Besançon
- (4) **LYON et SAINT-ÉTIENNE – CLIP² EPSILyon (Early Phase Studies In Lyon)**
  Hospices Civils de Lyon – Centre hospitalier Lyon Sud – CHU de Saint-Étienne
- (5) **NICE – CLIP² Centre de Phase Précoce en Oncologie Adulte PACA Est**
  Centre Antoine Lacassagne – CHU de Nice
- (6) **MARSEILLE – CLIP² Centre d'Essais Précoces IPC Provence**
  Institut Paoli Calmettes
- (7) **MONTPELLIER – CLIP² Centre d'Essais de Phase Précoce de Montpellier**
  Institut du cancer de Montpellier – CHU de Montpellier
- (8) **TOULOUSE – CLIP² Oncopole Claudius Regaud**
  Institut universitaire du cancer Toulouse
- (9) **CLERMONT-FERRAND – CLIP² Unité de phases précoces en cancérologie et thérapie cellulaire adulte du CHU de Clermont Ferrand**
  CHU de Clermont Ferrand
- (10) **RENNES – CLIP² Institut REnnais de CAncérologie – Centre des essais précoces (RECAP)**
  Centre Eugène Marquis – CHU de Rennes
- (11) **CAEN et ROUEN – CLIP² Centre Normand de phase précoce en oncologie adulte**
  Centre François Baclesse – CHU de Caen – Centre Henri Becquerel

EDITORIALS FROM DEPARTMENT HEADS

Caroline Dreuillet
Head of the Clinical research department

Providing patients with access to innovation is a major challenge. It is a key factor for improving the chances of recovery and quality of life, and for guaranteeing equal access regardless of age, place of residence or type of cancer. It also means enabling every patient to participate in clinical trials and benefit from innovative therapies.

The AcSé programme (Secure Access to Innovative Targeted Therapies), launched in 2013 and renewed in 2021, offers a solution for patients with no therapeutic options and/or with specific molecular alterations. In 2024, the launch of the Pan MSI AcSé trial marked a new milestone, and the programme will be rolled out further in 2025. AcSé is a sound example of INCa's ability to break down barriers between innovation and clinical practice, between research and care.

CLIP² (INCa-designated early-phase clinical trial centres) form INCa's second pillar of support for access to innovation. The 2024-2029 CLIP² designation has expanded the network to 19 CLIP² centres, thereby strengthening access to early-phase clinical trials.

By coordinating these two mechanisms – AcSé and CLIP² – INCa is bringing cutting-edge research closer to patients and reaffirming its flagship commitment to make innovation accessible to all.

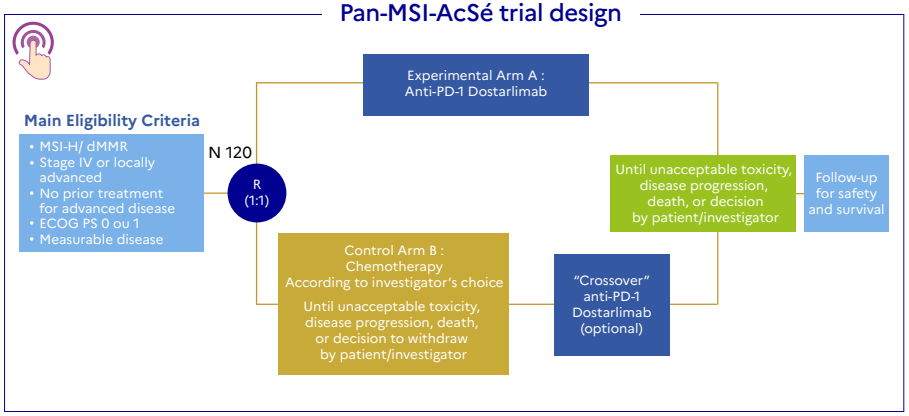
Clinical trials of targeted therapies: launch of the first cohort of the new AcSé programme

The new AcSé programme, developed as part of the Ten-Year Cancer Control Strategy, is characterised by a more agile and inclusive approach. It includes multi-arm, multi-target and multi-drug trials covering a wide range of cancers and introducing innovative treatments useable in the first line. Its objective is to identify biological abnormalities and to target them through clinical trials evaluating authorised molecules or molecules at advanced stages of development. The aim is to generate robust clinical data that can transform medical practices in the long term, while facilitating patient access to innovative therapies.

Launch of the Pan-MSI-AcSé trial in July 2024

In 2024, the first trial of the new AcSé programme, Pan-MSI-AcSé, was set up and opened for enrolment (Figure 5). Its objective is to evaluate dostarlimab as a first-line treatment for metastatic non-colorectal or endometrial MSI/dMMR cancers. This trial includes 120 patients across 25 centres in France. Its primary endpoint is progression-free survival with dostarlimab relative to standard chemotherapy. In addition to determining clinical efficacy, the study aims to decipher the molecular mechanisms of MSI/dMMR cancers.

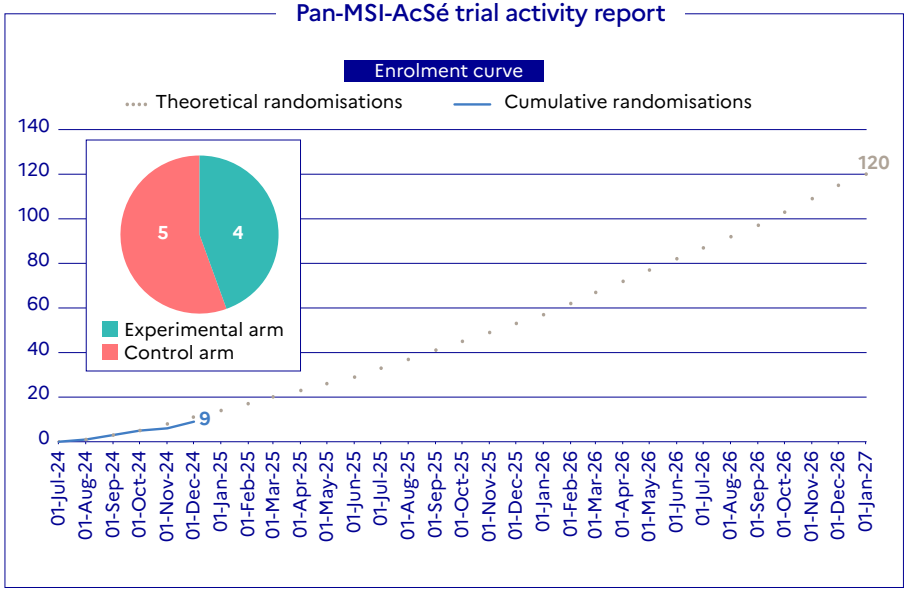
Figure 5
Pan-MSI-AcSé trial design



Following regulatory approval in March 2024 and the launch of the study in May, the first patient was enrolled in July. By the end of 2024, 16 centres had been activated, seven of which had already enrolled patients. The first nine patients were randomised, and marked progress was made in the opening of sites and the resolution of logistic barriers. Several amendments, including an updating of the initially overly restrictive exclusion criteria, were introduced to optimise inclusion criteria, to enrich data collection and to integrate new centres.

The programme is continuing to mobilise its resources effectively. With 18 investigating centres having signed the agreement with the sponsor required for the trial to proceed, and other centres undergoing activation, momentum is building (Figure 6). In 2025, efforts will focus on accelerating enrolment, completing the rollout of centres and analysing interim data to adjust treatment strategies. Patient follow-up and the production of data that can be used in clinical practice and research remain priorities.

Figure 6
Pan-MSI-AcSé trial activity report



EDITORIALS FROM DEPARTMENT HEADS

Sophie Le Ricousse
Head of the Biology, Transfer and Innovation department

Several decisive actions were taken in 2024, at both the national and European levels.

Firstly, two research networks of excellence dedicated to poor-prognosis cancers (lung and pancreatic cancers) were designated, with the aim of accelerating scientific discovery, improving early diagnosis, gaining a better understanding of the mechanisms of these cancers, and developing new therapeutic strategies.

The Institute's continued management of the OSIRIS programme has made it possible to take major steps in terms of the interoperability and structuring of health data for more effective use in research.

The indications for molecular testing in patients with non-small cell lung cancer have been updated to support the prescription of precision treatments. Finally, financial support has been granted to six French teams selected under the third joint transnational call (JTC) of the European TRANSCAN programme on cancer epigenetics. However, we deplore the insufficient funding allocated to translational research (with only 11 projects selected, corresponding to a selection rate of 11.5%).

Outlook for 2025: new AcSé trials

Two new trials are planned for 2025.

- **AcSé FGFR trial:** This trial will explore the efficacy of pemigatinib, a tyrosine kinase inhibitor, in cancers with FGFR gene fusions or rearrangements. Already approved for urothelial cancers and cholangiocarcinomas, this drug will be tested against a broader spectrum of tumours.
- **AcSé HER2 trial (currently being set up, enrolment planned for late 2025 – early 2026):** This phase II, multicentre, multi-cohort trial will evaluate zanidatamab, a bispecific antibody targeting two HER2 epitopes. It will include patients with endometrial, colorectal and head and neck cancers, and certain sarcomas that overexpress HER2. Non-small cell lung cancers will be included if they carry HER2-activating mutations. The primary objective is to evaluate the activity of zanidatamab monotherapy in the various cohorts, by measuring the objective response determined by the investigator.

The AcSé programme is continuing to evolve, with the development of new trials aiming to bring targeted and innovative therapeutic solutions to patients with rare or hard-to-treat cancers.

International collaboration for translational research: TRANSCAN

The TRANSCAN-3 network brings together 31 institutional or non-profit organisations from 20 countries (16 European countries and 4 non-European countries) working together to support translational cancer research through the effective investment of dedicated funds combined with financial support from the European Union. Each year, a call for proposals is launched to support translational research projects on a specific theme.

The TRANSCAN-3 programme will come to an end in 2026, with an extension for administrative reasons until February 2027. The vast majority of partners have been collaborating since 2011 as part of the two previous ERA-NETs, TRANSCAN and TRANSCAN-2, and wish to continue their collaboration beyond TRANSCAN3.

A funding project, "TRANSCAN 4", has been included in the European Commission's Mission Cancer 2025 work programme to enable this initiative to continue. "HORIZON-MISS-2025-02-CANCER-01: Sustained collaboration of national and regional cancer funders to support the Cancer Mission through translational research". An application is therefore being drafted for submission in September 2025. The Institute is participating in the drafting group for this application.

The TRANSCAN-3 2023/2024 funding programme

The third joint transnational call for projects (JTC: *joint translational call*), targeting research projects focusing on **cancer epigenetics**, was managed by INCa. Twenty-four co-funders from 19 countries participated. The call was launched in May 2023 and the projects were selected in May 2024. In total, 83 expressions of interest were submitted.

Thirteen projects were selected to receive 16.7 million Euros in total. The project selection rate was 16%. Nine French teams were funded as part of seven joint research projects:

- **The Institute funded six French teams involved in four joint projects for a total of 1.7 million Euros** (Table 3).
- The ARC Foundation funded three French teams involved in three joint research projects.

One of the four projects funded by the Institute was coordinated by a French researcher. The other three projects were coordinated by teams in Canada, Spain and Germany:

- **The EPILUCAFS project, coordinated by Karine Tarte, based in Rennes,** aims to restore immune surveillance with epigenetic drugs targeting specific phenotypes of cancer-associated fibroblasts (CAFs) and lymphoid stromal cells (LSCs) in tumour-draining lymph nodes, which play a major role in in immunosuppression.
- **The Canadian-coordinated REACTION project aims** to identify epigenetic remodelling events in haematopoietic cells and stromal cells in the bone marrow microenvironment (such as mesenchymal stem cells), which promote the transition of pre-leukaemic cells to a cancerous stage.
- **The Spanish-coordinated EPILUNAR project** aims to discover new epigenetic biomarkers for predicting resistance to immunotherapy, and new mechanisms reducing the efficacy of these treatment, thereby opening up new avenues for studying non-invasive alternatives for overcoming resistance to immunotherapy in metastatic non-small cell lung cancer.
- **The German-coordinated SPELCASTER project has** as its main objective the development of a unified classification system for sinus-nasal and salivary gland tumours to harmonise diagnostic standards in participating centres. This project also aims to explore spatial and temporal changes in DNA methylation patterns to deepen our understanding of tumour progression, metastasis, the epigenetic regulation of intra-tumour heterogeneity, and to explore DNA methylation in relation to clinical outcomes for the prediction of treatment responses.

Table 3: Projects funded by INCa through the TRANSCAN programme

Projects	Coordination	Country (city) of collaborating teams				
EPILUCAFS	**France (Rennes)**	Austria	Spain	Spain	**France (Paris)**	Taiwan
REACTION	Canada	**France (Toulouse)**	Israel	**France (Lyon)**	Spain	Spain
EPILUNAR	Spain	**France (Montpellier)**	Germany	Turkey	Turkey	
SPELCASTER	Germany	Ireland	**France (IDF)**	Italy	Germany	Spain

France-Japan collaboration for basic cancer research

International collaborations, particularly in basic research, play a crucial role in accelerating discovery, by pooling research efforts and maximising the impact of funding. To this end, for the Japanese research agency AMED and INCa have initiated an ambitious partnership to support collaborative projects between researchers based in France and Japan and to encourage transnational activities and exchanges.

The France-Japan funding programme

A joint call for projects has been developed, co-funded and co-led by INCa and AMED. Its objectives are to promote scientific excellence and to strengthen links between the research communities in France and Japan with a view to resolving major issues in cancer biology understanding.

This call targeted basic research projects in all disciplines of cancer biology held by French-Japanese consortia composed of at least one research team based in France and one team based in Japan, investigating the biological mechanisms of cancer and jointly coordinated by a researcher based in France and a researcher based in Japan.

Each consortium was eligible for a budget of up to 1.2 million Euros, with 30% of the budget to be spent on international mobility and activities.

The projects were evaluated and selected by a joint evaluation committee set up by INCa and AMED.

Three of the 24 projects submitted were funded, with a total budget of 4 million Euros, 2 million Euros of which was provided by the Institute. The projects were selected on the basis of their scientific quality, the added value of the France-Japan collaboration within the projects, and the planned investment in transnational activities and support for young researchers.

- **The project jointly coordinated by Charles Fouillades, based at Institut Curie Orsay and Dr. Mitsutoshi SETOU based at Hammamatsu University, Japon** aims to analyse the role of lipids in the effects of FLASH radiotherapy at the cellular and tissue levels, for the development of new treatments based on lipidic peptides.
- **The project jointly coordinated by Philippe Pasero, based at the IGH in Montpellier Dr. Yasukazu DAIGAKU based at Tokyo University, Japon** aims to study replication stress-induced senescence and anti-cancer immunity.
- **The project jointly coordinated by Estelle Duprez, based at the CRCM in Marseille and Dr. Atsushi IWAMA based at Tokyo University, Japon** aims to improve our understanding of the role of the epigenetic effector EZH2 in leukaemia, particularly in the development of acute lymphoblastic leukaemia and acute myeloid leukaemia.

ORGANISATION OF A SERIES OF FRANCE-JAPAN WEBINARS ON BASIC AND TRANSLATIONAL IMMUNOLOGY

The close collaboration between France and Japan in cancer research was highlighted this year by a series of webinars jointly organised by the Institute, the French Society for Immunology (SFI) and its Japanese counterpart, JSI. This series of webinars was dedicated to basic and translational immunology. Each episode of the five-session series featured a researcher based in Japan and a researcher based in France, all recognised for their contributions to our understanding of the biological mechanisms of the immune system.

These webinars aimed to deepen our understanding of the biological mechanisms governing the immune system, with the hope of identifying new antitumoral strategies, as illustrated by the success of immune checkpoint inhibitors and CAR-T therapies as anti-cancer treatments. The webinars also aimed to promote interactions between researchers from different disciplines with the goal of going beyond the scope of immuno-oncology.

The various sessions and speakers are listed below:
- B cells and antibodies: Dr. Tomohiro Kurosaki, MD, PhD from Osaka University, Japan; Dr. Bernard Malissen, PhD from Marseille-Luminy Immunology Centre (CIML), France
- Innate lymphoid cells (ILCs): Dr. Kazuyo Moro, PhD from RIKEN Centre for Integrative Medical Sciences and Osaka University, Japan; Dr. Rachel Golub, PhD from the Pasteur Institute, France
- Clinical immunology: Dr. Eliane Piaggio, PhD from the Curie Institute, France; Dr. Kenji Kabashima, MD, PhD from Kyoto University, Japan
- Innate immunity: Dr. Osamu Takeuchi, MD, PhD from Kyoto University, Japan; Dr. James Di Santo, MD, PhD from the Pasteur Institute, France
- Mucosal immunology: Dr. Hiroshi Ohno, MD, PhD RIKEN Centre for Integrative Medical Sciences, Japan; Molly Ingersoll, PhD, the Pasteur Institute, France
- Cancer immunology: Dr. Sidonia Fagarasan, MD, PhD, RIKEN Centre for Integrative Medical Sciences, Japan; Dr. Daniel Olive, MD, PhD from the Cancer Research Centre of Marseille (CRCM), France

EDITORIALS FROM DEPARTMENT HEADS

Jérôme Foucaud
Head of the human and social sciences, epidemiology and public health department

In 2024, the Institute continued its support to research in human and social sciences, epidemiology, and public health, with particular focus on the priorities of the Ten-Year Cancer Control Strategy: inequalities, cancers in adolescents and young adults, and cancers with poor prognosis.

The field of addictive behaviours also benefited from substantial support through the fund dedicated to addictive behaviours' control (FLCA), which funded doctoral candidates, early-career researchers, and multidisciplinary projects addressing mechanisms of addictive behaviours, smoking cessation, and patient support for those affected by cancer linked to tobacco and alcohol consumption.

This year was also marked by several key moments of collective and scientific reflection on priority topics: meetings on health determinants in cancer control, a symposium on end-of-life care, and a mid-term seminar for the primary prevention research networks, during which research perspectives and practices were explored.

Finally, the preparation of two special issues in scientific journals and the dissemination of findings from the *Baromètre Cancer* contributed to advancing knowledge and ensuring its broader diffusion.

End-of-life care in the field of cancer: contributions of human & social sciences and the intervention research field

The implementation of several Cancer Plans and medical advances have generated very encouraging results for patients, but challenges remain, including those related to end-of-life care.

Many questions remain unanswered, and the human & social sciences and intervention research fields can help to improve our knowledge in this area. The Institute therefore organised an international scientific symposium on this topic in Paris on 11 and 12 December, bringing together 190 participants.

An international scientific symposium in French

This conference aimed to create a space for exchange and encounters between researchers, experts, clinicians and stakeholders involved in this field, in a spirit of interdisciplinary collaboration, to identify ongoing research and the features specific to end-of-life care in oncology. Particular attention was paid to work aiming to reduce social and regional health inequalities and to help vulnerable populations.

An international scientific committee has been formed, co-chaired by Dr. Sarah Dauchy, Prof. Francesco Panese and Ghislaine Rouly. The symposium was opened by the French Director General of Health, Dr. Grégory Emery, and the President of INCa, Prof. Norbert Ifrah, and closed by Prof. Bruno Quesnel, Director of the Research and Innovation Division of INCa.

Ongoing research and specific features of end-of-life care in oncology

This conference highlighted the great complexity of end-of-life issues of both caregivers and patients, the need for humility and the need to rethink research methods, to take non-verbal and human relationship aspects into account more effectively, in particular. The importance of integrating an anthropological approach and considering cultural and social contexts was highlighted, as were the risks associated with the increasing medicalisation of end-of-life care. Health literacy also emerged as a key issue. Several perspectives have been identified: strengthening interdisciplinary and international partnerships, paying particular attention to specific populations, collecting more prospective data upstream from palliative care, and promoting greater freedom of expression about death, valorising the role of caregivers and ensuring greater visibility for end-of-life choices.

EDITORIALS FROM DEPARTMENT HEADS

Carla Estaquio
Head of the Evaluation mission

This year, the French National Cancer Institute launched a strategic roadmap designed to strengthen and leverage data from its research funding call portfolio. Data – including research outputs – are indeed key for the measuring of our impact and for maximizing the value of our research investments. This roadmap aims to improve the monitoring of funded projects from the submission stage (ex-ante evaluation), through project completion (final evaluation) and several years after the end of the funding (ex-post evaluation).

We will continue our collaborations with the ecosystem established by the Ministry of Research (Recherche Data.gouv, DMP-Opidor, HAL, etc.), while promoting alignment with other funding agencies (ADEME, ANR, ANRS-MIE, ANSES). These developments, which will be rolled out over several years, are essential to address the challenges of scientific evaluation of research programmes, as well as the valorisation and openness of the Institute's portfolio. Initial results on the scientific impact of research funding calls (for the period 2008-2018) are expected in 2026.

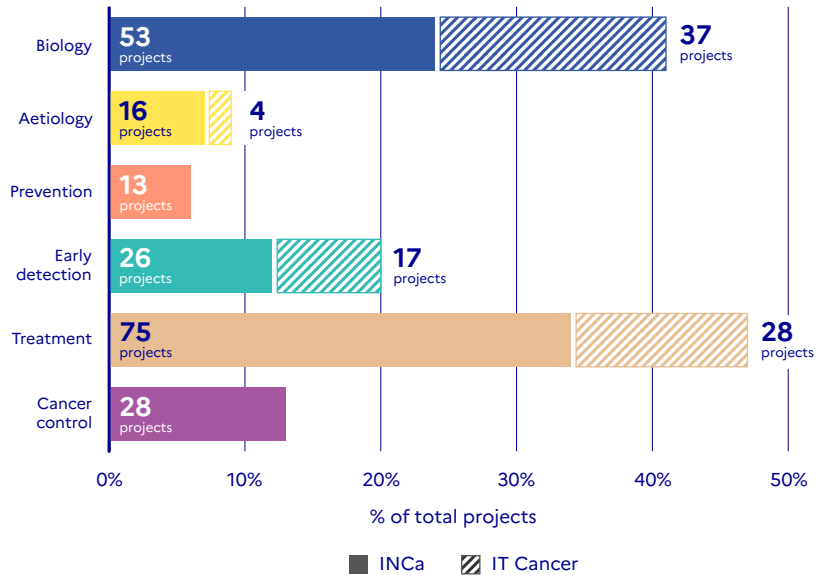
SCIENTIFIC DOMAINS COVERED BY RESEARCH PROJECTS SUPPORTED IN 2024

In 2024, 21 funding programmes led by INCa and IT Cancer provided financial support to 221 cancer research projects. All scientific fields of cancer research are covered, with each project targeting up to three fields (Figure 7). These research areas arise from the Common Scientific Outline (CSO) (refer to 13). Thus:

- 47% of projects aim to identify, develop, evaluate and validate treatment strategies;
- 41% of projects aim to deepen our understanding of cancer biology;
- 20% of projects cover objectives related to early detection, diagnosis and prognosis;
- 13% of projects address issues relating to cancer control, patient outcomes and population health;
- 9% of projects focus on the causes and origins of cancer;
- 6% of projects focus on cancer prevention strategies.

Figure 7

Scientific fields covered by the funded research projects

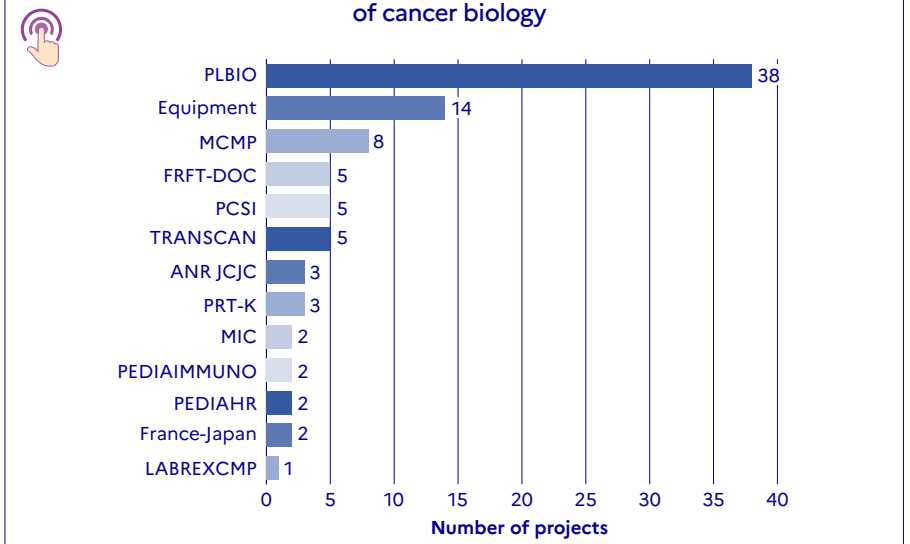


1.1. Understanding cancer biology

In total, 90 of the projects funded aim, at least in part, to further our understanding of cancer biology (Figure 8). These projects are supported by 13 funding programmes, the principal programmes being: PLBIO, a programme supported by INCa and dedicated to basic research into cancer biology; the multidisciplinary strategic programmes led by IT Cancer, *Équipement*, MCMP, PCSI and FRFT-Doc; and the international collaboration programme TRANSCAN.

Figure 8

Funded projects for improving our understanding of cancer biology



More than a third of these projects (38 projects) are part of the PLBIO programme. They cover broad topics including (Figure 9):
- DNA damage and repair;
- Cell metabolism;
- Signal transduction;
- Immune surveillance and immune escape mechanisms;
- The tumour microenvironment, particularly intercellular communication;
- Computational biology.

Four projects from the PLBIO programme target paediatric cancers, including glioma, neuroblastoma, hepatoblastoma and medulloblastoma in particular.

The Equipment programme enables teams to acquire advanced technological tools. In 2024, investments were focused particularly on cellular imaging and proteomic and biochemical analyses.

Five projects from the MCMP programme (microenvironment of poor-prognosis cancers) use innovative approaches to target the early stages of oncogenesis by characterising immune responses and premetastatic niches. In addition, the LABREXCMP programme, led by INCa, also supports these priorities by designating research networks of excellence for poor-prognosis cancers.

The PCSI programme projects draw on concepts from physics, chemistry and engineering sciences, for studies of mechanobiology – the physical structuring of tumours – in particular.

Finally, four projects supported by the High Risk-High Gain paediatric programme, PEDIAHR – that encourages creativity and scientific risk-taking to ensure concrete scientific advances in the field of childhood cancers – and PEDIA-IMMUNO – a programme promoting paediatric immuno-oncology research – focus on:
- The study of innovative targets in liver oncogenesis, immunosuppression and resistance to immunotherapy;
- Macrophage-fibroblast-tumour cell dialogue in rhabdomyosarcomas;
- Analysis of the epigenome during the development of childhood brain cancer;
- The use of reprogramming and transdifferentiation technologies to modify the epigenome of neuroblastoma cells.

1.2. Understanding the aetiology of cancer

20 projects aim to improve our understanding of the causes and origins of cancer by exploring genetic, environmental and lifestyle factors. These projects are spread across 10 funding programmes (Figure 10).

The PEDIAHR programme supports three innovative projects focusing on the aetiology of paediatric cancers, including:
- The use of organotypic models to characterise early oncogenesis in teratoid/rhabdoid tumours and medulloblastomas;
- Epigenomic analysis of the development of brain cancers in children;
- Exploration of a new hypothesis on bone metastases in high-risk neuroblastoma.

The PNR-EST programme, dedicated to environmental and occupational health research, has funded two projects on the role of exogenous factors in the onset of cancer, and a project aiming to develop an innovative model for studying these factors.

Finally, a PhD project supported by the CAD-DOC programme for addictive behaviours and drugs is exploring the temporal modelling of exposure to air pollutants and the risk of breast cancer, using a "lifetime" analysis approach to critical exposure windows.

Figure 9

Scientific themes covered by projects funded under the PLBIO programme

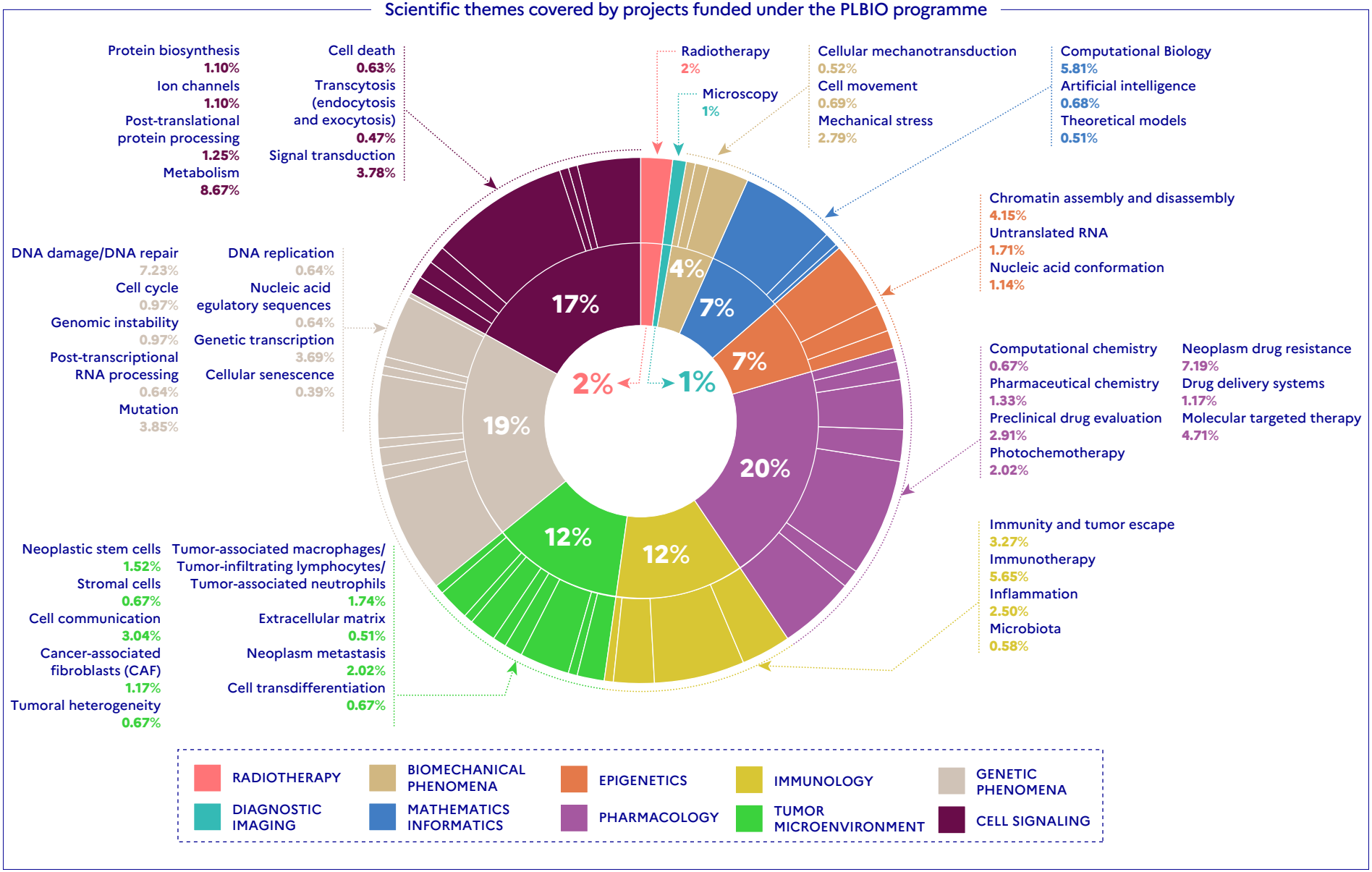


Figure 10
Funded projects for improving our understanding of the aetiology of cancer

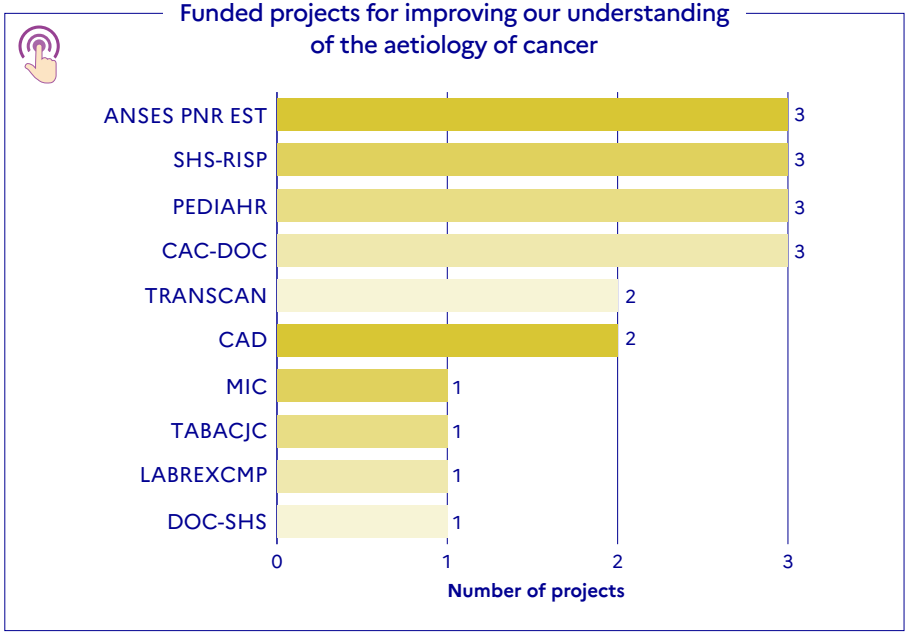
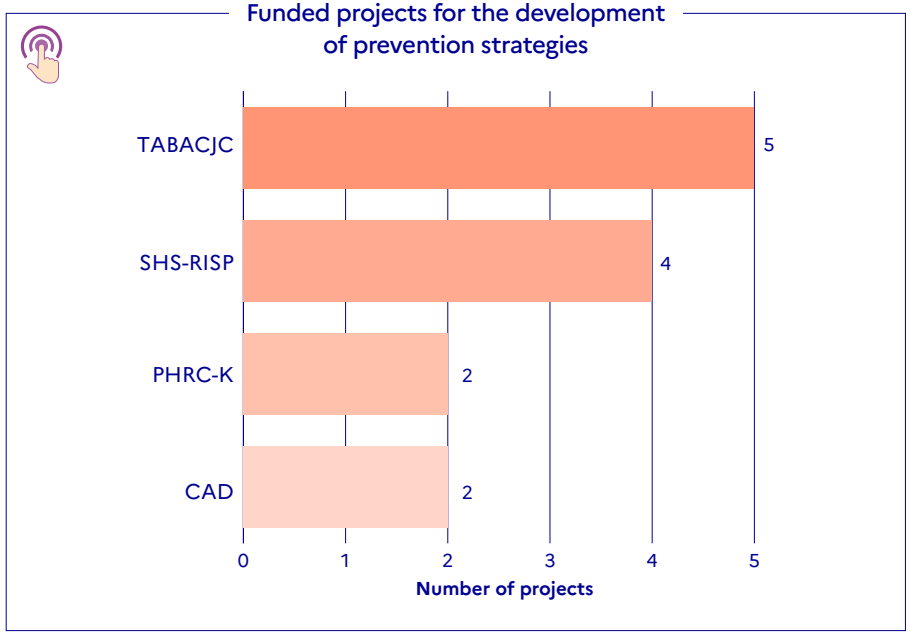


Figure 11
Funded projects for the development of prevention strategies



1.3. Development of prevention strategies

Thirteen projects aim to identify individual or collective primary prevention interventions for reducing exposure to risk factors (particularly tobacco, alcohol and risky behaviours) and promoting protective factors (Figure 11).

Most of these projects are funded by the CAD and TABACJC programmes, which are dedicated to studying addictive behaviours and alcohol and tobacco consumption, the main risk factors for developing cancer.

The CAD programme-funded projects focus mainly on:
- Preventing addiction among young people;
- The use of mouse models to study addiction mechanisms.

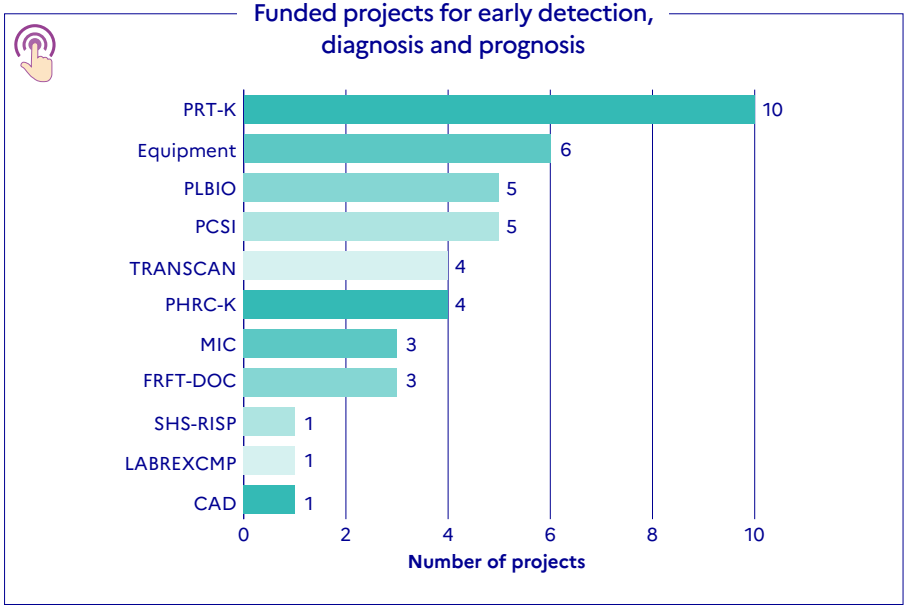
The five projects funded by the TABACJC programme focus on the following research topics:
- Social cognition and heavy alcohol use;
- The effects of marketing restrictions on alcohol at European level;
- The impact of periodic health checks on consumption as a function of social deprivation;
- The influence of the psychosocial environment of childhood on consumption patterns;
- A co-constructed smoking cessation programme for socially disadvantaged populations.

1.4. Early detection, diagnosis and prognosis

The 34 projects funded in this scientific field focus on the identification and experimental validation of biomarkers, imaging methods and other methods. These tools are essential for cancer detection and diagnosis, for predicting disease outcomes and recurrence risks, and for supporting treatment decisions in the context of stratified/personalised medicine (see Figure 12).

Ten of the 11 projects funded by the PRT-K programme for translational research focus on the discovery of new biomarkers and the development of new technologies. The four projects funded by TRANSCAN, which target cancer epigenetics, also include research objectives relating to screening, diagnosis and prognosis. The research projects funded by the PCSI, MIC and Equipment programmes managed by IT Cancer also make a major contribution to this field of research.

Figure 12



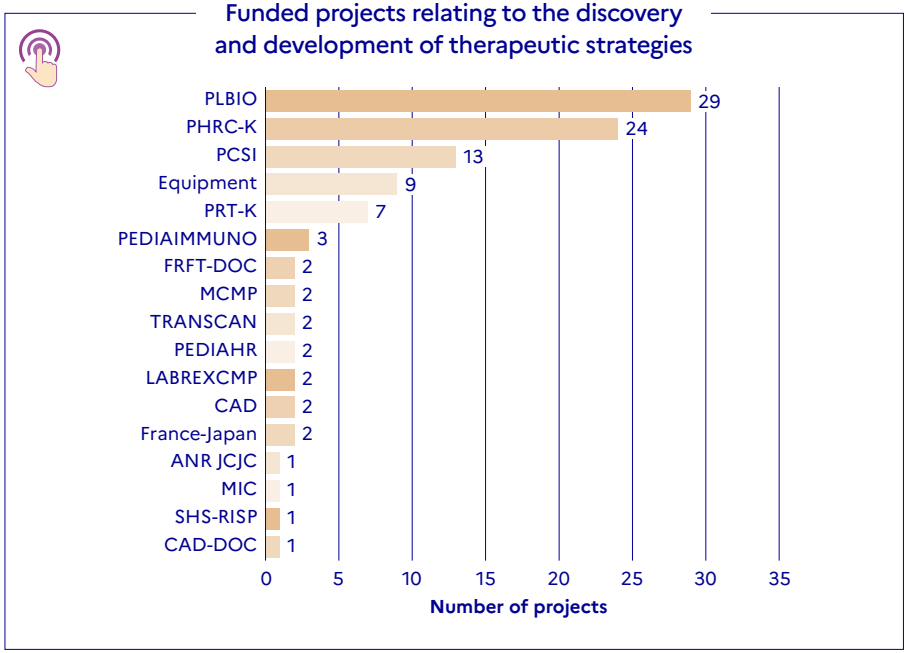
1.5. Discovery and development of therapeutic strategies

In total, 80 projects have been funded through 18 programmes, with objectives including the discovery, evaluation and optimisation of anti-tumour treatments. The basic research projects funded by the PLBIO programme and the clinical research projects funded through the PHRC-K programme make a significant contribution to this area of research (Figure 13).

The PHRC-K programme-funded projects dedicated to clinical research deal with the following specific themes:

- Therapeutic de-escalation: innovative trials aimed at reducing the toxicity of treatments in the medium and long term.

Figure 13



- Combination strategies: approaches combining targeted therapies, chemotherapy and radiotherapy to optimise treatment efficacy.
- Comprehensive patient care: protocols integrating not only treatment, but also supportive care, prevention and the improvement of quality of life.

The funded projects should lead to measurable improvements in patient quality of life, a significant decrease in treatment toxicity and the validation of new clinical practices. In addition, the dissemination of evidence will help to enrich knowledge and guide future cancer care strategies.

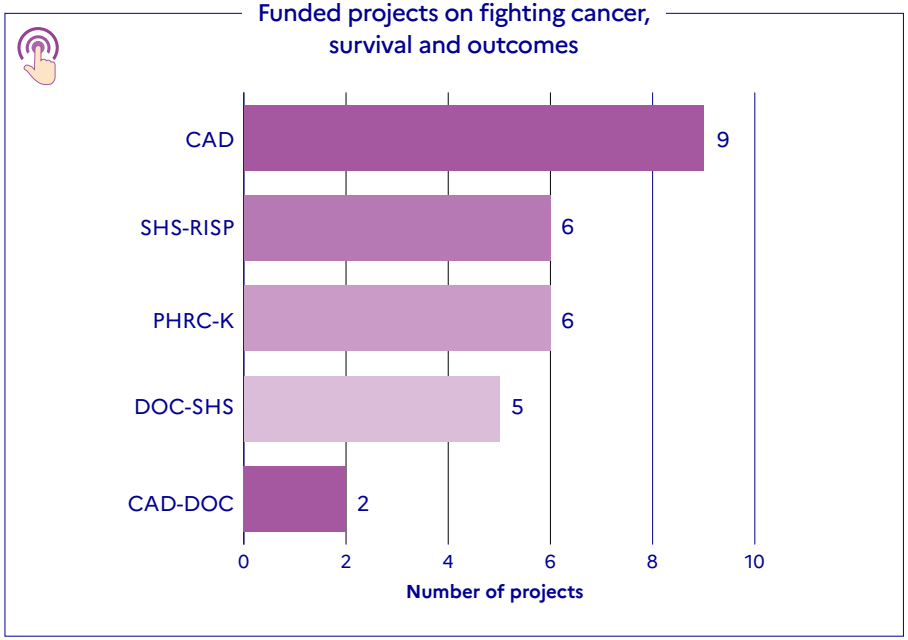
The 29 projects of the PLBIO programme focusing on therapeutic strategies include pharmacological studies and investigations of treatment resistance mechanisms (Figure 9). The projects funded under the PRT-K programme are firmly focused on the transfer of innovations into clinical practice to benefit patients. In 2024, seven of the 11 projects funded by the programme focused on discovering and optimising innovative treatments.

1.6. Cancer control, survivorship and outcome research

33 research projects were funded in this scientific field, on topics such as (Figure 14):

- Patient care and pain management;
- Monitoring cancer cases within the population;
- Beliefs and attitudes that modify behaviours influencing the fight against cancer;
- Ethics;
- Education and communication with patients, relatives and healthcare professionals;
- Supportive and palliative care;
- The performance of the healthcare system in terms of quality and cost-effectiveness.

Figure 14



The projects funded by the PHRC-K clinical research support programme are characterised by a focus on comprehensive patient care: protocols integrating not only treatment, but also supportive care, prevention and the improvement of quality of life.

The projects funded by the CAD programme on addictive behaviours and drugs focus mainly on the stigma associated with smoking among pregnant women, the challenges of nicotine relapse, the contribution of human & social sciences to addiction and the effects of cannabidiol. Projects focusing on the incidence of cancer in migrant populations, consumption patterns and lung cancer, the use of opioids for pain management in adolescents, and lung cancer screening interventions were also funded.

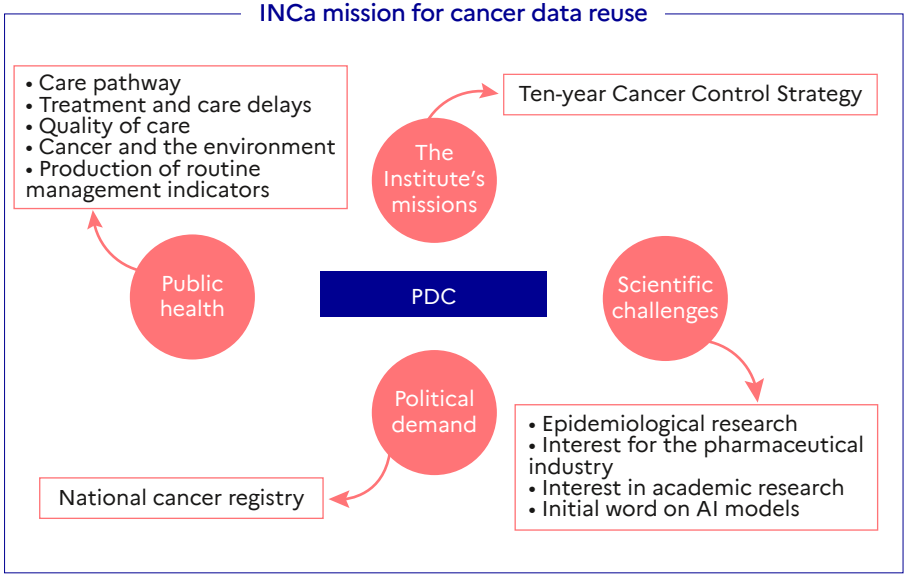
CANCER DATA: SECONDARY USE FOR RESEARCH PURPOSES

The Cancer Data Platform (PDC) is a health data warehouse (HDW) established and managed by INCa. Its objective is to centralise and link multiple databases containing data for patients who have had or currently have cancer. In 2024, it contains pseudonymised data for 12 million individuals.

Under the authorisation delivered by the French data protection authority (CNIL) in 2023, the data of the PDC are intended for reuse in research, studies, or evaluations in the health sector. Thus, data from various sources are gradually being integrated into the platform, with ongoing efforts to improve data qualification, documentation, and matching.

The figure below illustrates all of the missions carried out by INCa in the context of cancer data reuse (Figure 15).

Figure 15
INCa mission for cancer data reuse



2.1. From the *Cohort cancer* to the Cancer Data Platform

2.1.1. The Cancer Cohort

The Cancer Cohort is originally an annual extraction, created in 2010, from the National Health Data System (SNDS), the national database containing all data relating to healthcare reimbursements for 97% of the French population over a 20-year period.

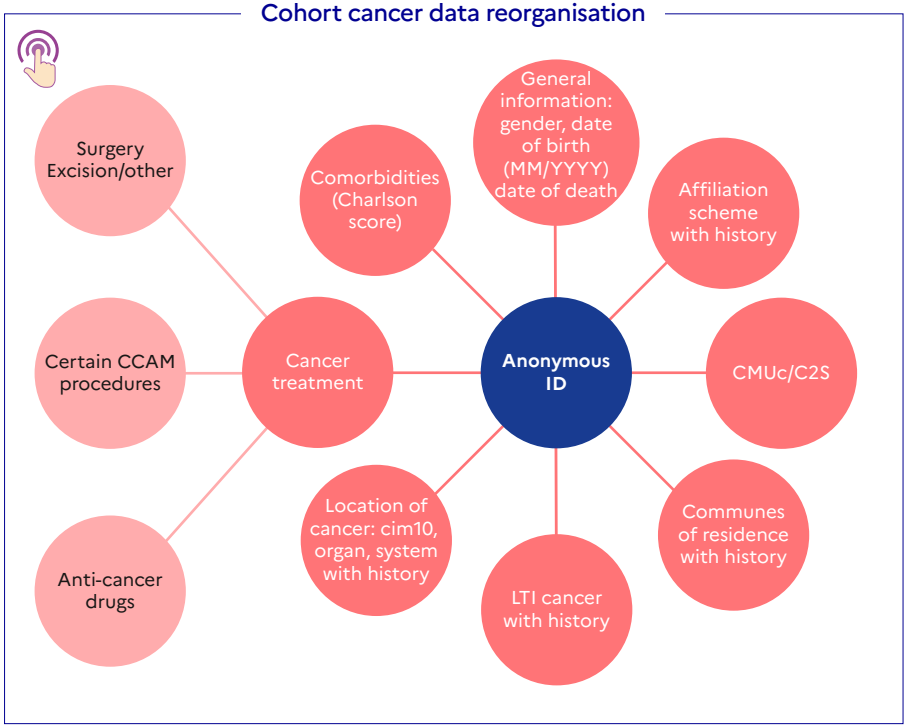
The cohort consists of all prevalent and incident cancer cases in France. It is expended each year with the addition of new people who meet this definition and with the healthcare consumption of people already included in the cohort.

More precisely the cohort is an extraction from the SNDS for anyone who has:
- been hospitalised for cancer;
- *or* radiotherapy in the private sector;
- *or* reimbursement for anti-cancer drugs in the community setting;
- *or* a long-term illness due to cancer;
- *or* a specific anatomical pathology procedure for a malignant tumour in a private clinic;

To simplify the use of this data, the INCa teams rework the data and restructure the tables as these data and the relational schemas are complex to use in their current form, with a high risk of errors when extracting data for targeted populations for study purposes.

The diagram below illustrates this data reorganisation (Figure 16).

Figure 16
Cohort cancer data reorganisation



The Cancer Cohort makes it possible to work with a large number of patients for each cancer site, including rare cancers. Rare cancers such as testicular cancer or adrenal cancer include substantial patient numbers sufficient for the conduct of robust statistical analyses.

However, given their insufficient granularity, the SNDS data alone cannot answer all the questions regarding the care pathways of people living with cancer, nor do they allow the evaluation of the main epidemiological indicators for cancer monitoring. Case confirmation – in particular the identification of false positives and false negatives, the precise date of cancer diagnosis, and the detailed characterisation of cases (site, behaviour, histology, stage) – requires complementary clinico-biological data from other sources.

2.1.2. The Cancer data platform

Since 2019, INCa teams worked on the creation and expansion of the Cancer Data Platform (PDC) with the addition of clinico-biological data such as:

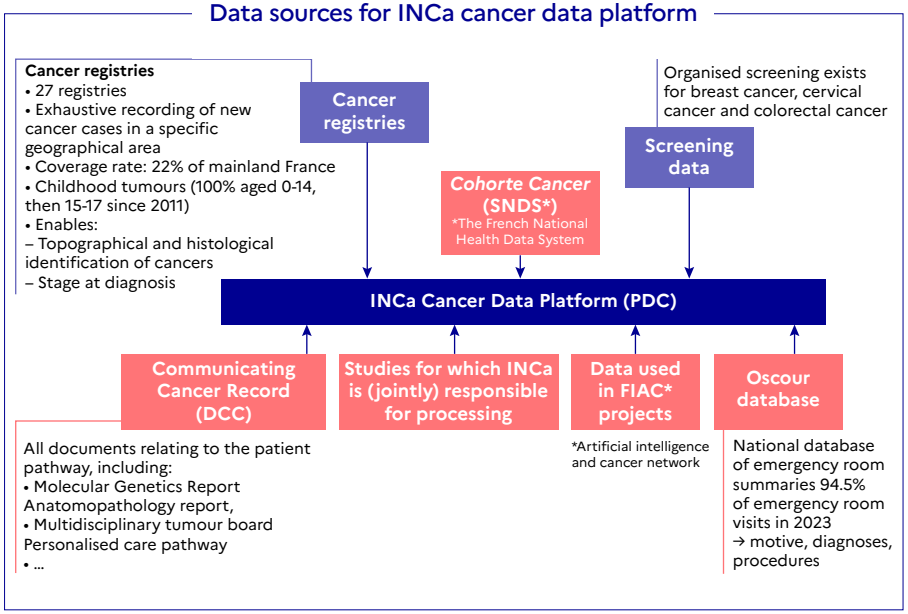
- Cancer screening results
- Data from local cancer registries (27 registries covering 20-24% of the adult population and 100% of paediatric cancers)
- Data from emergency department visit summaries
- Data from the Cancer Shared Medical Record (DCC): hospital-based patient care data, including multidisciplinary tumour board (RCP) reports, personalized care pathways (PPS), molecular genetics or pathology reports where applicable, etc.

The PDC is therefore probably a unique cancer data warehouse worldwide, owing to both the wealth of its data sources and the expertise of INCa teams in managing these data and the methodologies associated with their processing (Figure 17).

Table 4 illustrates the value of each data source, current or forthcoming, implemented on the PDC. Such an enrichment will make it possible to capture the entire care pathway of patients living with or having had cancer (Figure 18).

Figure 17

Data sources for INCa cancer data platform



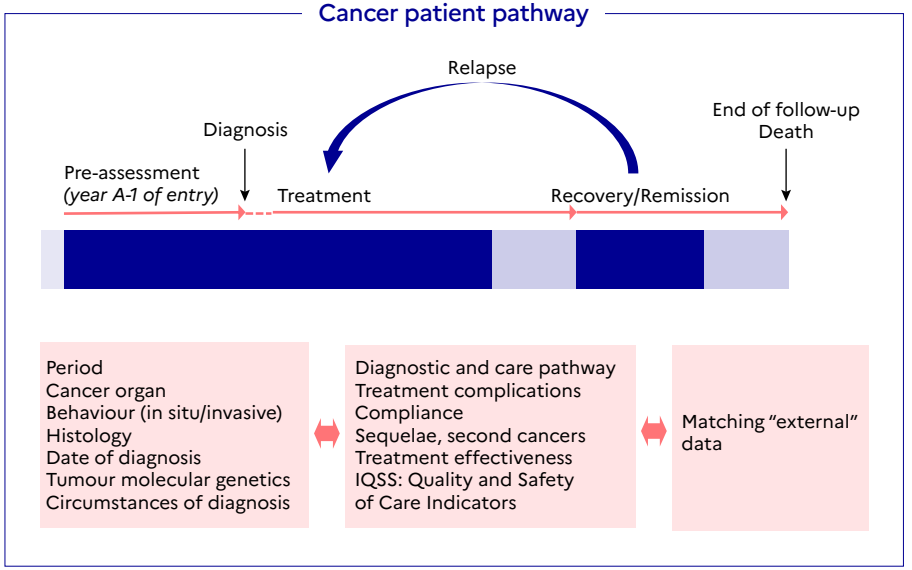
The year 2024 saw the Cancer Cohort data for 2020, 2021, 2022 and 2023 being brought up to date, as well as the signing of data transfer agreements for cancer registry data. The COVID crisis, quality and standardisation issues with data models, and interoperability difficulties meant that it was not possible to update the cohort data and receive other data sources before 2024.

Table 4: Sources and data available on the PDC

Nature of the information	Cancer cohort (SNDS)	Registry	Oscour	DCC	Screening
Cancer organ	x	x		x	
Stage	±	±		x	
Behaviour (in situ/invasive)	±	x		x	
Histology		x		x	
Date of diagnosis	±	x		x	
Tumour molecular genetics				x	
Circumstances of diagnosis	±		x		x
Healthcare consumption	x		x		x

Figure 18

Cancer patient pathway



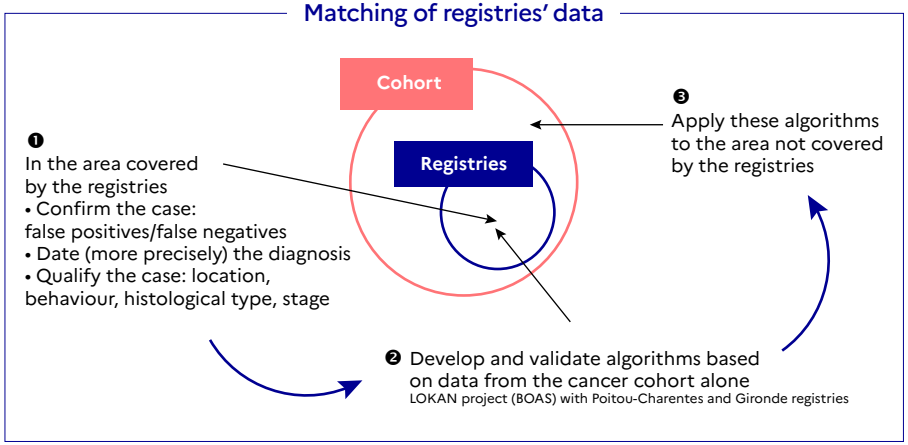
2.1.3. Data matching work

As the INCa data warehouse is intended for research purposes, all data contained therein is pseudonymised. In the absence of a common identifier in the data from the various sources, matching is therefore carried out using deterministic or indirect probabilistic matching. The minimum variables required to enable the matching of different datasets are as follows:

- Gender
- Month-year of birth or age
- Month-year of death
- Municipality of residence or department
- Cancer (organ)
- Date of diagnosis/dated documents
- Medication: International Non-proprietary Name, date
- Treatment (procedure): type/date/facility
- Establishment: Finess or department

The first results of these matches are extremely interesting (83 to 98%), but obviously depend on the quality of the data. Work has begun on matching data from the Cancer Cohort with data from cancer registries, with the aim of refining the case identification algorithms in the SNDS for geaographic areas not covered by local registries (Figure 19): Indeed, the territorial coverage of local cancer registries is 20 to 24% of the country, meaning that nearly 75% of the territory is not covered by a local registry. It is therefore essential to be able to extrapolate the results calculated from local registry data to the entire territory and to determine how data from the uncovered areas can be rigorously utilized.

Figure 19
Matching of registries' data



2.2. The role of INCa and the PDC in the national ecosystem

INCa is currently the only HDW with nationally representative data on patients with cancer and the only one authorised to pool all these data sources. The authorised data covers the entire care pathway for individuals: from diagnosis to end of life, including all treatments and post-treatment follow-up. It already interfaces with the Health Data Hub, Unicancer and other national health data producers such as *Santé publique France* and the CNAM.

The PDC, a data warehouse set up and managed by INCa, is not only a space for sharing medical, administrative, clinical, biological and healthcare datasets, but also aims to provide users (researchers, institutions, ARS, ES, etc.) with secure workspaces containing the data they need to carry out work for which the protocol has been authorised. With a view to supporting and ensuring the compliance of registries, in 2024 the PDC will host the domain-specific solutions of four registries and aims to offer a common domain-specific solutions for all 27 cancer registries by 2026. The PDC and the data it hosts are also used to fulfil the INCa's missions. It also provides authorised teams with documentation on all data and, above all, domain-specific expertise, both in terms of data knowledge and in terms of matching, statistics and epidemiological studies. It is these specific features that distinguish it from other HDW collecting cancer data (excluded registries). Finally, there is also a link between interoperability documents and the OSIRIS common data model (two subjects supported by INCa).

2.3. Data models and interoperability

Data quality is fundamental to its effective use. Several challenges have been identified in improving the quality of health data from production to use. INCa has been working for years to address some of these issues:

- Through the definition of a national and international cancer data model: the OSIRIS model.
- Through the implementation of standardised healthcare documents with healthcare professionals, to integrate them into the interoperability framework and make data available in a consistent and more quickly usable format: To this end, 2024 has been devoted to finalising the specifications and professional standards for the roll-out of the cancer communication file: a call for projects will be launched in 2025.
- The establishment of data collectors for cancer screening results: 2024 will be devoted to setting up an initial national data collector for cervical cancer screening (in a standardised format). This will enable regional screening centres, which are responsible for patient follow-up, to retrieve this data and also allow it to be transmitted to the PDC.
- The establishment of a tool for collecting cancer cases, common to all 27 local registries: currently, each registry uses different tools and applications to collect cases within its geographical area. The standardisation of data collection and processing algorithms are major challenges for improving the production of these data. In 2024, INCa will have defined the specifications and governance of this project, with development work scheduled to begin in 2025.

2.4. The OSIRIS model

The Inter-SIRIC Group's common data model project for the sharing and integration of clinical and biological data in oncology (OSIRIS) focuses on the semantic interoperability of data in oncology. It has been supported by INCa since 2017 with three specific objectives:
- conceptualising cancer through a conceptual data model;
- standardising data according to international standards and terminologies;
- interoperability between hospital information systems.

The overall ambition is to promote multicentre projects by facilitating collaboration between various cancer centres (CLCCs), university hospitals (CHUs), consortia, academic and industrial stakeholders.

In 2024, the Institute's continued leadership of this programme enabled major milestones to be reached in terms of interoperability and structuring of health data for better use in research.

2.4.1. Large-scale deployment of the OSIRIS model

The production of technical documents (logical model, physical model, Python script for extracting terminology via API, Windows/Linux deployment guide for OSIRIS implementation, etc.) associated with the OSIRIS model has consolidated its robustness for large-scale deployment in database management systems. In particular, a relational PostgreSQL model has been proposed, providing an accessible and effective method for implementing the OSIRIS model, thereby facilitating its adoption. Furthermore, publication of the OSIRIS FHIR implementation guide, an international exchange format for health data, on the Institute's website (https://ig-osiris.cancer.fr/) and on the Institute's GitHub account (https://github.com/InstitutNationalduCancer) will facilitate the exchange of medical data between institutions that already have advanced expertise in the HL7 FHIR standard and promote interoperability in oncology at national level.

2.4.2. Participation in the HL7 Europe group

INCa has joined the working group set up by HL7 Europe, the European branch of HL7 International. HL7 Europe is a non-profit organisation based in Belgium, the main objectives of which are to facilitate the interoperability of health data and to contribute to technical aspects of the European Health Data Space. The Institute's involvement in this collaboration constitutes a significant strategic advantage in the field of oncology. In this context, two workshops showcased the OSIRIS model in Athens, Greece (15-19 January 2024 and 25th-29th August 2024), contributing to discussions on the harmonisation of interoperability standards in oncology. This ambitious initiative, named PHOENIX (Patient Health Oncological Expertise Network for International Exchange), aims to promote the adoption and dissemination of standards and tools in the field of technical interoperability in oncology. A roadmap was proposed at the end of 2024 with the aim of establishing the foundations for a common data model in oncology at European level, and digital tools to facilitate its use.

2.4.3. Collaboration with the French Digital Health Agency

Finally, collaboration with the French Digital Health Agency (ANS) has made it possible to perform an in-depth review of the medical terminology used in the OSIRIS model, particularly through the first clinical use case: LUNG-OSIRIS. This work has resulted in the definition of syntax recommendations for prioritising the choice of appropriate terminology according to how the medical variables concerned are used.

The OSIRIS programme will therefore continue in 2025, with two key actions:
- The organisation of a seminar dedicated to the OSIRIS programme, and
- The launch of a call for projects to support use cases based on this standard for sharing and standardisation.

2.5. INCa's role in international data initiatives

In 2024, INCa was involved in the data component of various European and international programmes and has identified programmes of interest.

2.5.1. UNCAN.eu

The UNCAN.eu project aims to establish a federated hub for the secondary reuse of data for oncology research purposes across the European Union. In addition, two calls for proposals have been launched in parallel: one to define international governance and the establishment of nodes, and another to define use cases and invite international research teams to apply. To date, only one French institution, the CNRS is participating in the funded project: the CNRS. Discussion between INCa and the coordinators of the selected project in 2025 are planned to explore opportunities for collaboration. UNCAN was funded under the Horizon Europe programme.

In parallel, the European Commission launched a working group bringing together representatives from each Member State to develop recommendations on the implementation of UNCAN and the structuring of future national nodes. This group is examining, in particular, the expected role of the European platform, the identification of relevant national actors, and possible links with future European Health Data Space infrastructures. France is represented by the DGRI and INCa.

Inter-institutional coordination meetings have been organised ahead of these European exchanges that bring together INCa, the DGRI, the DGS and the DNS to ensure a coherent and coordinated position for France.

2.5.2. EUCAIM

The European Cancer Imaging Initiative aims to encourage innovation and the deployment of digital technologies in cancer treatment and care, with a view to achieving more accurate and faster clinical decision-making, diagnostics, treatments and predictive medicines for cancer patients. It will make large amounts of cancer images and related clinical data easily accessible to European clinicians, researchers and innovators. The cornerstone of the initiative will be a federated European infrastructure for cancer imaging data (EUCAIM). The project is starting with 21 clinical sites in 12 countries and aims to have at least 30 distributed data providers from 15 countries by the end of the project. For France, the AP-HP is one of the providers.

The scientific rationale is that the EUCAIM project should ultimately be closely coordinated with UNCAN to ensure that all patient data is integrated on a single platform. EUCAIM was funded under the DIGITAL programme.

2.5.3. G7 Cancer

G7 Cancer, an international coordination group bringing together the countries[1] most advanced in the fight against cancer, was created on the initiative of INCa on 9 May. Australia – Cancer Australia. One of their first objective is the definition of an international data-sharing strategy focused on paediatric cancers.

1 Canada – Canadian Institute of Health Research (CIHR); France – INCa; Germany – German Cancer Research Centre (DKFZ); Japan – National Cancer Centre (NCC); United Kingdom – Cancer Research UK (CRUK); United States – Department of Health and Human Services, National Cancer Institute (NCI).

2.6. Vision and outlook

The law voted on June 23, 2025, entrusts INCa with the establishment of a national cancer registry, which replaces the PDC. The PDC is already involved in bringing data of interest for cancer epidemiology (cancer registries) into compliance.

Through the sharing and matching of data from multiple sources, the PDC enables the conduct of more comprehensive studies:
- on the attributable fractions of cancer risk factors;
- on care pathways;
- on more precise epidemiology;
- on better characterisation of treatment responses.

The PDC will support the development and implementation of innovative data analysis technologies, including the processing of textual data and the use of artificial intelligence models. It will ensure that all results produced, and not yet fully utilised by INCa are made available, through the creation of dashboards requiring dedicated tools, designed for:
- the general public;
- institutions;
- and decision-makers.

It will also facilitate the international sharing of cancer data, both as a support and as a data producer.

Finally, the expertise of all INCa teams in the field of cancer data that is unique, particularly as it is available in a single organisation, represents a valuable asset for the use and dissemination of these data.

2.7. Publications resulting from the work of the PDC

From 2017 to 2024, 25 articles based on work from the PDC were published in peer-reviewed journals. The topics covered included:
- Access to care
- Screening
- Risk factors and disease progression
- Care pathways
- Quality of care
- Cancer treatments
- Cancer treatments and their costs
- Targeting and description of the population

The full list of publications is available in Appendix 4.

Year of publication	2017	2018	2019	2020	2021	2022	2023	2024
Number of publications	1	2	4	2	1	5	5	5

Three major publications were produced in 2024 using PDC data:
- Dumas E et al. Concomitant medication, comorbidity and survival in patients with breast cancer. Nat Commun. 2024
- Hilmi M et al. Association between the antibiotics use and recurrence in patients with resected colorectal cancer: EVADER-1, a nation-wide pharmaco-epidemiologic study. Dig Liver Dis. 2025
- Wang M et al. Killing tumor-associated bacteria with a liposomal antibiotic generates neoantigens that induce anti-tumor immune responses. Nat Biotechnol. 2024

In addition, in 2019 and 2021 the Institute published four reports on quality and safety of care indicators for:

- Colorectal cancer: ***Cancer colorectal : indicateurs de qualité et de sécurité des soins***, Collection les Données, April 2019
- Breast Cancer: ***Cancer du sein : indicateurs de qualité et de sécurité des soins***, Collection les Données, mars 2019
- Pancreatic adenocarcinoma: ***Adénocarcinome du pancréas : indicateurs de qualité et de sécurité des soins***, Collection les Données, novembre 2021
- Ovarian cancer: ***Cancer de l'ovaire : indicateurs de qualité et de sécurité des soins***, Collection les Données, octobre 2021

EVALUATION AND IMPACT ANALYSIS

3.1. CoARA Working Group: Improving the evaluation and selection practices of research funding agencies

The Institute participated in the establishment of the Assessment Practices of Research Funders think tank within the framework of CoARA (see box) to improve the evaluation and selection practices of research funding organisations.

By actively participating in this group of more than 40 European partners, including two other French agencies – the ANR and the ANRS-MIE – the Institute is helping to identify innovative approaches to selecting projects for funding and training evaluators. The work, which began in autumn 2023, has already made it possible to make progress on parallel on a number of deliverables, including:

- A survey of the criteria and processes for selecting projects for funding;
- The drafting, still in progress, of a best-practice guide;
- Innovative approaches to project selection criteria, strategies and evaluation processes. The work will continue throughout 2025.

COARA (COALITION ON ADVANCING RESEARCH ASSESSMENT): COALITION FOR ADVANCING RESEARCH ASSESSMENT

The Coalition for Advancing Research Assessment was launched in January 2022 with the aim of **drafting an agreement on research assessment reform**. More than 350 organisations from over 40 countries are already involved, and their number is continuing to grow. These organisations include public and private research funding bodies, universities, research centres, institutes and infrastructures, their associations and alliances, national and regional authorities, accreditation and evaluation agencies, learned societies and research associations, as well as other relevant organisations, representing a wide range of views and perspectives.

3.2. The Open Science network welcomes a new member

In 2020, ADEME, ANR, ANRS-MIE, ANSES and INCa signed a joint declaration in favour of open science to promote the dissemination and sharing of knowledge. In 2023, they continued their collaboration on the shared commitments set out in their roadmap.

In 2024, a new member joined the network of French funding agencies: the Foundation for Medical Research (FRM). The FRM is the first non-government agency to join the network. The expansion of the network to include a private research player will enrich exchanges and strengthen the network's visibility at national level.

3.2.1. Progress made by the network

In 2023, the agencies undertook new actions and strengthened their previous initiatives to implement these commitments. Among these actions, all agencies in the network support the Diamond Action Plan published in March 2022 by Science Europe, cOAlition S, OPERAS and the ANR.

The results of the actions carried out are described in the table below (Table 5).

PRIORITY ACTIONS OF THE OPEN SCIENCE NETWORK

In 2024, the agencies committed to continuing their collaboration on the priority actions set out in their roadmap to strengthen their common policy:

- **Promoting immediate open access.** The agencies will continue their commitment by recommending immediate open access, with a CC-BY licence, for publications resulting from the projects they fund. Furthermore, in accordance with the second edition of the National Plan for Open Science, they are committed to collaborating on the implementation of the non-transfer of rights strategy.
- **Supporting diversity in open access publishing models.** Committed to "bibliodiversity", the agencies support the Diamond Open Access Action Plan published in March 2022 by Science Europe, cOAlition S, OPERAS and the ANR. They will work to identify funding levers to support fair, transparent and community-driven scientific communication models.
- **Rolling out a common structured data management plan model.** With a view to preparing data for sharing and dissemination, the agencies are committed to the gradual implementation of a machine-readable data management plan (DMP). As a first step, they aim to roll out their common structured DMP model, based on the OPIDoR DMP tool. Depending on their areas of intervention, the agencies will also work to raise the awareness of private actors about data sharing and openness.
- **Participating in discussions on research evaluation reform.** The agencies will continue their discussions to improve project evaluation practices, taking into account the principles of DORA and the future work of the Coalition for Advancing Research Assessment (CoARA) , established at the end of 2022. In this context, they will ensure that all types of research output, including datasets, source codes and software, are taken into account and that narrative CVs are gradually introduced.
- **Continuing to promote the adoption of ORCID identifiers** and, more generally, implementing a policy of unique and permanent identifiers for research actors, structures and objects, particularly in the context of the roll-out of the appelprojetsrecherche.fr portal.

Table 5: Summary of actions carried out by the open science network

	ADEME	ANR	Anses	INCa*	ANRS MIE
Deployment of the PGD – Science Europe model	✓	✓	✓	✓	✓
Promotion of open access to scientific publications resulting from funded projects	✓	✓	✓	✓	✓
Submission of publications resulting from funded projects to HAL	✓	✓	✓	✓	✓
Immediate open access to scientific publications resulting from funded projects	✓	✓			✓
Archiving of source codes and software produced in projects funded by Software Heritage and description in HAL		✓	✓		
Submission of data from funded projects to data.gouv**	✓	✓	✓	✓	
Establishment of a series of awareness-raising webinars for employees	✓	✓	✓	✓	✓
Support for the non-transfer of rights strategy	✓	✓			✓
Signature of the Action Plan for Diamond Open Access***		✓		✓	✓
Participation in a working group within COARA		✓		✓	✓

* INCa is committed to updating its grant regulations in 2024 (immediate open access, archiving of source codes and software in Software Heritage, support for the non-transfer of rights strategy).

**ANRS Emerging Infectious Diseases (ANRS MIE) will submit its project datasets to data.gouv in 2024.

*** ADEME and ANSES committed to signing the Diamond Open Access Action Plan in 2024.

3.2.2. The webinar series on open science

In 2024, the network proposed two new webinars, animated by figures recognised for their expertise in open science:
- Webinar 1: The Research Data Gouv ecosystem and data workshops
- Webinar 2: Reforming research evaluation

These webinars follow on from an initiative launched in 2022 by the agencies, in collaboration with the Open Science Committee's Skills and Training College, to produce jointly a series of five webinars aimed at their employees. The first series was very well attended and appreciated.

3.3. Evaluation of the scientific impact of INCa research programmes (2008-2018)

The evaluation of cancer research programmes led by the Institute was recommended by the evaluation of the 2014-2019 Cancer Plan and is included in the 10-year strategy (action IV.1.2 "Developing impact assessment and foresight"). The aim of this evaluation is to assess the performance of these programmes and their potential developments in an objective manner.

This evaluation will be based on the collection of research output from the final scientific reports of the projects funded by the programmes. The Institute does not currently have these data and efforts are underway to retrieve them retrospectively.

The ex-post analyses to be carried out should provide the Institute with an analysis of:
- The scientific output and scientific or structural leverage of the Institute's research support programmes.
- The call for proposals and selection process for research projects
- The changes that should be made to the Institute's future research strategy

3.4. Review of the PHRC-K programme over the 2011-2023 period

The Hospital Clinical Research Programme in Oncology (PHRC-K) is the main public funding mechanism for clinical cancer research in France. Its mission is to support studies evaluating the efficacy, safety and tolerance of health technologies that have a direct impact on patient care.

From 2011 to 2023, the PHRC-K funded 500 projects for a total investment of 258 million euro. This report presents data on the distribution of funding, the diversity of organ specialities covered and the involvement of different disciplines in these projects.

3.4.1. Strategic priorities of the PHRC-K

The programme is structured around several key strategic priorities:
- **Reducing treatment toxicity:** Promoting therapeutic de-escalation to minimise adverse effects while maintaining efficacy.
- **Personalisation of treatments:** Development of tailored therapies for specific populations, particularly in paediatric and geriatric oncology.
- **Integration of innovative technologies:** Incorporating advanced radiotherapy, surgical innovations and other health technologies to optimise clinical outcomes.
- **Quality of life and supportive care:** Improving treatment combinations and support strategies to enhance patient well-being and quality of life after treatment.

3.4.2. Funded projects and financial commitment

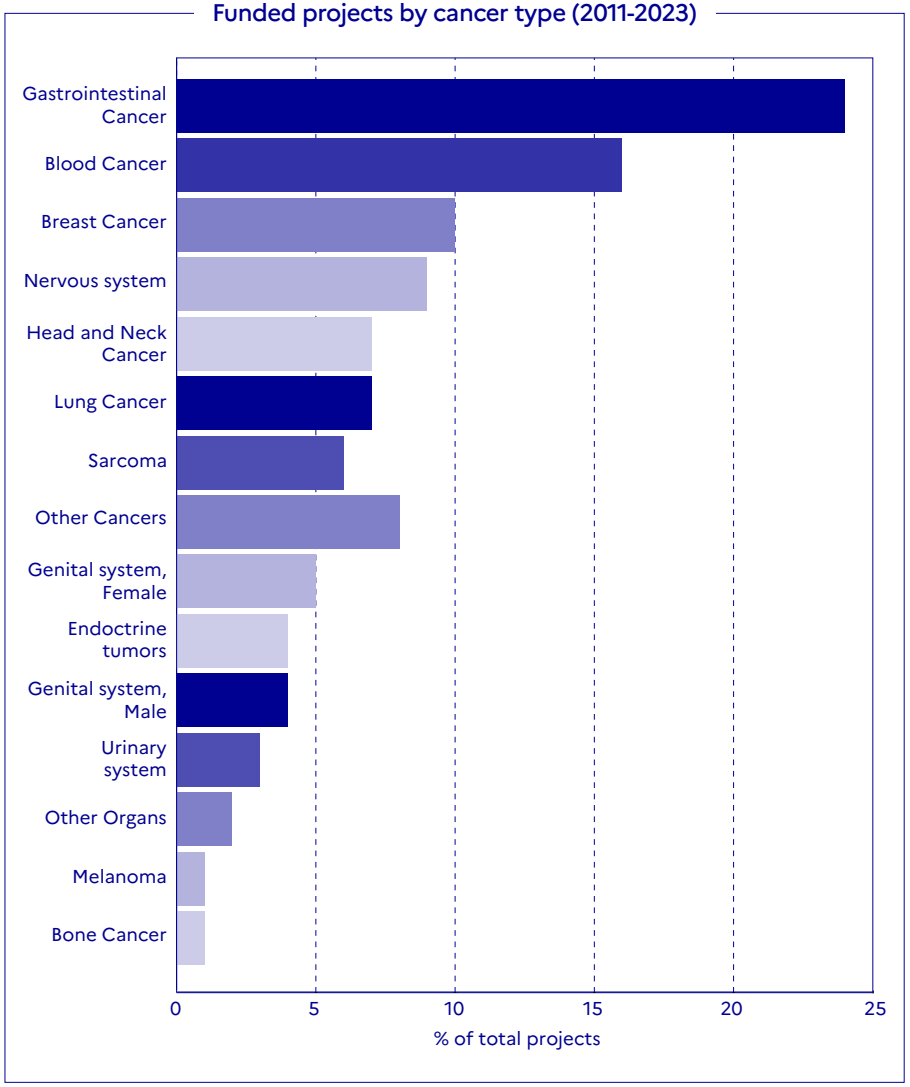
- **Total number of projects funded:** 500 projects, selected from 2,393 letters of intent (selection rate of 20.9%).
- **Total financial commitment:** €258 million.

- **Project cost trends:** The mean cost of a project has risen from €338,000 to €822,000. This rise can be attributed to several factors:
  - Inflation in the health and research sector: The overall increase in operating costs, including salaries, consumables, and equipment;
  - Increasing complexity of clinical trials: Oncology clinical trials have become increasingly complex, particularly with the advent of personalized medicine and immunotherapies;
  - Stricter regulations: Regulatory requirements for conducting clinical trials have evolved, potentially leading to higher costs related to data management, monitoring, and patient safety.
  - Types of studies funded: A growing proportion of phase III trials-generally more costly than phase II trials-also contributes to the rise in the average cost.

3.4.3. Cancer type specialities

The projects funded by the PHRC-K cover a wide range of cancer types, ensuring representation for both high-prevalence cancers and rarer forms. The figure below shows the updated breakdown of projects and funding by organ speciality (Figure 20):

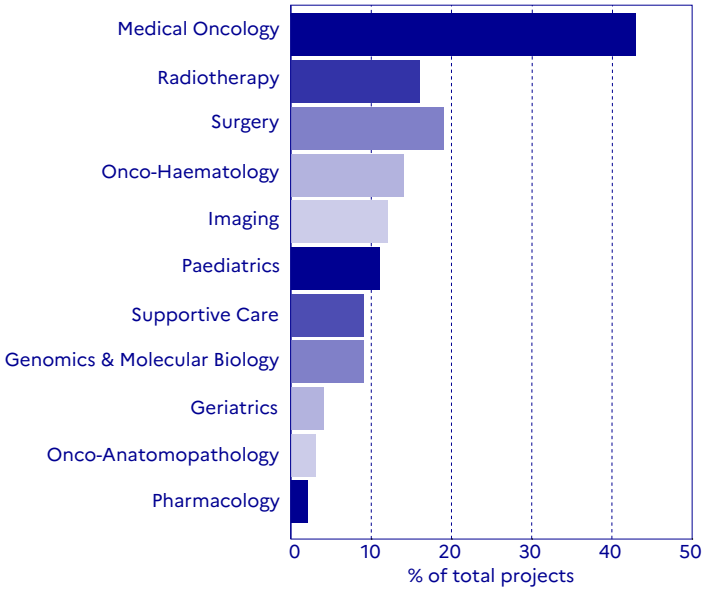
Figure 20
Funded projects by cancer type (2011-2023)



3.4.4. Covered disciplines

The projects also cover a broad spectrum of disciplines, reflecting a multidisciplinary approach to oncology (Figure 21):

Figure 21
Projects funded, by discipline (2011-2023)



3.4.5. Scientific Impact and Notable Projects

A study conducted by inca in 2024 confirmed the relevance and credibility of the projects funded by the PHRC-K, highlighting:

- **High-impact publications:**
  In total, 161 scientific articles were published in leading journals, such as *J Clin Oncol* (13), *Lancet Oncology* (6), *NEJM* (3), *Blood* (4), *JAMA Oncology* (2) and *Annals of Oncology* (2), with impact factors of up to 98.4 (*Lancet*) and percentiles often above 95.
- **Distribution by Organ Speciality:**
  Publication frequency was highest for gastrointestinal cancers (40), haematological cancers (23), genital system cancers, female cancers and lung cancers (13 each), breast cancers, endocrine tumours, head and neck cancers and sarcomas (11 each). Less common cancers, such as bone cancer, melanoma and other organs were also represented among publications.
- **Breakdown by discipline:**
  The major contributions came from medical oncology (66 publications), surgical oncology (39), radiotherapy (29), genomics & molecular biology (17) and imaging (19). Other disciplines, such as geriatric oncology, paediatric oncology and supportive care also regularly produced scientific output.

3.4.6. Pioneering Clinical Trials

- *The Hypo G01 Trial* (Dr. Sofia Rivera, Gustave Roussy): Demonstrated the efficacy of a shorter, less intensive radiotherapy regimen for breast cancer, presented at the ESMO 2024 congress.
- *The SHAPE Study* (Dr. Gwenaël Ferron, IUCT-Oncopole, Toulouse): Published in the *NEJM* in February 2024. This study showed that a simple hysterectomy is as effective as radical surgery for early-stage cervical cancer, significantly improving patient quality of life.

3.4.7. Conclusions and Future Prospects

The PHRC-K programme has established itself as a pillar of public cancer research in France. By supporting high-quality multidisciplinary projects, it has enabled significant clinical advances and improved patient care. Through its approach, which integrates both cancer type-specific challenges and disciplinary contributions, the PHRC-K programme is continuing to shape the future of cancer research by combining innovation, equity and clinical relevance.

ACTIONS FOR CANCER RESEARCH

INCa supports cancer research by funding programmes involving calls for projects or calls for applications. **In 2024, the Institute managed 15 programmes funding 171 projects, including the designation of the 19 CLIP[2] of early-phase clinical research centres and of 2 research networks of excellence on poor-prognosis cancers, for a total budget of 108 million Euros (refer to appendices 1 and 2.1).**

In parallel, *Institut Thématique Cancer (IT Cancer)* led five programmes through calls for projects and funded 61 research projects. *IT Cancer* also participated in three partner programmes, funding six projects and extending the funding of three projects for a total budget of €1.6 million. **In 2024, IT Cancer's investment in fundamental and translational cancer research will therefore amount to €21.6 million, supporting a total of 70 projects (refer to appendices 1 at 2.2).**

In addition to the funding mechanisms, additional activities are conducted to support cancer research.

4.1. Structuring of cancer research

4.1.1. Structuring of programmes in 2024

In 2024, the Institute continued its research structuring activities through two programmes:
- The designation of CLIP[2] centres 2024-2029 (see Highlight 2)
- The designation of integrated research networks of excellence for poor-prognosis cancers (see Highlight 1)

The Institute supported the structuring of the UCOM (Unicancer Outre-mer) group.

UCOM (Unicancer Outre-mer) group
UCOM is a multidisciplinary and open (multi-institution) group of cancer experts with extensive knowledge of the issues and the functioning specific to French overseas territories. It is dedicated to reducing disparities in access to cancer care in French overseas territories (DROM-COM)[2] and to guaranteeing French citizens in these territories access to innovation and research.

As a means of addressing regional inequalities, which are a major issue in the DROMs, the Institute decided in 2024 to support this group with 100,000 Euro in seed funding. This funding will help to structure and implement actions to promote cooperation, enabling this group to continue and strengthen the momentum it has built up with a view to applying for the Institute's cooperative intergroup 2027 designation's round.

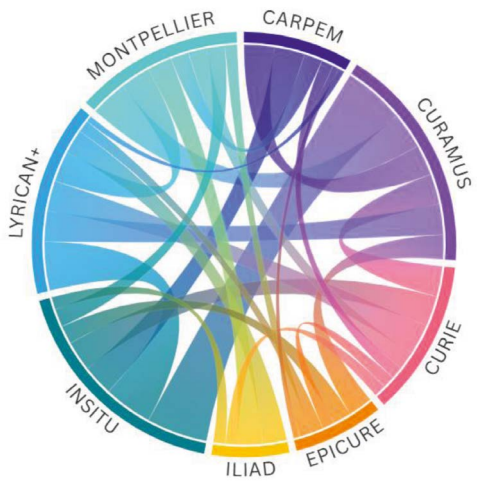
These three programmes complement the portfolio of structuring programmes currently underway: ADDITION OF A MAP

4.1.2. Monitoring of funded and ongoing structuring projects

Review of inter-SIRIC collaborations
The eight integrated cancer research sites (SIRIC) designated by the Institute aim to implement multidisciplinary research programmes of excellence to optimise and accelerate the production of new knowledge and to promote its dissemination and application in cancer care. They have three missions: to integrate, structure and promote cancer research in France.

2 Overseas Departments and Regions and Overseas Municipalities.

Figure 22
Diagram showing the links between the eight SIRICs



Coordination of the SIRIC network

The Institute coordinates the SIRIC network by organising an annual seminar bringing together the directors and managers of integrated research programmes from the eight sites. This seminar provides an opportunity to share the progress of programmes, to highlight flagship projects and to strengthen interactions between sites. In addition, two more operational annual meetings are also organised by the Institute, bringing together the coordination teams (project managers, general secretaries, administrative managers and financial managers).

Inter-SIRIC collaborations

As part of the monitoring of SIRIC activities, the Institute, with the help of the SIRICs, has assessed inter-SIRIC collaborations. The third SIRIC designation for 2022-2027 provides strong incentives to strengthen interactions between designated sites. At least 10% of the budget of each SIRIC must be earmarked for the development of inter-SIRIC collaborations. The implementation of joint actions between sites increases cooperation and strengthens interactions in cancer research between SIRICs with complementary skills (e.g., inter-SIRIC project collaborations, validation of new multisite technological or organisational approaches, organisation of joint events, etc.).

At the end of the second year of designation, 41 areas of collaboration had been initiated. There are numerous inter-SIRIC collaborations involving all sites, even those designated more recently in 2018 (ILIAD and CURAMUS) and in 2023 (INSITU) (Figure 22). Inter-SIRIC collaborations are characterised by a diversity of partnership types, focusing principally on joint research projects (68%) but also on other types of concerted actions, such as (Figure 23):

- The organisation of scientific events (seminars, workshops, joint symposiums, etc.);
- The acquisition of shared equipment;
- Joint structuring actions (e.g., setting up a research network);
- Joint coordination of teaching (e.g., DIU).

The number of SIRICs involved in these partnerships varies, depending on the initiative (Figure 23):

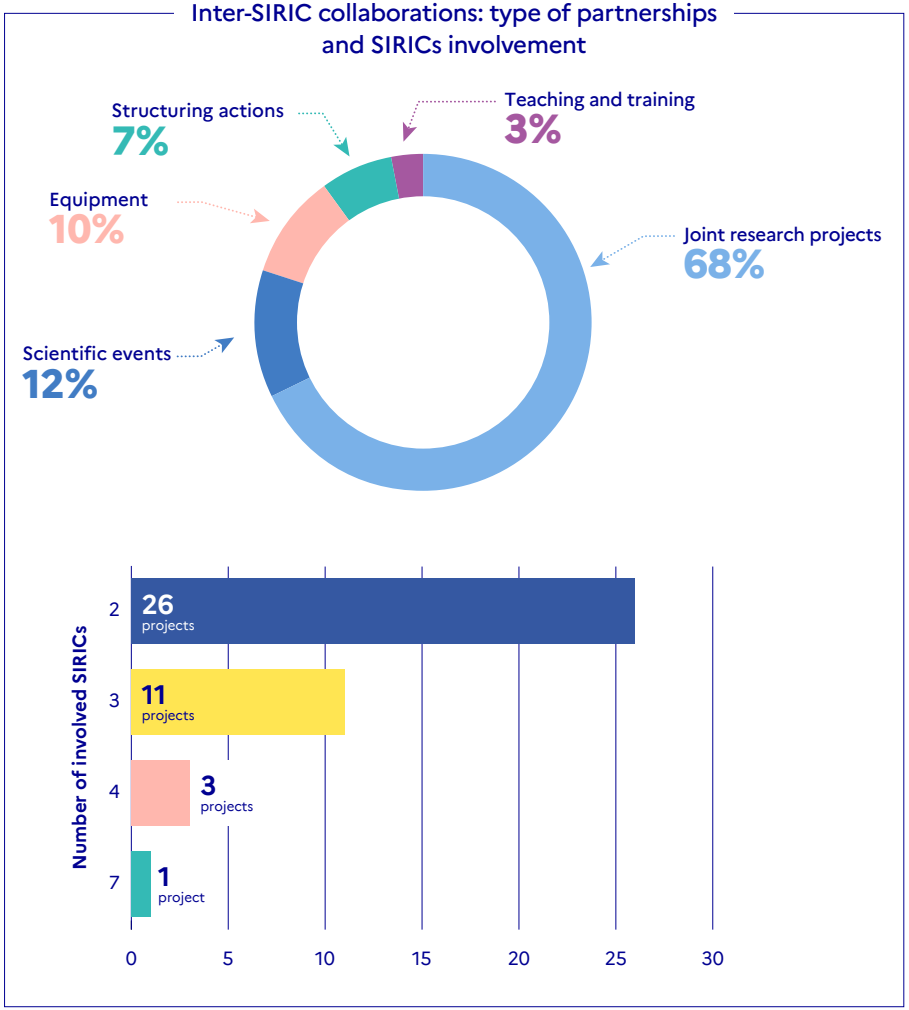
- More than half are bilateral collaborations;
- 1/4 are trilateral collaborations;
- The others involve between 3 and 7 SIRICs.

These elements demonstrate the positive impact that SIRIC designation can have on strengthening cooperation between sites of excellence. This dynamic reflects a network structure, the impact of which on scientific advances or the long-term sustainability of collaborations will need to be evaluated.

Gene therapies and CAR-T cells research field: UNITC national consortium monitoring

The UNITC network is a national consortium dedicated to advancing research on CAR-T therapies and other innovative gene therapies in France. Designated by INCa in April 2024, it fosters collaboration, promotes multidisciplinary research and aims to strengthen the international visibility of French academic research in cell and gene therapies.

Figure 23
Inter-SIRIC collaborations: type of partnerships and SIRICs involvement



In 2024, the UNITC network promoted inter-laboratory quality control through the CIL initiative, produced a publication on the delivery of fresh CAR-T cell bags and initiated collaborations with the European consortium T2EVOLVE (see 10.2.1). This network has also begun drafting a white paper on the cost of industrial CAR-T cells in France and creating a centralised database of calls for projects. A Task Force on *in vivo* CAR-T therapies has been launched and the first UNITC Masterclasses on cell and gene therapies have been set up.

UNITC wishes to continue increasing its impact by participating in European funding opportunities, organising specialised workshops and masterclasses, and collaborating more closely with international partners. The network aims to increase visibility and alignment with public policies for the academic development of CAR-T cells.

National federations for paediatric cancer data

A call for applications aiming to kick-start the implementation of data sharing in paediatric oncology was launched by the Institute in 2019. It aimed to bring together different communities of researchers and clinicians to form national federations around a disease or group of diseases of interest.

Four federation projects were selected for a total budget of €3.61 million. Each federation consisted of dozens of teams, bringing together clinicians and researchers. The teams in each federation had to rely on the pooling of locally available data, which required prior structuring before it could be shared.

An independent international monitoring committee was set up under the auspices of the Institute to monitor the projects. This committee meets annually to monitor progress and to issue recommendations enabling each federation to ensure the smooth running of the projects.

At the 2024 monitoring meeting, the committee highlighted the ambitious nature of the projects and the involvement of a large number of partners in each of the federations. It also noted the good progress made by three federations and made several recommendations to all four federations.

AS A REMINDER, THEIR OBJECTIVE WAS TO CREATE OR IMPLEMENT

- A clinical, biological, genomic and radiomic database on osteosarcoma for the first federation;
- A clinical and biological database on paediatric acute myeloid leukaemia for the second federation;
- A database on liver cancer in children for the third federation;
- A multi-omics database on several paediatric cancers for the fourth federation.

Each federation was responsible for:
- Identifying the available data meeting the needs of researchers (including samples and images)
- Ensuring the interoperability of these data, based on national models and standards, including the OSIRIS set in particular
- Proposing a technical solution to facilitate the effective sharing of these data within the federation and to improve their accessibility for research
- Defining governance for the pooling, sharing and use of these data
- Addressing a fundamental and/or translational academic research question by leveraging the prior pooling, structuring and sharing of data

Preclinical radiotherapy research: RadioTransNet national network monitoring

RadioTransNet is the French national preclinical research network dedicated to advancing research in radiotherapy. Designated since 2017 and funded by INCa, this network facilitates collaboration, strengthens academic capacities and increases the international visibility of French research in radiotherapy.

In 2024, RadioTransNet updated its four major scientific priorities:
- Definition of target volumes;
- Interaction of ionising radiation with healthy tissue;
- Combination therapies;
- Dose calculations;

for inclusion in its next white paper on radiotherapy.

Notable achievements include the award of a master's degree scholarship, support for scientific events, such as the first school of radiophysics for radiobiologists, collaboration with Resplandir and participation in major conferences on radiotherapy. Key insights from clinical research transferred into basic research related to re-irradiation dosimetry, FLASH therapy, toxicity concerns and the relevance of spreading.

In the future, RadioTransNet plans to launch an update of the preclinical research observatory, to organise a workshop on the transfer of innovation to clinical practice and to hold its second congress in 2025, while strengthening links with the industrial sector and securing European funding opportunities.

4.1.3. Support for molecular genetics platforms

Updating indications for molecular testing for patients with non-small cell lung cancer

When cancer patients are admitted for treatment and throughout the course of their illness, various genetic tests are performed on tumours for diagnostic, prognostic, theranostic or disease-monitoring purposes.

The number of patients and the volume of tests required per patient are constantly increasing, with the prescription of precision treatments. In addition, for certain locations, new precision treatments requiring testing are regularly granted marketing authorisations (MA), early-access authorisations (EAA) or compassionate-use authorisations (CUA). Prescribers may therefore find it difficult to keep up with all the latest developments.

As a result, the strategy for performing molecular tests is becoming increasingly complex, with:
- The need to search for different types of biomarkers in individual patients and to use several techniques in parallel;
- The possibility of using multiplexed technique for the simultaneous investigation of several molecular abnormalities,
- The growing possibility of accessing experimental treatments based on the presence of new targets.

In 2022 and 2023, in collaboration with experts in pathology and molecular biology and with clinicians, the Institute published recommendations defining the testing strategy to be implemented for each patient at each stage of the disease so as to prevent lost opportunities. Colorectal cancers, melanomas and non-small cell lung cancers were targeted by these recommendations intended for prescribers and professionals responsible for carrying out the tests.

In view of the new authorisations granted for certain treatments (whether new molecules or extensions of authorisations), the recommendations for non-small cell lung cancer were updated in 2024. They will be published on the Institute's website in March 2025.

Update and extension to new analyses of the structured and interoperable molecular genetics report

In 2016, INCa introduced a detailed reporting model for mutation testing in solid tumours. This document, which was integrated into the interoperability framework in 2019, specifies the information (and its format) to be sent to clinicians and an exchange protocol. The aim is to ensure the rapid and smooth exchange of information between different institutions – particularly healthcare institutions – while facilitating research projects.

In 2023, a working group was set up to enrich the document with new analyses (mergers, copy number variations, methylation and microsatellite status) and adapt it to malignant haematological diseases.

In 2024, this group defined the new items and structure of the document. These elements were validated by professionals from molecular cancer genetics platforms and the corresponding learned societies during a national review.

The document is scheduled for publication in 2025. Work will then be performed in collaboration with the ANS (*Agence du numérique en santé*, the French digital health agency) for integration into the interoperability framework, and with specialist software publishers to ensure that they incorporate this new version into the software used to produce molecular genetics reports. This tool will be essential for facilitating exchanges between healthcare establishments, research projects and clinical trials.

4.1.4. Ongoing discussions for future structuring programmes

Structuring of research on cancer screening

Cancer screening is central to the Institute's Ten-Year Cancer Control Strategy and is one of the key levers for improving prevention and patient care. The Institute therefore wishes to support research efforts in this area to develop a high level of national expertise.

A working group of scientific and clinical experts has been set up to define the most appropriate ways of supporting this research field (designation of centres, creation of a research network in the field of cancer screening, etc.) It will take stock of existing strengths and expertise, identify existing structures or mechanisms, and, where relevant, link them to initiatives already in place at European and international levels, and identify needs.

The working group's findings, combined with cross-functional work within the Prevention Department, will enable new proposals to be made for the second roadmap of the Ten-Year Strategy.

Support for the development of patient-derived cancer models

INCa wishes to participate in structuring fundamental and translational research for the development of new models. In 2024, discussions were held to define the terms of support for the structuring of a national network dedicated to PDX and derivative models.

Understanding tumour properties and anticipating recurrence or resistance to treatment requires accurate assessment of the complexity and heterogeneity of tumours in their entirety, in conditions as close as possible to clinical reality. New models will need to be developed to achieve this goal. They will need to meet several requirements:

- They must take into account interindividual variability, as each individual reacts differently to current drug therapies;
- Personalised medicine: they will need to test/predict responses or resistance to treatments and be useful for monitoring disease progression to

anticipate possible recurrence; possibility of conducting longitudinal toxicity studies at lower cost and without risk to patients;
- They will need to include an analysis of the spatiotemporal dynamics of tumours to take into account the dynamics of tumour plasticity in a complex environment, particularly during treatment, and biological processes.

At the structural level, the establishment of new models requires a high degree of interdisciplinarity, including medicine, biology, bioinformatics, biophysics, mathematics, statistics, microengineering, physics and imaging, with skills that are often difficult to combine in one place.

4.2. International collaboration

In 2024, the Institute continued its international collaboration activities, notably with the TRANSCAN network (see Highlight 6.3.4) and the bilateral partnership between INCa and AMED in Japan (see Highlight 6.3.5).

4.2.1. T2EVOLVE: A consortium working to improve access to CAR-T cell immunotherapy in Europe

INCa is an active partner in T2EVOLVE, a consortium of academic and industrial leaders funded under the European Union's Innovative Health Initiative (IHI) for a period of five years, from January 2021 to December 2025. T2EVOLVE works to accelerate the development of and to improve access to CAR-T cell immunotherapy in Europe.

The T2EVOLVE consortium has divided its activities into eight work packages (WPs) working on different aspects of CAR-T cell development, to achieve its ambitious goals. The Institute is actively contributing to two of these groups:
- Working Group 2 (WP2) on patient engagement and information and improving access to CAR-T cell therapy.
- Working group 5 (WP5) dealing with the standardisation of analytical practices before and after CAR-T cell infusion.

Production of explanatory videos for information and access to CAR-T cell therapy

In 2024, WP2, in close collaboration with the patient and carer group (WGPC), produced two explanatory videos that are now available on the Patient Hub of the T2EVOLVE website (https://t2evolve.com/information-for-patients/) in six different languages. The first video explains how to identify reliable information about CAR-T cell therapies on the internet. The second video discusses the factors influencing patient eligibility for CAR-T cell therapy.

T2EVOLVE WP2 has begun the production of two additional explanatory videos that will be available on the T2EVOLVE Patient Hub in 2025: one will explain the risks of long-term infections after CAR-T cell treatment, and the other will focus on information and informed consent forms for clinical studies.

European quality-of-life survey

The initial results of T2EVOLVE's European survey on the quality of life of patients after CAR-T cell therapy, with more than 300 respondents, were presented at the European Haematology Association (EHA) Congress in 2024. A manuscript will be submitted to a scientific journal in 2025.

These results will also be used to formulate recommendations aimed at making information and informed consent forms for clinical research on CAR-T cells more accessible to patients.

In addition, T2EVOLVE conducted two surveys: one of sponsors of clinical studies of CAR-T cell therapies and the other of investigators.

The results of these three surveys, dealing with the perspectives of patients, study sponsors and investigators, were presented at a roundtable session at the 51st EBMT (European Society for Blood and Marrow Transplantation) Congress in April 2025.

Mapping of practices

INCa is also contributing to the working group on standardising analytical practices before and after CAR-T cell infusion (WP5). The mapping of practices for quality control, CAR-T cell product release criteria and immunomonitoring after CAR-T cell cell administration has been completed. The Institute is currently helping to harmonise immunomonitoring and pharmacokinetic methods after CAR-T cell administration. The guidelines for this harmonisation should be shared on the T2EVOLVE website by the end of the project in 2025.

4.2.2.OncNGS reflection on innovation

Inequalities due to the high costs of current diagnostic and theranostic tests must be reduced to ensure equitable access to innovative therapies for all, in both routine care and clinical trials. The technological challenge lies in providing effective tools for the molecular profiling of circulating tumour material in liquid biopsy specimens (DNA and RNA), using a pan-tumour NGS tumour marker analysis kit integrated into a decision support system including interpretation of results and production of a medical report.

As part of a precommercial procurement (PCP) project funded by the European Horizon 2020 programme, an "OncNGS" consortium has been formed. It brings together eight buyers from five European countries, including the *Institut Curie* and the *Hospices Civils* de Lyon in France, with the support of six other organisations, including the Institute.

A PCP works by bringing together a group of potential buyers, who define and launch a call for tenders to create a solution that meets an unmet need in the market in an area of public interest. Interested companies submit their proposals, and those selected work to develop the solution defined by the consortium'. The tender system is designed to ensure that at least two distinct solutions reach the market.

4.2.3. Tobacco research with the US National Cancer Institute (NCI)

Since 2019, scientific cooperation has been established between the Institute and the NCI, with the main objective of ultimately defining a shared research policy on tobacco. Contexts differ between the United States, France and Europe, but all three areas have challenges and research questions in common, particularly as regards people who are vulnerable and/or who have little access to healthcare systems, to emerging tobacco products (e-cigarettes) and effective intervention measures in terms of prevention and smoking cessation.

The Institute and the NCI have defined three main areas of focus for this joint work to address these issues:
- *Tobacco use and co-behaviours*;
- *Tobacco use among populations with health disparities*;
- *Multiple tobacco product use*.

A consortium of international experts in the field of tobacco was formed in a second phase of this initiative. At the same time, a white paper was produced by teams from the Institute and the NCI based on an analysis of American and European scientific publications in these three areas.

The Institute-NCI Workshop *on "Current state and tobacco cessation interventions and tobacco prevention research"* was held in November 2022 and brought together about 40 American, European and French researchers and experts. It was co-chaired by Dr. Nancy Rigotti and Prof. François Alla. This workshop aimed to bring together international researchers from different disciplines to take stock of the knowledge acquired, to highlight gaps in knowledge and to jointly identify priority research questions to be addressed.

Following this rich exchange, several meetings with consortium members were held via videoconference, particularly to refine and prioritise certain themes. Finally, the Institute and NCI teams carried out extensive synthesis,

classification and prioritisation work to produce a strategic document setting out the research priorities in the three areas. A short and a long version of this document will be proposed and promoted in 2025. Designed and developed with researchers, this document is intended for research funding bodies and the research community involved in tobacco control. It provides a guide to inform these stakeholders about research and the structure of research in the domain of tobacco.

4.3. Monitoring clinical research activity in oncology

4.3.1. DROM programme: Support for clinical research in French overseas territories

Promoting access to clinical trials for French patients in overseas territories is one of the objectives of the Ten-Year Strategy, as part of the action: "Offering all patients the opportunity to participate in clinical trials, opening trials to more centres, including those in overseas territories, while ensuring the quality of these centres for clinical research" (action III-5.2).

To this end, the Institute has provided additional funding for clinical research projects funded by the PHRC-K, the Institute's clinical research funding programme, to open research centres in French overseas territories. Projects suitable for the opening of these additional centres were identified by INCa and the Interregional Group for Clinical Research and Innovation in Hospitals in South-West France and Overseas Territories (GIRCI SOHO) during two pilot programmes, the first in 2019 and the second in 2023.

PROJECTS FUNDED IN 2019 AND 2023

In 2019, seven projects were funded, at a cost of 300,000 Euro to enable 104 patients to be included in clinical trials in oncology in French overseas territories (DROMs). The targeted diseases were colon cancer, head and neck cancer, cervical cancer and leukaemia. **A total of 18 patients were included in the trials.**

In 2023, 10 projects were selected to receive a total of 330,000 Euro in funding to enable the inclusion of 190 patients in cancer clinical trials in the DROMs. The targeted diseases are thyroid cancer, prostate cancer, oropharyngeal cancer, myeloproliferative neoplasms, spinal metastases, cerebral lymphomas and acute promyelocytic leukaemia (Table 6). **By December 2024, 28 patients had been included. Further inclusions are planned for 2025.**

Organisation of a first web conference on the support system for French overseas territories

In October 2024, the Institute and the SOHO GIRCI organised a web conference to review the Institute's financial support scheme for the DROMs, to share feedback from project leaders and investigators, and to initiate a discussion on the prospects for this scheme. About 60 participants attended the event.

Table 6: Characteristics of the 10 clinical research projects supported in 2023 in French overseas territories and status of enrolment as of December 2024

Project	Funding	Duration of the project	Investigation centres	Number of patients to be enrolled	Number of enrolments by December 2024
PEACE 4 – A phase III trial of aspirin and metformin in patients with castration-resistant prostate cancer	€49,772	60 months	CHU de Martinique	50	Centre opening in progress
PRESTO – GETUG-AFU trial – Phase III randomised controlled trial of local ablative treatment of metastases in patients with oligometastatic hormone-naive prostate cancer	€27,545	60 months	CHU de Martinique	30	10
ZOSTER – Multicentre medical-economic study evaluating the efficacy of adding zoledronic acid to stereotaxic radiotherapy in the treatment of vertebral metastases	€13,451	60 months	CHU de Martinique	15	2
AVAJAK – Apixaban/rivaroxaban versus aspirin for primary prevention of thrombo-embolic complications in JAK2V617F-positive myeloproliferative neoplasms	€50,289	60 months	CHU de La Réunion	54	2
CARLHA-2 – Combined apalutamide, radiotherapy, and LHRH agonist in prostate cancer patients after prostatectomy	€17,172	60 months	CHU de Martinique	12	12
GETUG-AFU-31 – Phase I/II multi-centre study evaluating the efficacy of repeated stereotactic radiation in patients with intraprostatic tumour recurrence after external radiation therapy	€33,650	60 months	CHU de La Réunion CHU de Martinique	5 2	1 1
INTERMEDIATE-01 – Multicentre phase III trial comparing two strategies in intermediate-risk differentiated thyroid cancer patients: Systematic radioiodine administration (3.7 GBq I131 after rhTSH) versus decision about radioiodine treatment guided by a postoperative work-up based on serum Tg values and diagnostic RAI scintigraphy	€17,472	60 months	CHU de la Guadeloupe	15	Enrolment ongoing
TORPHYNX01 – Prospective observational cohort study of early-stage squamous cell carcinoma of the oropharynx treated by primary intensity-modulated radiation therapy or transoral surgery	€4,348	12 months	CHU de la Guadeloupe	10	Centre opening in progress
LOC R01 – Randomised phase IB/II study of escalating doses of lenalidomide and ibrutinib in association with R-MPV as a targeted induction treatment for patients aged 18 to 60 with a newly diagnosed primary central nervous system lymphoma.	€38,997	60 months	CHU de La Réunion	2	Project discontinued
ICC-APL-STUDY 02 – Treatment study for children and adolescents with acute promyelocytic leukaemia: A multicentre study combining arsenic trioxide (ATO) and all-*trans* retinoic acid (ATRA) +/– gemtuzumab ozogamicin for patients with newly diagnosed acute promyelocytic leukaemia	€80,186	60 months	CHU de La Réunion	4	Enrolment ongoing

4.3.2. Registry of clinical trials in oncology open in France

Since 2007, the Cancer Clinical Trials Register has provided free access to all cancer clinical trials conducted in France via the Institute's website: https://www.cancer.fr/personnes-malades/registre-des-essais-cliniques.

It provides up-to-date information to patients, healthcare professionals and the general public on clinical trials in oncology open in France and facilitates the search and selection of clinical trials with a multi-criteria search engine (sponsor; target organ; geographic criteria; Figure 24).

Sponsors of clinical trials in oncology can directly register, manage and update their trials via a web database.

Trials visible on the cancer clinical trial registry

4,722 clinical trials posted on the INCa website in December 2024, promoted by more than 578 industrial and academic sponsors (Figure 24).

- 579 trials currently recruiting.
- 55% are promoted by academia.
- 74% of the trials are therapeutic trials.

4.3.3. The National clinical research survey: monitoring clinical research activity in oncology

As part of Priority III.5, "Ensuring patient access to innovative therapies in clinical trials", of the 2021-2030 Ten-Year Cancer Control Strategy, the Institute's annual survey assessed clinical research activity in oncology in France. Using data reported by university hospitals, comprehensive cancer centres, public healthcare establishments (hospital centres) and private healthcare establishments (private hospitals, clinics, private hospital groups), this survey provides an estimate of the rate of inclusion in clinical trials in oncology at national level (Figure 25, Figure 26, Figure 27 and Table 7).

Figure 24

Number of clinical trials in the registry by year

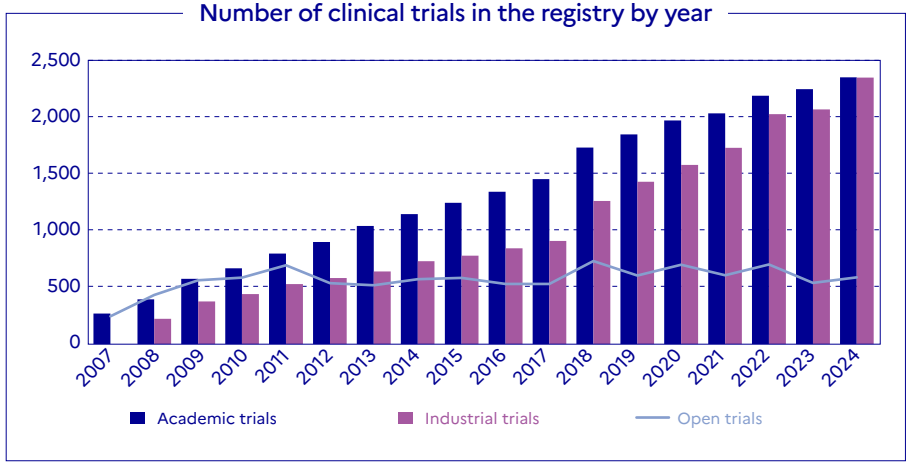
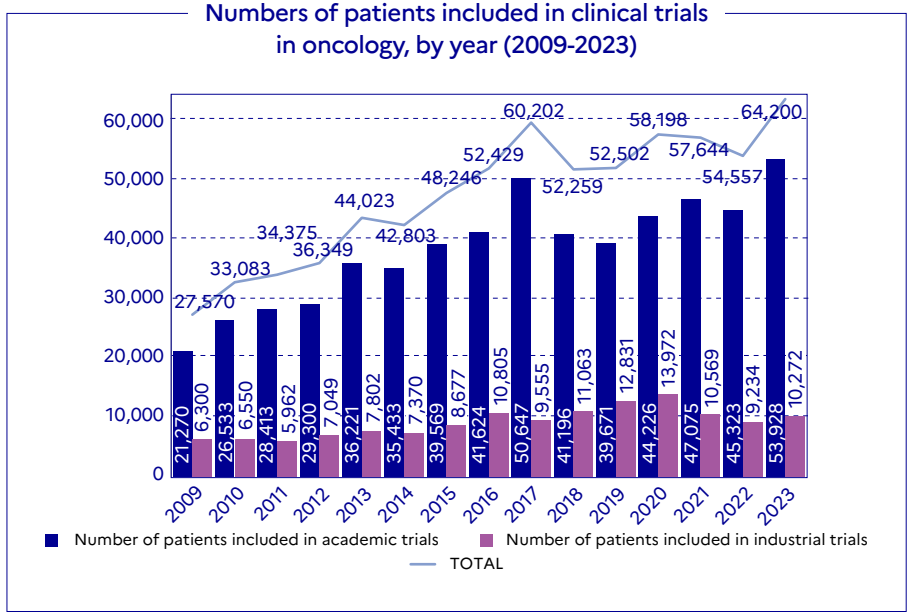


Figure 25

Numbers of patients included in clinical trials in oncology, by year (2009-2023)



Inclusion of patients in clinical trials in oncology

The 2024 survey was based on data from the previous year, i.e., 2023.

In 2023, 64,200 patients were enrolled in clinical trials in oncology:
- 27,206 patients enrolled in therapeutic clinical trials;
- 84% participating in trials with academic sponsors;
- 51,665 patients in clinical trials for solid tumours and 12,525 patients in clinical trials for haematological conditions.

This survey shows a steady increase in the number of patients participating in clinical trials over the last 15 years: between 2009 and 2023, the number of patients included in clinical trials in oncology almost doubled, probably thanks to the actions of the various Cancer Control Plans (Figure 25).

Participation of children, adolescents and young adults in clinical trials in oncology

As cancer in children, adolescents and young adults (AJA) is a priority of the 2021-2030 Ten-Year Strategy, the survey closely monitored their inclusion in clinical trials. In 2023, 1,689 children were enrolled in a trial, 93% of whom were enrolled in trials with academic sponsors; 1,985 adolescents and young adults were enrolled in trials, 94% of whom were enrolled in trials with academic sponsors.

Participation of elderly patients in cancer clinical trials

Another indicator closely monitored by the Ten-Year Strategy is the inclusion of elderly patients. In 2023, a total of 4,239 patients over the age of 75 years were included in clinical trials, 90% of whom were included in trials with academic sponsors.

Inclusion of patients in clinical trials in oncology in French overseas territories

One of the objectives of the 2021-2030 Cancer Control Strategy is to open research centres in French overseas territories to increase the inclusion of patients from these territories in trials. In 2023, the university hospitals of Martinique, Guadeloupe and Réunion included 580 patients in academic clinical trials in oncology and one inclusion was reported in an industrial trial for Réunion University Hospital.

Dedicated staff (CRA/CTE) for clinical cancer research

The clinical research survey also analysed the staff involved in clinical research activities in oncology. The results show that 1,903 full-time equivalent clinical research staff (ARC/TEC) were assigned to clinical cancer research in 2023, 45% in university hospitals and 36% at cancer centres. During the 2009-2023 period, the number of staff assigned to clinical cancer research increased significantly (+ 279% between 2009 and 2023).

Table 7: Main results of the national survey on clinical cancer research activity in 2023

	Academic trials	Industrial trials	TOTAL 2023
Number of enrolments in therapeutic trials	18,821	8,385	27,206
Number of enrolments in trials dedicated to solid tumours	44,061	7,604	51,665
Number of enrolments in haematology trials	10,567	1,968	12,525
Number of children enrolled (0-18 years of age)	1,569	1	1,689
Number of adolescents and young adults (aged 15-25 years) enrolled	1,863	118	1,981
Number of elderly patients enrolled (≥ 75 years of age)	3,799	440	4,239

Figure 26
Distribution of enrolments in clinical trials by type of cancer for the 2017 to 2023 period

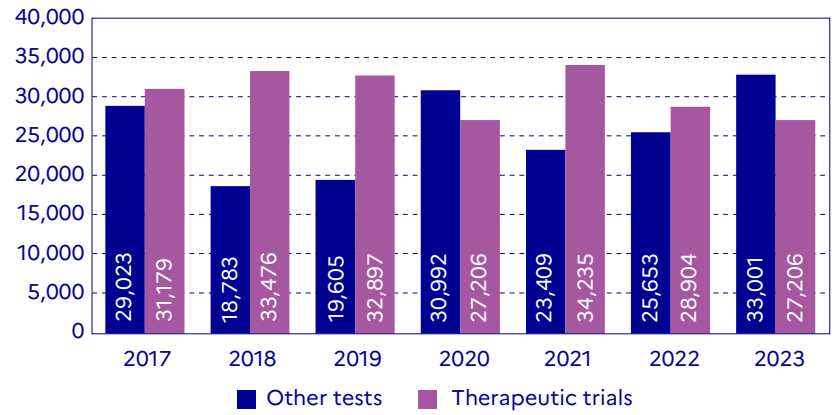
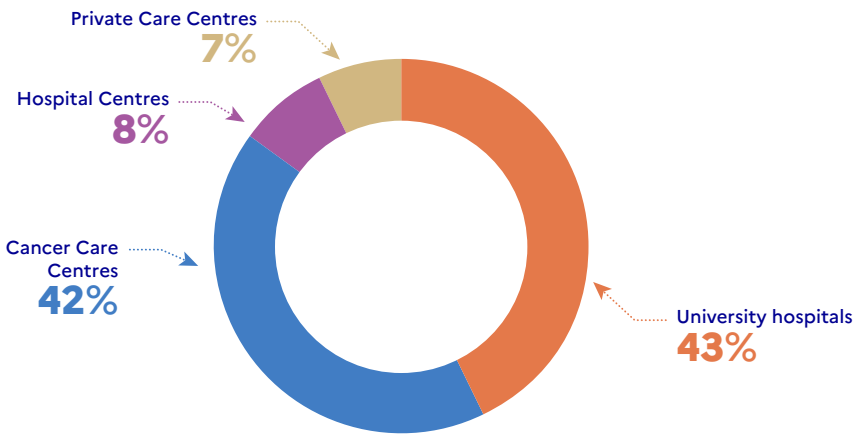


Figure 27
Distribution of enrolments in cancer clinical trials by type of institution in 2023



4.3.4. INCa designated cooperative intergroups: Monitoring of their clinical research activity

Since 2020, a declarative survey on clinical research activity in oncology has been performed, specifically designed at the request of the intergroup cooperatives designated by the Institute, based on the Institute's annual national survey (Figure 25 and Figure 29). The aim of this survey is to record the annual clinical research activity in oncology in France carried out by the co-operative intergroups.

French co-operative intergroups in oncology are independent, non-profit academic groups composed of doctors and medical research professionals who collaborate to develop and conduct clinical trials. Cooperative intergroups are designated and funded by INCa. They can act as trial sponsors and can participate in trials at the academic, institutional and/or industrial level: these three types of activity were addressed in this survey.[3]

The results below are based on activity in 2023:

- A total of 112 clinical trials in oncology were sponsored by 11 cooperative intergroups (or a group within the intergroup):
  - 28,101 inclusions (Table 8) were reported at 1,820 French healthcare establishments of all types (university hospitals, cancer centres, public and private healthcare establishments);
  - These 11 cooperative intergroups acting as sponsors were active internationally, with 191 participating centres abroad;
- All cooperating intergroups were involved in academically promoted trials, with 208 clinical trials in oncology reported and 9,244 inclusions;
- Five cooperative intergroup organisations participated in industry-sponsored trials, with 78 clinical trials in oncology and 546 reported inclusions (Table 8);
- In total, cooperative intergroups participated in 37,891 inclusions, accounting for 59% of national inclusions. The total number of inclusions for which cooperative intergroups acted as sponsors was significantly higher in 2023 compared to 2019 (28,101 inclusions in 2023 versus 7,443 in 2019).

3 Members of the cooperative intergroups participate in the design of the study methodology and/or the inclusion and follow-up of patients in the study.

Table 8: Clinical research activity performed by cooperative intergroups in 2023

		Status of cooperative intergroup		
		Sponsors	Involvement in academic trials	Involvement in industrial trials
Number of cooperative intergroups	2019	9	13	7
	2020	11	13	6
	2021	11	13	5
	2022	11	13	6
	2023	11	13	5
Number of trials	2019	86	162	39
	2020	100	198	36
	2021	152	198	33
	2022	103	191	74
	2023	112	208	78
Number of inclusions	2019	7,192	12,469	714
	2020	10,272	9,652	422
	2021	2,590	11,803	311
	2022	31,409	8,561	679
	2023	28,101	9,244	546

In 2023, strong early-phase (phases I and I/II) and phase III clinical research activity continued: 88% of inclusions were observed in phase III with the co-operative intergroups as sponsors; 28% of inclusions were observed in early-phase trials with industrial sponsors. This survey also analysed the personnel involved in clinical research activities in oncology: 110 clinical research personnel (full-time equivalent) were assigned to clinical cancer research in cooperative intergroups in 2023. These results highlight the key role and dynamism of intergroups in the French clinical cancer research landscape, particularly in academically sponsored trials, in terms of both trial design and conduct.

Figure 28
Distribution of enrolments in 2023 according to the status of the co-operative intergroup

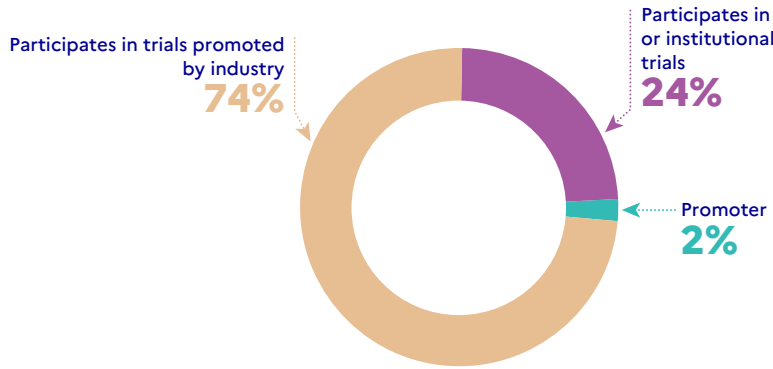
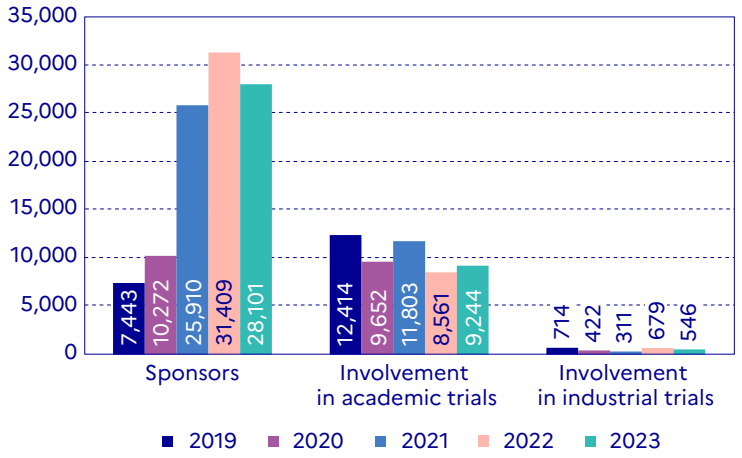


Figure 29
Enrolments according to the type of activity of cooperative intergroups since 2019



4.3.5. 2024 publications: results of clinical research projects funded by the PHRC-K programme

Results of the SHAPE clinical trial published in the New England Journal of Medicine (February 2024)
This project was funded by the PHRC-K programme in 2013 and coordinated by the ARCAGY-GINECO co-operative intergroup, designated by INCa.

SHAPE is a prospective, multicentre, randomised, international study designed to compare extended hysterectomy with a more conservative surgical approach – "simple" hysterectomy – and to assess its effects on the quality of life of patients with early cervical cancer. A total of 700 patients were enrolled between 2012 and 2019, including 140 at 35 centres across France.

The SHAPE trial demonstrated that simple hysterectomy was as safe as radical hysterectomy and significantly improved patients' quality of life by reducing postoperative sequelae, particularly those of a urinary or sexual nature.

The results of this trial were published in The New England Journal of Medicine in February 2023[4].

In June 2024, the Institute interviewed the principal investigator of this trial, **Dr. Gwenaël Ferron** (IUCT Oncopole Toulouse): https://www.cancer.fr/actualites/etude-shape-3-questions-au-dr-gwenael-ferron

Results of the REVOLUMAB trial published in the European Journal of Cancer (March 2024)
This project was funded by the PHRC-K programme in 2016.

REVOLUMAB is a phase II, multicentre clinical trial designed to evaluate the efficacy of nivolumab, an immune checkpoint inhibitor immunotherapy, in the hope of eliciting an immune response through the hypermutation of treated gliomas. A total of 42 patients with IDH-mutant high-grade gliomas were enrolled at seven centres of the POLA/RENOCLIP-LOC network[5], with 39 of these patients ultimately treated.

The REVOLUMAB study did not meet its primary endpoint of progression-free survival at six months, but this treatment kept tumours stable for several months in 44% of the patients included. Good treatment tolerance was demonstrated, with no impairment of quality of life. The latest results of the REVOLUMAB study[6] were published in the European Journal of Cancer in March 2024.

In November 2024, INCa interviewed the principal investigator of this trial, **Dr. Caroline Dehais** (AP-HP): https://www.cancer.fr/actualites/etude-revolumab-3-questions-au-dr-caroline-dehais

4.3.6. PHARE/SIGNAL clinical trials: collection of biological samples and clinical data

Data and samples from the collection
These large trials made it possible to build a data collection consisting of:
- Clinical data from patients in the PHARE and SIGNAL trials, hosted on the Institute's Cancer Data Platform (PDC) since April 2024.
- Biological samples from the SIGNAL study (approximately 80,000 samples: DNA, RNA, plasma, lymphocyte fractions and lymphoblastoid cell lines). Since 2012, these samples have been stored at the Jean Dausset Foundation – Centre for the Study of Human Polymorphism (CEPH) in Paris.

4 Marie Plante et al. Simple versus Radical Hysterectomy in Women with Low-Risk Cervical Cancer. The NEJM. February 2024.

5 The national POLA network (*Prise en charge des oligodendrogliomes de haut-grade*, or management of high-grade oligodendrogliomas) was the first network to be designated a "rare cancer network" in neuro-oncology by INCa in 2009. The RENOCLIP-LOC network, also designated by INCa, was created in 2019 from the merger of the POLA and LOC networks. https://curamus-cancer.fr/reseau-renoclip-loc/

6 Alberto Picca et al. REVOLUMAB: A phase II trial of nivolumab in recurrent IDH mutant high-grade gliomas. European Journal of Cancer. March 2024.

THE PHARE AND THE SIGNAL CLINICAL TRIALS

The Institute sponsored two national clinical trials, the PHARE trial and the SIGNAL trial in breast cancer, both of which were completed in 2019:
- The PHARE (Protocole d'Herceptin® Adjuvante Réduisant l'Exposition) randomised trial, set up in 2006, aimed to optimise the duration of adjuvant trastuzumab treatment by comparing 6 months with 12 months of treatment in all patients receiving Herceptin®.
- The SIGNAL study, launched in 2008, aimed to establish a prospective national cohort. Its objective was to identify genetic factors for resistance/sensitivity to and/or toxicity due to adjuvant treatments, and genetic determinants conferring a predisposition to breast cancer.

These two trials included approximately 12,000 patients at 150 centres in France and overseas.

Valorisation of the SIGNAL collection
In June 2024, the Institute consulted its Ethics and Deontology Committee (CDE) on the future of the biological sample collection. Following the CDE's opinion issued in November 2024 and available from: https://www.cancer.fr/l-institut-national-du-cancer/notre-organisation/instances/le-comite-de-deontologie-et-d-ethique, the Institute decided to destroy part of the SIGNAL collection and to retain only the DNA samples (approximately 19,000 tubes) and lymphoblastoid lines (approximately 600 tubes) at the CEPH.

The PHARE meta-analysis project: example of the use of clinical data from the PHARE trial
This meta-analysis **included several randomised trials of anti-HER2 treatment for HER2-positive breast cancer. The objective was to determine whether a shorter treatment duration than the current standard of 12 months with trastuzumab was not inferior in terms of clinical efficacy for these patients. This project is led by Prof. Etienne Brain (Institut Curie) and the Oxford team of the Early Breast Cancer Trialists' Collaborative Group (EBCTCG) responsible for the meta-analysis.**

This meta-analysis, using clinical data from the PHARE trial, was submitted to the PDC's scientific and ethics committee in September 2024, and reviewed by the commission in November 2024 with a final favourable opinion. Administrative procedures with the CESRESS[7] and CNIL[8] began at the end of 2024 and are continuing in 2025.

4.4. Coordination and facilitation of cancer research

4.4.1. Origins and causes of paediatric cancers

The annual follow-up meeting took place in April 2024. The coordinator and those responsible for the various subobjectives of the consortium presented the progress of the research programme and the structure of the consortium to representatives of the Paediatrics Task Force and answered their questions.

4.4.2. Accelerating research in paediatric cancerology

Since 2019, basic research into childhood cancers has received additional annual funding specifically dedicated to this topic.

This allocation of funds, aimed at accelerating research in paediatric oncohematology, reinforces the French government's commitment to making paediatric cancer research a priority. INCa is responsible for governing and coordinating actions aimed at optimising the distribution of this funding.

7 Scientific and Ethics Committee for Research, Studies and Evaluations in the Field of Health.
8 National Commission for Information Technology and Civil Liberties.

The call for applications on the origins and causes of paediatric cancers, funded in 2020, aimed to bring together, within the same consortium, researchers from different disciplines with complementary skills on the theme of the causes and origins of paediatric cancers.

This consortium was tasked with creating an ambitious four-year research programme exploring the causes of childhood cancer. Eleven teams were selected to form the consortium and develop the research programme.

The consortium developed a programme with the following specific objectives:
- To identify environmental and genetic risk factors potentially increasing the risk of cancer in children;
- To understand how changes in cell properties during the pre- and postnatal periods influence the sensitivity to genetic alterations frequently observed in childhood cancers;
- To develop new models that more accurately reproduce paediatric tumours and enable studies of the ways in which cancer cells interact with surrounding cells.

It plans the implementation and selection of research actions in consultation with the Paediatric Task Force.

A discussion meeting was held on Thursday 21 November 2024, enabling researchers funded under this additional budget to present their work to members of the Paediatric Task Force groups and to answer their questions.

The day's programme focused on three main themes:
- Structuring initiatives;
- Innovative and ground-breaking projects;
- Contributions from interdisciplinary research.

The Paediatric Task Force coordination unit consists of advocacy groups of parents of children with cancer: *GRAVIR*, *Grandir sans cancer* and the National Union of Associations of Parents of Children with Cancer or Leukaemia.

4.4.3. Access to Innovation for Children, Adolescents, and Young Adults

A working group was established under Action IV-2.7 of the Ten-Year Cancer Control Strategy: *Ensuring access to the most relevant therapies, clinical trials, and innovation for children, adolescents, and young adults*.

This group brings together public health agencies – including INCa, the French National Authority for Health (HAS), the National Agency for the Safety of Medicines and Health Products (ANSM), and the French Agency for Health Innovation (AIS) – together with clinician-researchers and representatives of patients and parents.

The group identifies strategic directions for nationwide actions aiming to optimise the implementation of early-phase clinical trials in children, adolescents, and young adults. Key objectives include enhancing dialogue between clinician-researchers and regulatory authorities to accelerate trial setup and promoting the inclusion of adolescents in adult clinical trials, drawing on the structure provided by the eight paediatric CLIP^2 centres.

This initiative is, necessarily, part of a broader European context, given the rarity of paediatric cancers. It is closely aligned with the work of the European Medicines Agency and ongoing revisions to pharmaceutical regulations.

4.4.4. Fertility Preservation and Restoration for People Affected by Cancer

As part of their core mission to coordinate the fight against cancer in France and to prevent infertility caused by the gonadotoxic effects of cancer treatments, INCa and the Biomedicine Agency (ABM) have led a joint reflection on research priorities related to this topic. Research support for fertility preservation is a clearly stated goal of the Ten-Year Cancer Control Strategy: ***Reducing long-term side effects and improving quality of life***.

The objective is to advance fertility preservation and restoration for people affected by cancer through basic and translational research across various disciplines, including epidemiology, the human and social sciences, biology, and clinical sciences.

A steering committee composed of a multidisciplinary panel of experts, patient representatives, the *Ligue contre le cancer*, and the ARC Foundation resulted in the drafting and publication of a report in April 2024: "Fertility Preservation in Cancer Patients: What Are the Research Priorities?"

Research programmes may be developed in the priority areas identified and supported through calls for proposals by INCa or ABM, to promote scientific excellence and the emergence of new knowledge of benefit to patients.

These reflections were shared with the research community, patient representatives, and funding bodies during seminars held before publication in May 2023 and thereafter, with the inclusion of European experts in December 2024.

4.4.5. Prostate cancer: launch of the PAIR programme

The PAIR Integrated Research Action Programmes were set up in 2007 jointly by the Institute, *Ligue contre le cancer* and the ARC Foundation. These programmes aim to support all aspects and issues of cancer research (fundamental biology, clinical research, epidemiology, innovative technologies, prevention, screening, diagnosis, treatment and human and social sciences) within the framework of a given disease or theme.

For 2024 (the 13th year of this programme), the Institute, *Ligue contre le cancer* and the ARC Foundation renewed their partnership to implement a new PAIR dedicated to prostate cancer screening.

A steering committee (COPIL) composed of a multidisciplinary group of experts was set up in April 2024 to lead the discussions to identify the priority areas for this programme, which are:
- Human sciences and public health;
- Epidemiology and genetics;
- Screening strategies – optimisation and research into new screening tools;
- Developments in the management of detected prostate cancer.

A national launch seminar held on 9 December 2024 provided an opportunity to present these discussions (https://seminaire-pair-prostate.fr/).

These areas will form the basis on which the Institute, *Ligue contre le cancer* and the ARC Foundation will draw when drafting and implementing a national call for projects in 2025.

4.4.6. Health promotion in schools and interventional research in population health

In 2023, two research themes were highlighted by the organisation of French-speaking scientific conferences: health promotion in schools and interventional research in population health. As a means of continuing the discussions and reflections initiated during these conferences, two scientific publications with peer-reviewed journals are being produced. A call for abstracts was published for each publication, and submissions were evaluated by a scientific committee. The articles were then revised before final selection.
These two publications will be available in open source and in print in 2025.

Special issue on "Health promotion in schools" in *Global Health Promotion*

Led by the Institute, this publication aims to highlight the range of approaches and practices for strengthening health promotion in schools. Schools provide ideal conditions for bringing together all those involved in the health of children and adolescents: educational staff, health professionals, parents, peers, associations, elected officials and decision-makers. Health promotion in schools is a priority of France's Ten-Year Cancer Control Strategy. Since the Ottawa Charter (1986), the international agreement for action on "Health for All", much work has been done to understand and model the determinants of health in schools and to develop appropriate interventions.

This research has highlighted the importance of comprehensive and complex approaches (e.g., "health-promoting schools") that promote the development of psychosocial skills and health knowledge, and the relevance of intervention models involving children and adolescents themselves, such as co-creation and peer interventions.

Identifying, understanding and transferring promising initiatives are additional steps required for the development of interventions contributing to the promotion of health-promoting practices and environments.

Special issue on "Interventional research: action and intervention with and for citizens, patients and workers" in the *Canadian Journal of Public Health*

This publication from the Institute reports on work carried out in the field of PHIR, highlighting the specificities and similarities of interventions with these populations and environments at all stages of the disease, from primary prevention to screening and support, while contributing to the dissemination of PHIR knowledge applied to cancer.

APPENDICES

1 Detailed list of programmes managed by INCa and IT Cancer

Table 9: INCa: Detailed list of programmes managed in 2024

INCa 2024 programmes	Objectives	Ten-Year Cancer Control Strategy (numbering of actions)	Contributing institutions				Funding					Projects evaluated/funded			
			Programming	Operator	Funding	Partner	INCa	GIP (INCa + DGOS + ARC + Ligue + CNAM)	Other partners	TOTAL	Year of funding	Submissions	Number of projects funded	Selection rate for funding	Projects funded by the GIP
CAD (evolution of SPA-CPA)	To support ambitious and innovative research of excellence to improve knowledge of addictive behaviours and drugs	No	INCa/IReSP	INCa/IReSP	INCa/IReSP via the CNAM and the Addiction Prevention Fund	IReSP	€4,716,984	€4,716,984	€3,258,496	€7,975,480	2024	57	23	40%	14
CAD-DOC (evolution of SPA-CPA-DOC)	To promote research by young talent on addictive behaviours and drugs	No	INCa/IReSP	IReSP	INCa/IReSP via the CNAM and the Addiction Prevention Fund	IReSP	€642,910	€642,910	€229,741	€872,651	2024	24	8	33%	5
CLIP 2	To strengthen the national network of early-phase clinical trial centres for adult and paediatric cancer patients	No	INCa	INCa	INCa/Ligue contre le cancer	INCa/Ligue contre le cancer	€10,413,676	€12,413,676		€12,413,676	2024 2025	21 6	16 3	76% 50%	16 3
DOC-SHS	To promote research among young talent in the fields of human and social sciences, public health and epidemiology applied to the fight against cancer	No	INCa	INCa	INCa	None	€660,738	€660,738		€660,738	2024	17	5	29%	5
UCOM	To promote clinical research structuring in overseas french territories by supporting the UCOM group	Yes (III-5-2)	INCa	INCa	INCa	GIRCI-SOHO	€100,000	€100,000		€,100,000	2025	1	1	NA	1
FRANCE-JAPAN	To encourage collaboration and resources mutualisation between researchers based in France and Japan for large-scale international basic research projects in cancer biology	No	INCa	INCa/AMED	INCa/AMED	AMED	€1,993,040	€1,993,040	€2,000,000	€4,000,000	2025	24	3	13%	3
LABREXCMP	To accelerate research on poor-prognosis cancers through the designation of research networks of excellence	Yes (III-1-1)	INCa	INCa	INCa	None	€5,955,228	€5,955,228		€5,955,228		5	2	40%	2
PEDIAHR	To support original, bold and conceptually innovative "high-risk/high-gain" fundamental and translational research projects in paediatric oncology	No	INCa	INCa	INCa	None	€3,742,308	€3,742,308		€3,742,308	2024	20	6	30%	6
PEDIAIMMUNO	To support innovative research on paediatric cancer immunology	No	INCa	INCa	INCa	None	€4,068,090	€4,068,090		€4,068,090	2024	12	4	33%	4
PHRC-K	To support national academic cancer clinical research	No	INCa	INCa	DGOS	DGOS		€27,071,067		€27,071,067	2024	133	27	20%	27
PLBIO	To support basic science research projects to advance our understanding of cancer biology.	No	INCa	INCa	INCa	None	€32,068,382	€32,068,382		€32,068,382	2024	226	51	22%	51
PRT-K	To support translational research and accelerate the transfer of scientific and medical knowledge into clinical practice by encouraging the development of interdisciplinary projects bringing together researchers and clinicians.	No	INCa/DGOS	INCa	INCa/DGOS	DGOS	€4,141,979	€7,137,359		€7,137,359	2024	97	11	11%	11
SHS-RISP	To promote the development of multidisciplinary cancer research in human and social sciences, public health and public health intervention.	No	INCa	INCa	INCa	None	€5,447,418	€5,447,418		€5,447,418	2024	49	14	29%	14
TABACJC	To promote the development of research on tobacco and/or alcohol by supporting young researchers who present innovative research projects in the fields of human and social sciences, public health and interventional research.	No	INCa	INCa	INCa via the CNAM and the Addiction Control Fund	None	€748,836	€748,836		€748,836	2024	7	5	71%	5
TRANSCAN	Transnational cooperation between 31 funding organisations from 20 countries to support high-impact translational research on cancer	No	TRANSCAN network	Alliance Against Cancer (Italy)	INCa via the TRANSCAN network	TRANSCAN network	€1,702,159	€1,702,159	€14,997,841	€16,700,000	2024	83	13	16%	4
TOTAL								**€ 108468195,27**							**171**

Table 10: IT Cancer detailed list of programmes managed in 2024

ITMO 2023 programmes	Objectives	Ten-Year Cancer Control Strategy (numbering of actions)	Contributing institutions				Funding		Projects evaluated/funded		
			Programming	Operator	Funding	Partner	Amount	Year of funding	Number of submissions	Number of projects funded	Funding rate
ANR JCJC	To support young researchers by granting them additional funding for their cancer research projects	NO	ANR	ANR	INSERM for IT Cancer	ANR	€1,101,187	2024	NA	3	NA
ANSE PNR EST	To support the production of scientific knowledge on public health issues related to the environment and the workplace	NO	ANSES	ANSES	INSERM for IT Cancer	ANSES	€393,647	2024	NA	3	NA
Atip-Avenir (extensions)	To attract and support young researchers in the conduct of research in the field of cancer	NO	CNRS-INSERM	CNRS-INSERM	INSERM for IT Cancer	CNRS-INSERM	€90,000	2024	NA	3	NA
Equipment	To support the acquisition of shared equipment to promote ambitious cancer research projects and strengthen interaction between research teams	NO	INSERM	INSERM	INSERM	None	€3,592,701	2024	44	19	43%
FRT-DOC	To encourage the training of medicine, pharmacy and veterinary medicine students or recent graduates in basic or translational cancer research through PhD theses funding	NO	INSERM	INSERM	INSERM	None	€1,314,943	2024	29	9	31%
MCMP	To support interdisciplinary and multidisciplinary projects on the microenvironment of poor-prognosis cancers	YES (III)	INSERM	INSERM	INSERM	None	€4,613,618	2024	24	8	33%
MIC	To attract mathematics and computer science contributions to the cancer research field	NO	INSERM	INSERM	INSERM	None	€2,707,922	2024	26	7	27%
PCSI	To support the use of concepts and tools from physics, chemistry and engineering sciences to improve our understanding of cancer pathologies and improve patient prognosis.	NO	INSERM	INSERM	INSERM	None	€7,789,728	2024	67	18	27%
TOTAL							**€21,603,746**			**70**	

2 Cancer research funding overview

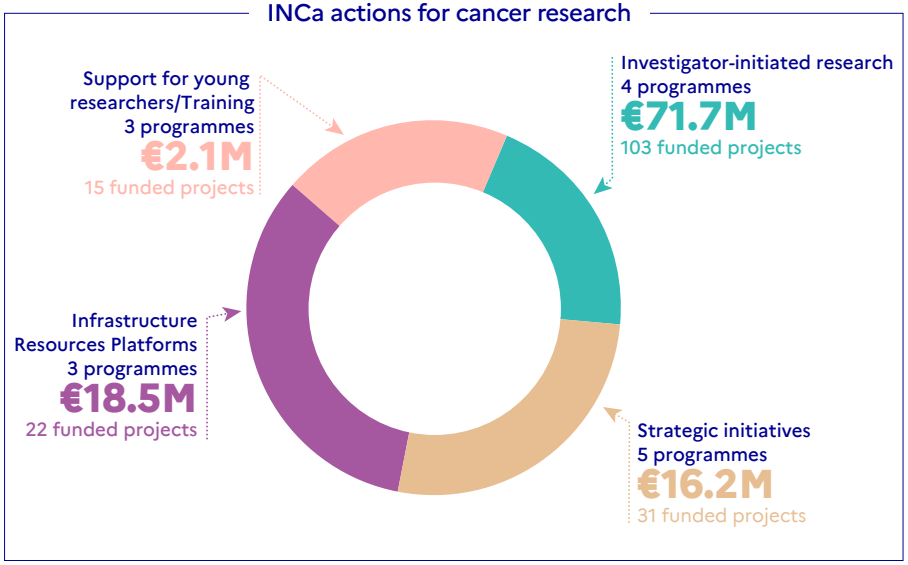
In 2024, 241 projects were selected and funded for a total budget of 130.1 million Euro through 23 programmes for cancer research (Figure 1b and Figure 2):

- INCa funded 15 programmes and 171 projects for a total of 108.5 million Euro (Figure 30)
- IT Cancer supported 8 programmes and 70 projects for a total of 21.6 million Euro (Figure 31).

Since 2007, a total of 1.95 billion Euro has been invested in measures to support and promote cancer research (1.1 Multi-year allocated funding: 2007-2024 programmes Figure 33a).

2.1. INCa: 2024 funding for cancer research

Figure 30
INCa actions for cancer research



2.1.1. Funding programmes for investigator-initiated cancer research

In 2024, INCa continued its two decades-long stewardship of four flagship programmes for investigator-initiated cancer research in the fields of biology, transfer and innovation, clinical research, and human & social sciences.

PLBIO: support for research in biology and fundamental sciences related to cancer

Since 2005, the Institute has been managing the PLBIO programme, an annual call for projects open to researchers from all fields of fundamental research and scientific disciplines that provides funding for projects involved in the fight against cancer. These projects aim to acquire new knowledge explaining observable phenomena and facts of cancer biology, to develop new tools and to open up new therapeutic perspectives.

The objectives of this call for projects are:

- To allow the implementation of projects that are original in their objectives and approach, ambitious and achievable in their goals,
- To strengthen multidisciplinary scientific research,
- To foster research on emerging and innovative topics, to improve our understanding of cancer.

In 2024, 51 projects were funded for a total of 32 million Euros, with a selection rate of 22.6%. A total of 226 letters of intent were submitted, 102 of which were selected for the submission of full proposals.

PRT-K: support for translational research in oncology

The Translational Cancer Research Programme (PRT-K) is a strategic initiative managed by the Institute and co-funded by the Directorate General for Healthcare Provision (DGOS). It addresses the specific funding needs of translational research projects, an essential field that bridges the gap between basic research and clinical applications. This programme, thus, aims to accelerate the transfer of scientific innovations into medical practice and, conversely, to integrate clinical observations into experimental research. The

PRT-K complements other biomedical research funding mechanisms. It intervenes downstream of basic research programmes (PLBIO) and upstream of clinical research programmes (PHRC-K), thus playing an essential role in the scientific and medical value chain.

The PRT-K has two main objectives: to strengthen collaboration and to accelerate knowledge transfer. It encourages the formation of consortia bringing together at least one team from a research organisation and one team from a healthcare institution, thereby establishing interdisciplinary collaborations that promote the transfer of scientific discoveries to clinical applications. By adopting a two-way dynamic, from bench-to-bedside and vice versa, this programme aims to facilitate the rapid transfer of therapeutic innovations while deepening our understanding of pathological mechanisms.

In 2024, 11 projects were funded for a total budget of 7 million Euro. This call for projects was particularly selective due to an increase in the number of applications (+ 15% compared to 2023) and a decrease in the budget. 96 expressions of interest were submitted, resulting in a selection rate to 11.5%.

PHRC-K: support for clinical research in oncology

The Hospital Clinical Cancer Research Programme (PHRC-K), funded by the Directorate General for Healthcare Provision (DGOS) of the Ministry of Health and operated by the Institute, is a crucial national call for projects for clinical cancer research. Partly included in the Ten-Year Cancer Control Strategy, this programme aims to support innovative clinical studies designed to improve patient care and to address the challenges of reducing treatment toxicity.

The programme is structured around several key strategic areas:

- **Reducing treatment toxicity:** promoting therapeutic de-escalation to minimise adverse effects while maintaining efficacy.
- **Personalisation of treatments:** development of tailor-made therapies for specific populations, particularly in paediatric and geriatric oncology.
- **Integration of innovative technologies:** incorporation of advanced radiotherapy, surgical innovations and other health technologies to optimise clinical outcomes.
- **Quality of life and supportive care:** improving treatment combinations and support strategies to enhance patient well-being and quality of life after treatment.

In 2024, 27 projects were funded for a total of 27 million Euro. The selection rate was 20%: 133 expressions of interest were submitted, of which 75 were selected for the submission of a full project proposal.

SHS-RISP: support for research in the human & social sciences and population health intervention research

Public health (PH), human & social sciences (HSS) and population health intervention research (PHIR) make significant contributions to the fight against cancer. They cover a wide range of research fields in which non-medical insights are proving increasingly relevant to research and care.

PHIR is a component of action research. While epidemiological approaches identify health problems and their causes, PHIR proposes solutions to resolve/respond to these problems. It aims to design innovative and effective interventions and support mechanisms for populations, patients and their families, and to ensure their deployment and transferability, with a view to combatting and reducing social inequalities in health. The aim is to develop innovative and multidisciplinary research excellence in the field of cancer in

INFORMATION POINT: TRANSLATIONAL RESEARCH

While basic research objective is to understand biological mechanisms and to generate new scientific knowledge, translational research bridges the gap between these discoveries and their clinical application, facilitating the transition from bench to bedside. It transforms scientific advances into medical innovations, such as the development of new therapies or improvements in the early diagnosis of cancers. Conversely, it uses clinical observations to refine our understanding of diseases and to stimulate new basic research in the laboratory (*bedside to bench*).

PHIR, PH and HSS, at all stages of the disease: from primary prevention to quaternary prevention, including screening and the management/care of cancer patients and their families, thereby contributing to the production and transferability of evidence-based data.

Project coordinators are invited to submit projects in one of two sections:
- An open section: applicants submit projects on the theme of their choice. However, indicative themes on the scientific challenges of the fight against cancer are presented in this call for proposals;
- A thematic section: this includes three priority actions from the ten-year strategy to combat cancer:
  - The fight against inequalities, for a pragmatic approach tailored to different populations;
  - Mobilising efforts to reduce cancer in children, adolescents and young adults;
  - Developing research into por-prognosis cancers.

In 2024, 14 projects were funded for a total budget of 5.4 million Euro.
Thirty-six projects were submitted in the open section and 13 projects in the thematic section, bringing the selection rate to 29%.

2.1.2. Funding programmes for thematic research: strategic initiative

The Paediatric High-Risk-High-Gain programme: for high-impact research in paediatric oncology

In 2024, a fourth edition of the High-Risk High-Gain programme for research in paediatric oncology was funded. The aim of this call for proposals was to support highly innovative research projects opening up new and original avenues and producing concrete advances in paediatric oncology. This programme funds original and bold research projects that are conceptually new and risky, considered "*High Risk-High Gain*" that could not be funded under traditional calls for projects.

Six out of the 19 applications submitted received funding, for a total budget of 3.74 million Euro.

Immunology and paediatric cancers programme: for research in paediatric immuno-oncology

A first round of funding for the "immunology and paediatric cancers" programme was launched in 2024. This call for proposals was open to researchers from all disciplines, without exception, and aimed to support **particularly innovative** projects **in paediatric immuno-oncology**. The projects submitted could be basic or translational research projects. Each project could be led by one or more teams, if collaboration was required.

The 2024 call for projects for this programme resulted in the funding of four of the 12 projects submitted for a total budget of 4.06 million Euro.

CAD: Prevention, mechanisms, identification and support of addictive behaviours and drugs

The CAD programme funds research into psychoactive substance use and addiction and is open to researchers with a PhD. This call for project is run jointly with the Institute for Public Health Research (IReSP) and is funded by the Addiction Fund. It is therefore directly linked to the priorities defined by the Fund. In addition, since 2024, a fourth component has been added targeting addictive behaviours, funded by the IReSP. The call is structured as follows:
- Part 1: Addictive behaviours, drugs and the general population (funded by INCa and IReSP);
- Part 2: Addictive behaviours, drugs and cancer (funded by INCa);
- Part 3: Addictive behaviours, drugs and harm other than cancer (funded by IReSP);
- Part 4: Addictive behaviours (funded by IReSP).

This call for projects covers a wide range of disciplines, from clinical research to public health, including information and communication technologies, economics and political science, human & social sciences, law, biology and epidemiology.

In 2024, restructuring was undertaken to attract more proposals from researchers in the social sciences and human & social sciences, in particular, by changing the title of the call to make it more inclusive, and then by defining research priorities such as:

- Social, territorial and health inequalities (including overseas territories);
- The role of the social environment and strategies and interventions for prevention and harm reduction (HR).

In 2024, the Institute managed parts 1 and 2 of the call: **57 projects were submitted (44 projects in part 1 and 13 in part 2). A total of 23 projects were funded for a total budget of 7.9 million Euro. The Institute funded 14 of these projects for a total amount of 4.7 million Euro.**

2.1.3. Funding programmes for training and for young researchers in oncology

DOCSHS: Doctoral grants: Prevention, identification and support before, during and after the disease

In 2024, for the 14th consecutive year, INCa launched a call for applications for five doctoral scholarships to promote research in the human & social sciences and public health applied to the fight against cancer.

A total of 17 applications were submitted to INCa. The 16 evaluated applications were divided equally between the different disciplines: 8 in public health and epidemiology, 8 in human & social sciences (psychology, sociology, philosophy, information sciences, management/marketing). Based on evaluations, 11 applications were shortlisted for interviews, which were held in person at INCa on 7 June 2024.

Following these interviews, **five three-year doctoral contracts were funded, three in epidemiology and two in human & social sciences.**

CAD-DOC: Doctoral grants "Addictive behaviours and drugs. Prevention, mechanisms, identification and support"

In addition to the programme open to PhD holders (see 12.1.2.3), a programme for PhD candidates in the research on psychoactive substance use and addiction field is ran by INCa and jointly managed with the Institute for Public Health Research (IReSP) and funded by the Addiction Fund. It is therefore directly linked to the priorities defined by the Fund. The call is structured as follows:

- Part 1: Addictive behaviours, drugs and the general population (funded by INCa and IReSP);
- Part 2: Addictive behaviours, drugs and cancer (INCa funding);
- Part 3: Addictive behaviours, drugs and harms other than cancer (funded by IReSP);
- Part 4: Addictive behaviours (IReSP funding).

This call for applications covers a wide range of disciplines, from clinical research to public health, information and communication technologies, economics and political science, human & social sciences, law, biology and epidemiology.

This call, intended to support PhD students with a three-year doctoral contract, is open to all students with a master's degree in human & social sciences, public health, epidemiology or biology enrolled in the first or second year of a PhD programme at a doctoral school. Since 2024, this call has also made it possible – within the limit of two grants per provided by INCa – to fund a PhD fourth year for candidates who are not currently receiving funding from INCa and IReSP.

In 2024, this call for applications was run by the IReSP. 18 applications were received for full doctoral contracts and six applications for a fourth year of PhD work were submitted. Following interviews, five applications for full doctoral contract funding and three applications for a fourth year of PhD work were funded.

INCa funded four doctoral contracts and one grant for a fourth year.

TABACJC: Young researchers working on tobacco and/or alcohol
To attract young PhD graduates to the tobacco and/or alcohol research field, the Institute launched, in 2021, an innovative programme targeting researchers who had obtained a PhD within the 10 years prior to their application. The aim of this call for applications was to support young talent wishing to propose innovative ideas – new models, approaches, methodologies and/or scientific protocols – in human & social sciences, public health and/or intervention research in the fields of tobacco and/or alcohol, the two main risk factors for preventable cancers.

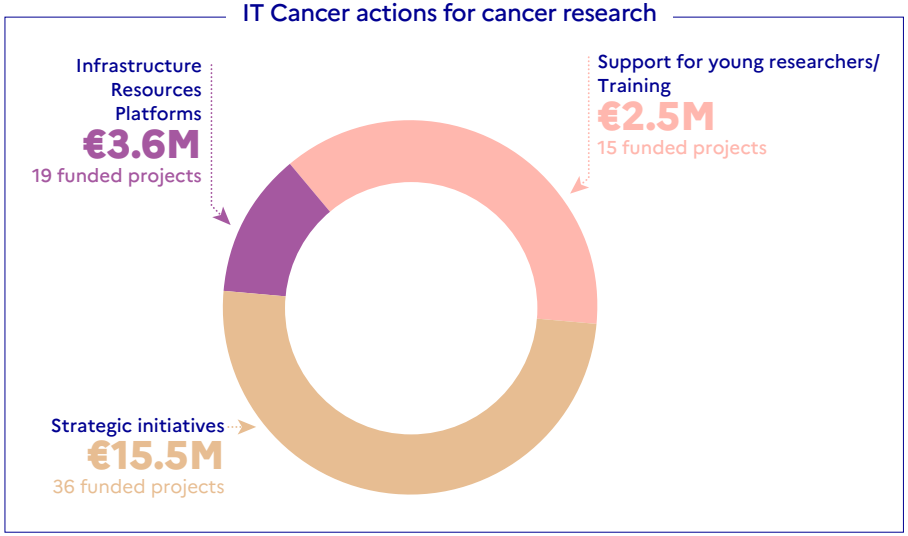
Through a collaborative system of initiatives led by young researchers, this programme also aims to develop a scientific community around the themes of tobacco and/or alcohol. This call for applications was structured into three stages:
- Pre-selection of candidates based on letters of intent;
- Project development, including participation in a collaborative seminar;
- Selection of candidates based on projects and interviews.

In 2024, seven applications were submitted and five were funded for a total budget of 748,836 Euro.

2.2. IT Cancer: 2024 funding to support cancer research

Most of the funding for *IT Cancer* was allocated to strategic initiatives (72.1% of the total budget, or €15.5 million for 36 projects). It enabled teams to acquire the cutting-edge equipment they needed to carry out their work (16.7% of the total budget, or €3.6 million for 19 projects). Finally, support was provided to young researchers, enabling them to continue their training in fundamental research or, later in their careers, to help them to establish independent research activities (11.2% of the total budget, or €2.4 million for 12 projects).

Figure 31
IT Cancer actions for cancer research



2.2.1. Thematic and strategic programmes for cancer research

MCMP: Functional exploration of the microenvironment of poor-prognosis cancers
Launched for the first time in 2022 and scheduled to take place every two years, the MCMP call for projects aims to fund interdisciplinary or multi-intradisciplinary projects enabling the functional characterisation of the microenvironment of poor-prognosis cancers for which current treatments are not very effective and which are characterised by a standardised five-year net survival of less than 33%. This programme fits into one of the key objectives of the Ten-Year Strategy by targeting poor-prognosis cancers.

Four areas of research are proposed:
- High-definition spatiotemporal characterisation of the microenvironment leading to a functional study;

- High-definition decoding of cellular networks and local signalling;
- Reprogramming of the tumour microenvironment;
- The development of *in vitro* or *ex vivo* models reproducing the spatiotemporal progression of the tumour/microenvironment pair.

In 2024, 33% of the projects evaluated were funded, eight projects in all, for a total amount of 4.6 million Euro.

MIC: Contribution of mathematics and computer science to oncology
Launched in 2019, the MIC programme supports projects aiming to remove conceptual and methodological barriers at the frontier of mathematics, computer science and oncology, to improve our understanding of tumour diseases and patient prognosis.

In 2024, 30% of the projects evaluated were funded, seven projects in all, for a total amount of 2.7 million Euro.

PCSI: Contributions of physics, chemistry and engineering sciences to oncology
Launched in 2019, the PCSI programme supports projects aiming to improve our understanding of tumour diseases and cancer prognosis based on concepts or tools from physics, chemistry or engineering sciences.

In 2024, 29% of the projects evaluated were funded, 18 projects in all, for a total amount of 7.8 million Euro.

PNR-EST: Support for the National Environmental and Occupational Health Research Programme
This multi-agency programme run by the French Agency for Food, Environmental and Occupational Health & Safety (ANSES) addresses various public health issues relating to the environment and the workplace. INSERM has been funding cancer-related projects under this programme since 2011.

In 2024, three projects were funded, for a total amount of almost €400,000.

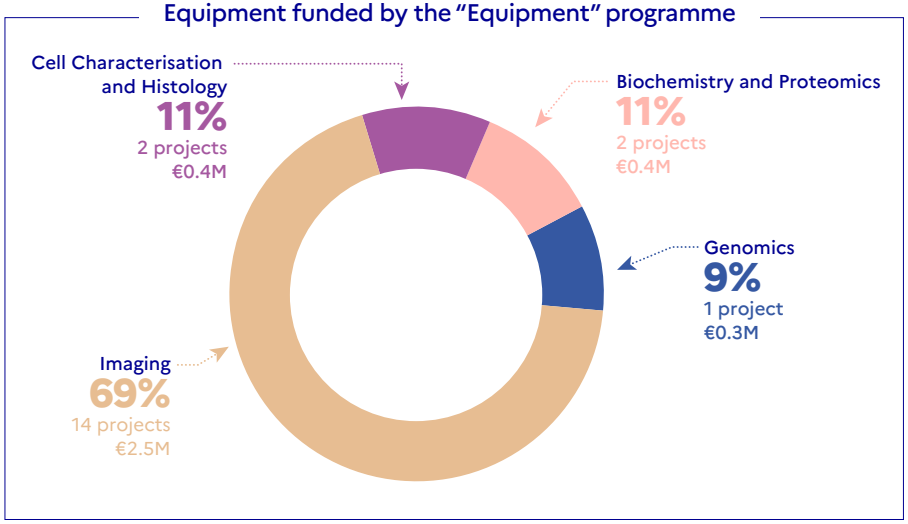
2.2.2. "*Equipment*": a programme for the acquisition of equipment for cancer research

Since 2016, the *Equipment* programme has aimed to support the acquisition of equipment to promote the development of ambitious research in the field of cancer, to encourage interactions between research teams, and to enhance the attractiveness and reputation of French teams on the international stage.

In 2024, 51% of the projects evaluated were funded, 19 projects in all, for a total amount of 3.6 million Euro.

Most of the funding was allocated to imaging equipment (69% of the Equipment programme budget, i.e., 2.5 million Euro for 14 projects). The rest of the budget was divided almost equally between equipment for biochemistry and proteomics (11% of the budget, i.e., 0.4 million Euro for two projects), cell characterisation and histology (11% of the budget, or 0.4 million Euro for two projects) and genomics (9% of the budget, or 0.3 million Euro for one project) (Figure 32).

Figure 32
Equipment funded by the "Equipment" programme



2.2.3. Programmes for training and young researchers

FRFT-Doc: Doctoral training programme in fundamental and translational research

The FRFT-Doc programme aims to support the training of students and recent graduates in medicine, pharmacy and veterinary science in translational research by funding PhD thesis on cancer.

In 2024, 46% of the projects evaluated were funded, nine projects in all, for a total of 1.3 million Euro.

Most of the funding allocated was dedicated to exploring the biology of cancer (56.8% of the FRFT-Doc programme budget, i.e., €0.7 million for five projects), identifying new markers or developing new technologies for the early detection, diagnosis or prognosis of cancer (36.0% of the budget, or €0.5 million for three projects). The rest of the budget was devoted to a single project aiming to develop new cancer treatments (7.2% of the budget, or €0.1 million).

ANR JCJC programme for young researchers

The JCJC (Young Researchers) programme of the French National Research Agency (ANR) enables young scientists to access funding to supplement their recurring funding. Since 2020, ITMO Cancer and now IT Cancer has funded JCJC projects focusing on cancer.

In 2024, three projects were funded for a total amount of 1.1 million Euro.

2.3. Multi-year allocated funding: 2007-2024 programmes

Figure 33 shows the distribution of multi-year funding allocated to research in the cancer field from 2007 to 2024, according to four types of programmes:

- Projects initiated by researchers from the independent research programme in the following main research areas: biology, translational research, clinical research, and human & social sciences, epidemiology and public health. In 2024, 55% of the budget was allocated to these independent research projects. It is important to note that a sustained effort was made to maintain this rate at 50% over the 2007-2024 period, excluding years of very significant funding for structuring programmes, such as 2022, which saw the simultaneous designation of SIRICs and Cancéropôles. **Indeed, over the 2007-2024 period, 48% of the funds allocated to cancer research – 938 million Euro – was dedicated to ensuring that independent investigator-initiated research was performed on the basis of scientific excellence.**
- Strategic research initiatives and thematic programmes funded by INCa and IT Cancer include programmes dedicated to the priorities of cancer control plans and of the 2021-2030 Ten-Year Strategy in particular. These initiatives also include the Institute's international collaborations, notably with Cancer Research UK to support Cancer Grand Challenges projects. **Between 2007 and 2024, these strategic initiatives accounted for 26% of cancer research funding, or 512 million Euro.**
- **Support for research platforms, resources and infrastructure accounted for nearly 22% of total funding over the 2007-2024 period, or approximately 427 million Euro**, to promote and strengthen the organisational framework and encourage coordinated and integrated research. This made it possible to maintain INCa's flagship structuring programmes, SIRICs and CLIPs[2]. More recently, part of the budget has been allocated to integrated research networks of excellence on paediatric cancers – PEDIACRIEX programme – and on poor-prognosis cancers – LABREXCMP programme.
- Research training and support for young teams of excellence, including the doctoral programme in human and social sciences and the ATIP-Avenir and TABACJC support programmes for young researchers. This accounted for 68 million Euro.

Figure 33a

1.95 billion euros multi-year funding was allocated to cancer research from 2007 to 2024

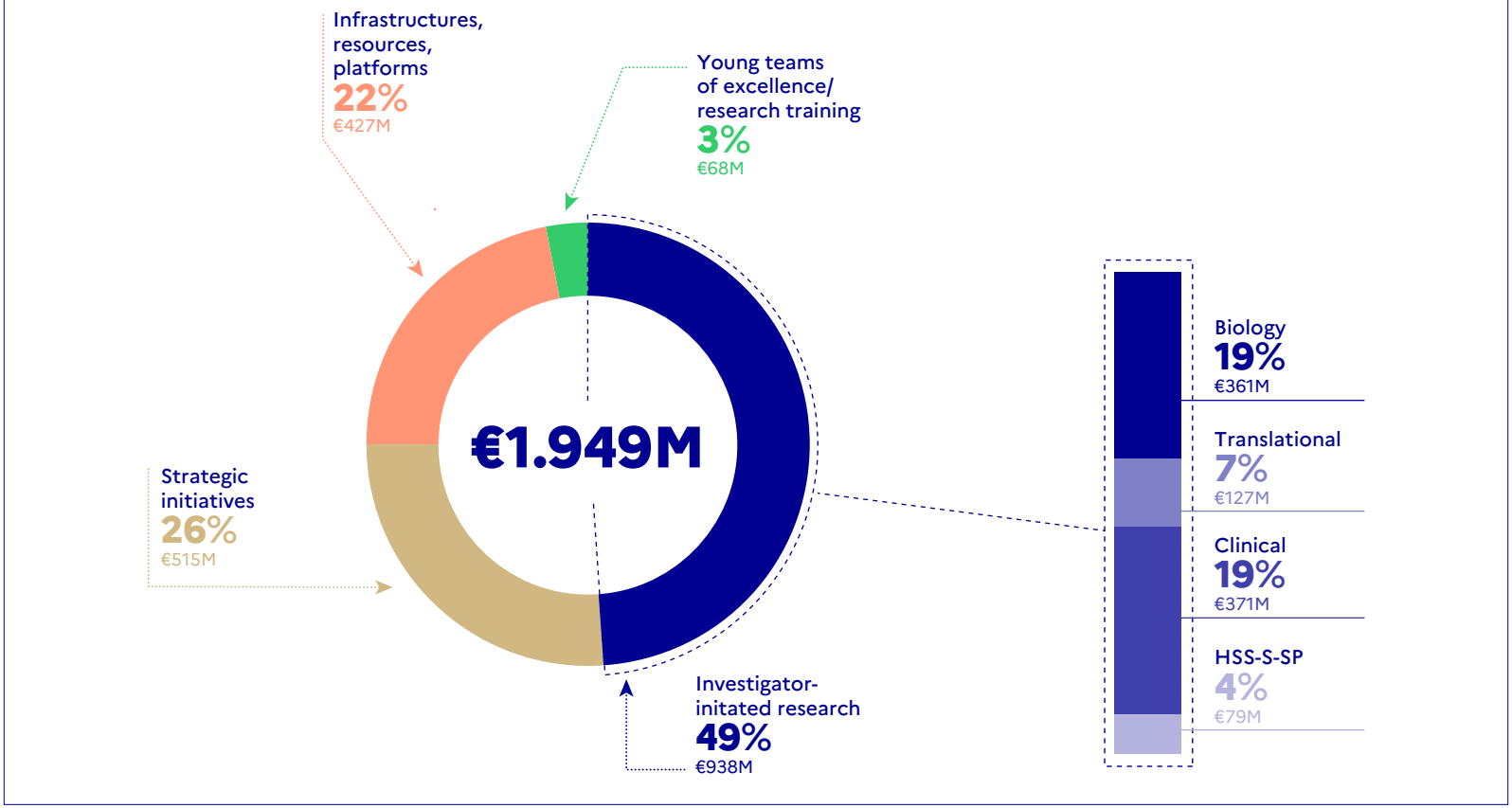
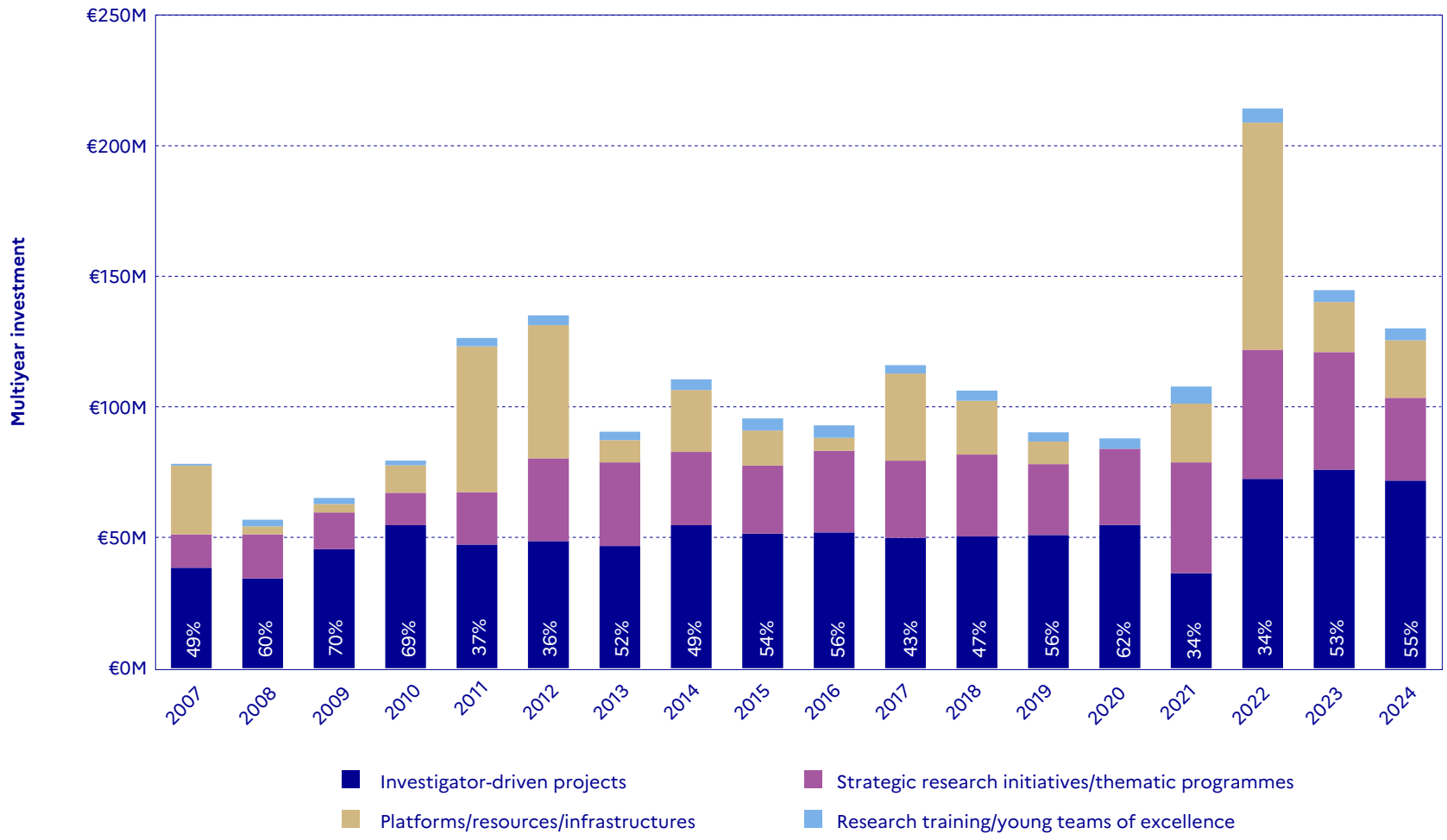


Figure 33b

1.95 billion euros multi-year funding was allocated to cancer research from 2007 to 2024



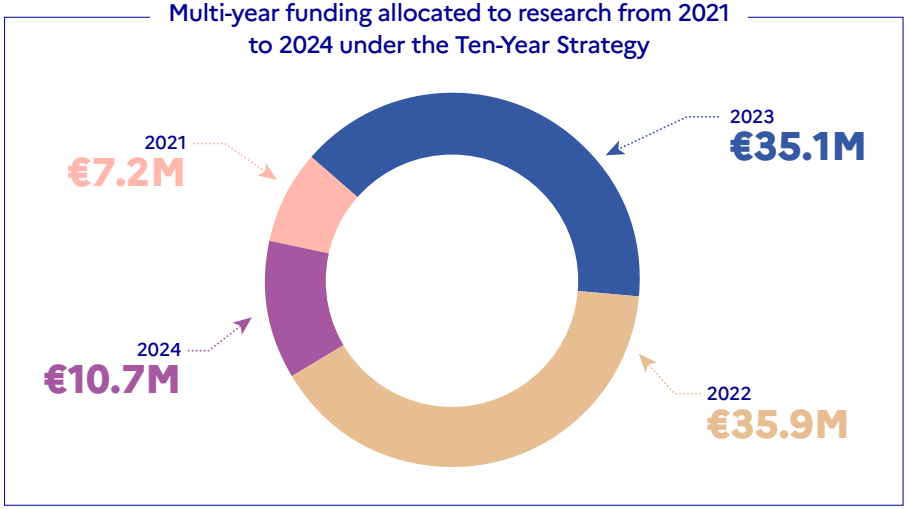
2.4. Ten-Year Cancer Control Strategy: 2021-2024 multi-year allocated funding

In 2024, three actions organised as part of the Ten-Year Strategy to Combat Cancer made it possible to fund 24 projects relating to Area 3: combating poor-prognosis cancers. A total of 10.7 million Euro was allocated (Figure 34) by the following programmes:

- UCOM for the opening of clinical research centres in overseas territories,
- LABREXCMP for the designation of integrated research networks of excellence for poor-prognosis cancers, and
- MCMP, run by IT Cancer, for the study of the microenvironment of poor-prognosis cancers.

The LABREXCMP programme aims to structure research on poor-prognosis cancers whereas the objective of UCOM is to reduce disparities in access to cancer care in French overseas territories (DROM-COM)[9] and to guaranteeing French citizens in these territories access to innovation and research.

Figure 34
Multi-year funding allocated to research from 2021 to 2024 under the Ten-Year Strategy



9 Overseas Departments and Regions and Overseas Municipalities.

Since the launch of the 2021-2030 Ten-Year Cancer Control Strategy, 90 million Euro has been allocated to strategic and structural research initiatives to meet the priorities of this strategy:

- 7.2 million Euro in 2021;
- 35.9 million Euro in 2022;
- 35.1 million Euro in 2023;
- 10.7 million Euro in 2024.

2.5. Scientific areas: 2007-2024 multi-year allocated funding

Figure 35 illustrates the distribution of funds from 2007 to 2024 according to the scientific field targeted by the funded research projects (based on the CSO classification).

Figure 35
Distribution of multi-year funding by scientific field for the 2007-2024 period

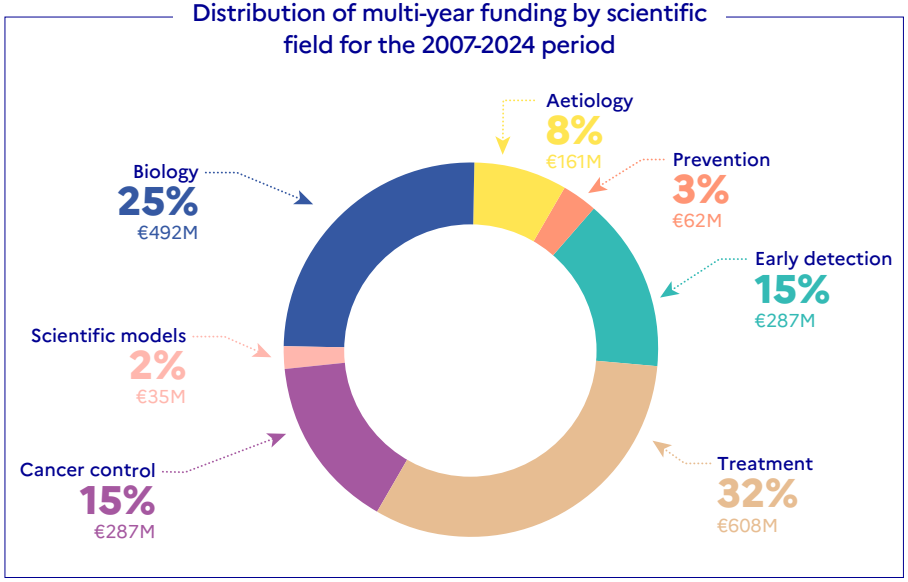


Figure 36
2024 multi-year funding breakdown by cancer type

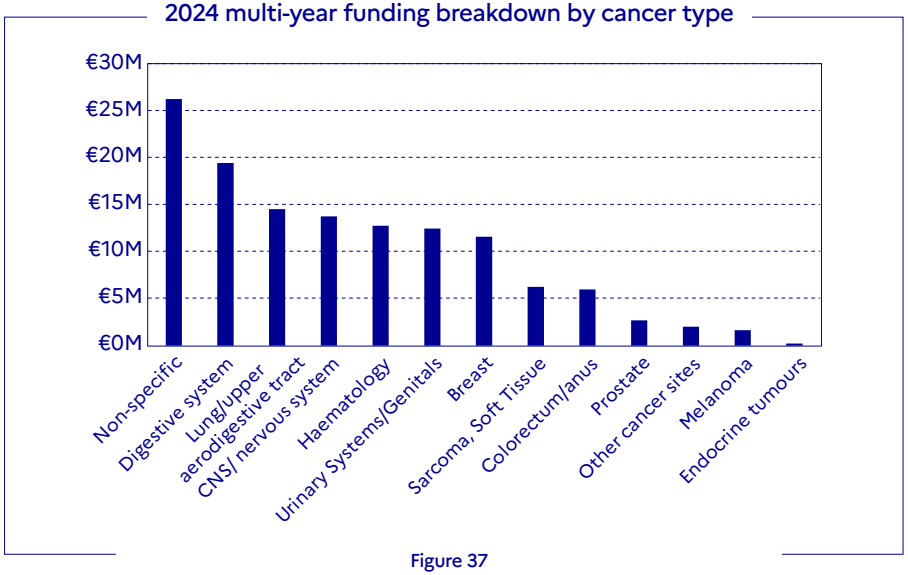
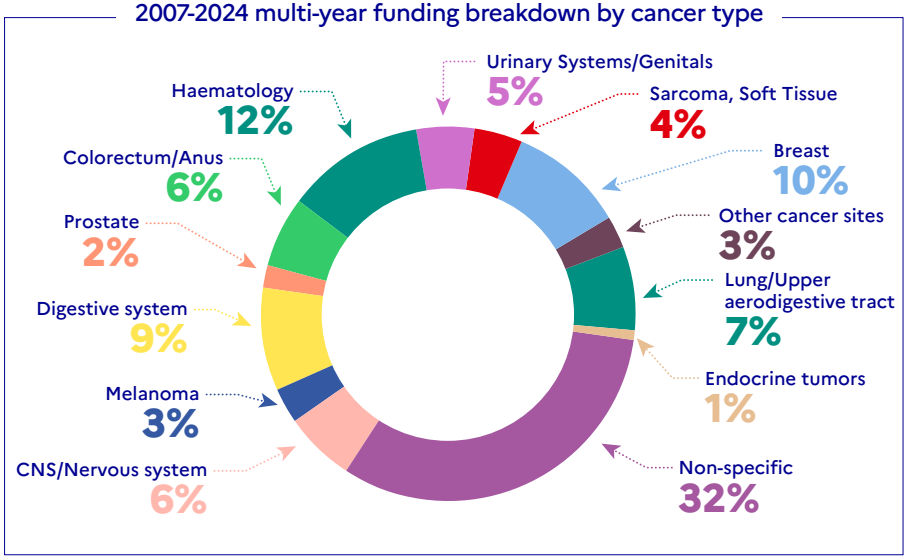


Figure 37
2007-2024 multi-year funding breakdown by cancer type



Contributions to research on treatment strategies and the understanding of cancer biology accounted for more than 50% of total cumulative funding for the period 2007-2024.

2.6. Cancer type: 2007-2024 multi-year funding

Figure 36 and Figure 37 display the breakdown of the multi-year funding allocated to research by cancer type, in 2024 (Figure 36) and over the 2007-2024 period (Figure 37).

3 CSO and cancer type/location breakdown of supported projects

Established in 2000, the International Cancer Research Partnership (ICRP) is a unique alliance of cancer organisations, working together to enhance global collaboration and the strategic coordination of cancer research. It includes 150 organisations worldwide, from Australia, Canada, France, Japan, the Netherlands, the United Kingdom, and the United States. INCa joined this partnership in 2009.

This consortium aims to improve access to information about the cancer research being conducted, to explore opportunities for cooperation between funding agencies, and to enable our members to maximise the impact of their independent efforts.

ICRP organisations share funding information in a common format (known as the Common Scientific Outline or CSO) to facilitate the pooling of data and data evaluation across organisations.

The Common Scientific Outline, or CSO, is a classification system organised around seven broad areas of scientific interest in cancer research. The development of the CSO laid the framework for improving coordination between research organisations, making it possible to compare and contrast the research portfolios of public, non-profit, and governmental research agencies. The current version (v2) of the CSO was adopted by the International Cancer Research Partnership in April 2015 and has been used by the Institute since 2022. This classification is subdivided in six categories:

- Biology
- Aetiology (causes of cancer)
- Prevention
- Early Detection, Diagnosis, and Prognosis
- Treatment
- Cancer Control, Survivorship, and Outcomes Research
- (**item removed from the update CSO v2:** Scientific Model Systems)

As a member of the ICRP Consortium, INCa and its partners use this classification. The types of research projects funded by INCa, the French Ministry of Health (DGOS) and INSERM for IT Cancer presented in this report are based on this CSO classification.

The different CSO categories include:

- CSO 1 Biology
  1.1 Normal functioning
  1.2 Cancer initiation: alterations to chromosomes
  1.3 Cancer initiation: oncogenes and tumour suppressor genes
  1.4 Cancer progression and metastasis
  1.5 Resources and infrastructure
- CSO 2 Aetiology
  2.1 Exogenous factors in the origin and cause of cancer
  2.2 Endogenous factors in the origin and cause of cancer
  2.3 Interactions of genes and/or genetic polymorphisms with exogenous and/or endogenous factors
  2.4 Resources and infrastructure related to aetiology
- CSO 3 Prevention
  3.1 Interventions to prevent cancer: personal behaviours that affect cancer risk
  3.2 Nutritional science in cancer prevention
  3.3 Chemoprevention
  3.4 Vaccines
  3.5 Complementary and alternative prevention approaches
  3.6 Resources and infrastructure related to prevention
- CSO 4 Early Detection, Diagnosis, and Prognosis
  4.1 Technology development and/or marker discovery
  4.2 Technology and/or marker evaluation with respect to fundamental parameters of method
  4.3 Technology and/or marker testing in a clinical setting
  4.4 Resources and infrastructure related to detection, diagnosis, or prognosis

- CSO 5 Treatment
  5.1 Localised therapies – Discovery and development
  5.2 Localised therapies – Clinical applications
  5.3 Systemic therapies – Discovery and development
  5.4 Systemic therapies – Clinical applications
  5.5 Combinations of localised and systemic therapies
  5.6 Complementary and alternative treatment approaches
  5.7 Resources and infrastructure related to treatment
- CSO 6 Cancer Control, Survivorship, and Outcomes Research
  6.1 Patient care and survivorship issues
  6.2 Surveillance
  6.3 Behaviour
  6.4 Cost analyses and health care delivery
  6.5 Education and communication
  6.6 End-of-life care
  6.7 Ethics and confidentiality in cancer research
  (**item removed from the update CSO v2:** 6.8 Complementary and alternative approaches for supportive care of patients and survivors)
  6.9 Resources and Infrastructure related to cancer control, survivorship, and outcomes research

METHOD: CSO AND CANCER-TYPE BREAKDOWN

The distribution by CSO and cancer type found in these appendices was obtained as follows, with a method different from that in 01:
- Scientific domains covered by research projects supported in 2024.
- As any one project can cover several CSO classifications and cancer types, a fraction of the project is allocated to each category (Example: for 1 project belonging to 3 CSO categories: 0.3 is allocated to CSO1, 0.3 is allocated to CSO2 and 0.3 is allocated to CSO3).

Table 11: INCa: CSO classification of projects funded under programmes managed in 2024

PROGRAMMES	Biology	Aetiology	Prevention	Early Detection, Diagnosis, and Prognosis	Treatment	Cancer control, survivorship and outcomes research	Nomber of projects
	Percentage of total projects						
CAD-DOC	13%	13%		13%	63%		27
CLIP²	40%	14%		30%	16%		3
DOC-SHS	14%			55%	32%		2
FRANCE JAPAN					100%		11
LABREXCMP		10%				90%	5
PEDIAHR	38%				63%		51
PEDIAIMMUNO			4%	7%	76%	13%	6
PHRC-K		50%			20%	30%	4
PLBIO	25%	42%			33%		14
PRT-K	49%				51%		5
SHSRISP	57%			5%	38%		14
SPA		22%	25%	4%	7%	42%	5
TABAC-JC		14%	7%	7%	14%	57%	5
TRANSCAN		10%	90%				19

Table 12: Detailed INCa: CSO classification of projects funded under programmes managed in 2024

	Biology					Aetiology				Prevention				Early Detection, Diagnosis, and Prognosis			Treatment							Cancer control, survivorship and outcomes research						
PROGRAMMES	1.1 Normal Functioning	1.2 Cancer Initiation: Alterations in Chromosomes	1.3 Cancer Initiation: Oncogenes and Tumor Suppressor Genes	1.4 Cancer Progression and Metastasis	1.5 Resources and Infrastructure	2.1 Exogenous Factors in the Origin and Cause of Cancer	2.2 Endogenous Factors in the Origin and Cause of Cancer	2.3 Interactions of Factors	2.4 Resources and Infrastructure Related to Aetiology	3.1 Interventions to Prevent Cancer	3.2 Dietary Interventions	3.3 Chemoprevention and other medical interventions	3.5 Complementary and Alternative Prevention Approaches	4.1 Technology Development and/or Marker Discovery	4.3 Technology and/or Marker Testing in Clinical Setting	4.4 Resources and Infrastructure	5.1 Localized Therapies – Discovery and Development	5.2 Localized Therapies – Clinical Applications	5.3 Systemic Therapies – Discovery and Development	5.4 Systemic Therapies – Clinical Applications	5.5 Combinations of Localized and Systemic Therapies	5.6 Complementary and Alternative Treatment Approaches	5.7 Resources and Infrastructure	6.1 Patient Care and Survivorship Issues	6.2 Surveillance	6.3 Population-based Behavioral Factors	6.4 Health Services, Economic and Health Policy Analyses	6.5 Education and Communication Research	6.6 End-of-Life Care	6.9 Resources and Infrastructure
CAD-DOC						10%	40%															20%				30%					
CLIP[2]																							100%							
DOC-SHS						10%																		60%	20%		10%			
FRANCE JAPAN	8%		7%	34%													17%		17%		17%									
LABREXCMP					13%				13%							13%			25%				38%							
PEDIAHR		17%		8%				17%	25%								33%													
PEDIAIMMUNO				38%													38%		25%											
PHRC-K												4%		2%	6%			19%	2%	48%	7%			7%			6%			
PLBIO	1%	20%	7%	29%										4%		1%	2%		34%		2%									
PRT-K			5%	9%										36%	9%	9%			27%				5%							
SHSRISP						14%		7%		7%	18%			4%						4%			4%	22%	4%	2%	2%	2%	7%	4%
SPA						7%		7%		4%			4%	7%							7%			7%	7%	30%	6%			7%
TABAC-JC						10%				90%																				
TRANSCAN		28%		6%	6%	14%								30%					16%											

Table 13: Detailed IT Cancer: CSO classification of projects funded under programmes managed in 2024

	Biology				Aetiologie		Early Detection, Diagnostic and Prognosis		Treatment		
PROGRAMMES	1.2 Cancer Initiation: Alterations in Chromosomes	1.3 Cancer Initiation: Oncogenes and Tumor Suppressor Genes	1.4 Cancer Progression and Metastasis	1.5 Resources and Infrastructure	2.1 Exogenous Factors in the Origin and Cause of Cancer	2.4 Resources and Infrastructure Related to Aetiology	4.1 Technology Development and/or Marker Discovery	4.4 Resources and Infrastructure	5.1 Localized Therapies – Discovery and Development	5.3 Systemic Therapies – Discovery and Development	5.7 Resources and Infrastructure
ANR JCJC	33%		50%							17%	
Equipment		3%	50%				16%		11%	13%	8%
FRFT-Doc	22%		33%				28%		17%		
MCMP			88%							13%	
MIC				29%		14%		43%			14%
PCSI		6%	11%				25%		28%	25%	6%
PNR-EST					67%	33%					

Table 14: INCa: Cancer types targeted by projects funded under programmes managed in 2024

	Hematology	Digestive system	Colorectal cancer/anus	Melanoma	Lung/upper aerodigestive tract	Breast cancer	Prostate cancer	Urinary apparatus/genitals	CNS/Nervous system	Sarcoma and conjonctifs tissues	Endocrine tumors	Other location	Non specific
PHRC-K	9%	7%	7%		15%	11%	4%	19%	4%	7%		2%	15%
FRANCE JAPAN	33%				33%	33%							
LABREXCMP		50%			50%								
PRT-K	9%	14%		9%	9%			23%	9%	18%			9%
CAD-DOC													100%
PLBIO	20%	22%	7%	2%	6%	11%	4%	7%	12%	4%		2%	5%
PEDIAHR									83%	17%			
PEDIAIMMUNO	25%	25%							13%	25%			13%
SHSRISP		11%	12%		4%	25%		10%		7%		1%	31%
DOC-SHS		20%				40%		40%					
SPA					21%								79%
TABAC-JC													100%
TRANSCAN	40%				60%								
CLIPP	8%	7%	3%	1%	6%	5%	1%	12%	3%	3%	2%	8%	42%

Table 15: IT Cancer: Cancer types targeted by projects funded under programmes managed in 2024

	Hematology	Digestive system	Colorectal cancer/anus	Melanoma	Lung/upper aerodigestive tract	Breast cancer	Prostate cancer	Urinary apparatus/genitals	CNS/Nervous system	Sarcoma and conjonctifs tissues	Endocrine tumors	Other location	Non specific
Anses	33%	17%						17%	17%				17%
Equipment						5%			5%				89%
FRT-Doc	44%	11%	22%			11%							11%
MCMP	13%	63%			13%				13%				
MIC	14%	5%			5%	26%	7%						43%
PCSI		17%	6%		6%	6%			17%			6%	44%

4 Publications resulting from the work of the cancer data platform from 2017 to 2024

1. Hilmi M, Khati I, Turpin A, Andremont A, Burdet C, Grall N, Vidal J, Bousquet PJ, Rousseau B, Le Bihan-Benjamin C. Association between antibiotic use and recurrence in patients with resected non-metastatic colorectal cancer: EVADER-1, a nationwide pharmaco-epidemiological study. *Dig Liver Dis.* 2024 Jul 3:S1590-8658(24)00315-1. doi:10.1016/j.dld.2024.07.030. PMID: 39232868.
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ABBREVIATIONS

AcSé: Programme for Secure Access to Innovative Targeted Therapies

ADEME: French Agency for Ecological Transition

AMED: Japanese Agency for Medical Research and Development

ANR: French National Research Agency

ANR-JCJC: "Young Researchers" program of the French National Research Agency (Agence nationale de la recherche)

ANRS MIE: French National Agency for Research on AIDS, Viral Hepatitis and Emerging Infectious Diseases

Anses: French National Agency for Food, Environmental and Occupational Health Safety

Anses-PNR-EST: National Research Program on Environment, Health and Work, coordinated by ANSES (French Agency for Food, Environmental and Occupational Health & Safety).

ATIP-Avenir: Incentive Thematic Action Program of CNRS and Inserm, designed to support young researchers in establishing independent research teams.

Aviesan: French National Alliance for Life Sciences and Health

BCB: Clinical and biological databases

CAD: Addictive Behaviours and Drugs Programme (CAD): Prevention, Mechanisms, Identification and Support

CAD-DOC: Doctoral grants for Addictive Behaviours and Drugs (CAD): Prevention, Mechanisms, Identification and Support

CAR-T: Chimeric antigen receptor T (chimeric antigen receptor T lymphocytes)

CGC: Cancer Grand Challenges

CHU: University Hospital

CH: General Hospital

CLCC: French Cancer Centre *(centre de lutte contre les cancers)*

CLIP²: INCa-Designated early-phase clinical trial centres

CMR: Carcinogenic, mutagenic and reprotoxic

CNAM: French National Health Insurance Fund

CNIL: French Data Protection Authority (Commission nationale de l'informatique et des libertés)

CNRS: French National Centre for Scientific Research

CPE: Cancer Prevention Europe (European consortium for cancer prevention)

CSO: Common Scientific Outline of the International Cancer Research Partnership ICRP (Common Scientific Classification of the International Alliance of Cancer Research Funding Organisations, ICRP)

DGOS: Directorate General for Healthcare Provision of the French Ministry of Health and Prevention

DGRI: Directorate General for Research and innovation of the French Ministry of Higher Education, Research and Innovation

DOC-SHS: Doctoral grants – "Cancer research in human & and social sciences, epidemiology and public health"

DROM: programme to support clinical cancer research in French overseas territories (DROM)

FRFT-Doc: Doctoral Training Program in Basic and Translational Research.

Hcéres: High Council for the Evaluation of Research and Higher Education in France

HDW: Health data warehouse

HSS: Human & social sciences

IARC: International Agency for Research on Cancer

IMI: Innovative Medicines Initiative

INCa: French National Cancer Institute

INSERM: French National Institute of Health and Medical Research

IReSP: French Institute for Public Health Research

IT Cancer: INSERM's thematic institute for cancer

ITMO (part of Aviesan): Multi-Organism Thematic Institute

LABREXCMP: Programme for the designation of research of excellence networks on poor-prognosis cancers

MCMP: Programme for the study Microenvironment programme for poor-prognosis cancers

MI-AMGEN: Innovative molecules-AMGEN

MIC: Programme for the contribution of mathematics and computer science to oncology

NGS: Next-generation sequencing

ABBREVIATIONS

OSIRIS: Inter-SIRIC group on the sharing and integration of clinical and biological data in oncology

PAIR: Integrated research action programme

PAIROBC: Integrated research action programme (PAIR) – obesity and cancer

PCSI: Programme for the Contribution of Physics, Chemistry and Engineering Sciences to Oncology

PDC: INCa cancer data platform (Plateforme de données en cancérologie de l'INCa)

PEDIAHR: High risk – high gain programme for research in paediatric oncology

PEDIAIMMUNO: Immunology and Paediatric Cancer Programme

PEDIAMOB: Programme to support paediatric cancer research: doctoral and postdoctoral grants and international mobility grants

PHIR: Interventional research in population health

PHRC-K: Hospital clinical cancer research programme DGOS

PLBIO: Programme for independent research projects in cancer biology

PRT-K: INCa-DGOS Translational Cancer Research Programme

SHS-RISP: Research programme in human & social sciences – Interventional research in public health

SIRIC: Integrated cancer research centre

SNDS: French National Health Data System (Système national de données en santé).

SP: Public health

TABAC-JC: Research programme for young researchers on tobacco and/or alcohol

VADS: Upper aerodigestive tract cancer

WGPC: Working Group of Patients and Caregivers

WP: Work package)

FIGURE AND TABLE LIST

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