SIRIC LILLE – Nord de France

Eric LARTIGAU
on behalf of the 5 working programs

23/05/ 2011
Plan cancer 2 : 2009-2013

Cancer & social inequalities : from diagnosis to intervention

Research (5 measures, 26 actions)
From the bench to the patients

Observation (4 measures, 12 actions)
Description of cancer incidence in France

Prevention/screening (8 measures, 37 actions)
Early diagnosis

Care (7 measures, 27 actions)
Individualized care

Living after (6 measures, 16 actions)
Quality of life, limitation of exclusion

5 axes, 30 measures, 118 actions
INCa tender 2010: Site de Recherche Intégrée sur le Cancer

- Framework of Plan cancer 2
- Integrating Multidisciplinarity: human sciences, biology, clinics, research…
- Pre existing collaborations on a geographical site
- Emerging new programs
Development of a global model (from prevention to reinsertion) in preventable cancer and recurrences (head and neck, oesophagus and liver)

- Preventable cancers
  - Program 1. To understand and avoid preventable cancers
  - Program 2. To optimize the access to initial treatment and clinical research

- Preventable recurrences
  - Program 3. To model the recurrence
  - Program 4. To analyse the biological factors of recurrence
  - Program 5. To avoid recurrence by optimizing local and systemic treatments

human sciences, data base, clinical research, reinsertion, tumour dormancy, technological platforms...
Our vision:

At 5 years: data base and models (HS, fundamental and clinical research)

At 10 years: reference centre for epidemiology, treatment and follow up

SIRIC Lille Nord de France: a shared common identity labelled by INCa
SIRIC : Why Lille ?

**Le parc Eurasanté**

- Étendu sur 350 hectares
- Sur les communes de Lille et Lens
- Regroupe des établissements qui s'illustrent dans trois grands secteurs : secteur hospitalo-universitaire, entreprises et formation.
- Locomotive de la filière santé dans la région Nord-Pas-de-Calais, il continue de se développer avec une extension programmée vers le sud.

**Unique site**

**History**

**Location**

- City : 1.5 M
- Region : 4 M inhabitants
Existing research organisation:
18 labelled labs - 27 teams
> 300 researchers (U, HU, H, post-docs & docs)

- **Clinical**
  - CHRU & COL (Head & Neck, GI, GU, dermatology, hematology....)

- **Biology**
  - Inserm U 837 – JPARC: 3 teams
  - Inserm U 908
  - Inserm U 1003
  - CNRS UMR 8161 - Institut de Biologie de Lille: 7 teams
  - CNRS UMR 8576: 3 teams
  - EA 4450 (LSMBFA)
  - EA 4479 (cell division )
  - EA 4481 (Therapeutic chemistry)
  - EA 4483 (environment & health)
  - LOMH (COL)
  - Tumor Pharmacology (COL)

- **Epidemiology**
  - EA 2694 (epidemiology)

- **Human Sciences**
  - CNRS USR 3185 (MESHS)
  - CNRS UMR 8026 (CERAPS)
  - EA 1059 (URECA)
  - EA 4073 (GERiiCO)
  - EA 4487 (CRDPD)

- **Imaging & Treatment**
  - Inserm U 703
  - CNRS UMR 8520: IEMN (1 team)
  - CNRS FRE 3303 – LAGIS (1 team)
  - Academic radiotherapy Department Centre Oscar Lambret

- **Platforms**
  - Genomic: LIGAN (label IBiSA et EQUIPEX)
  - Cellular imaging: Biolmaging Center– ImaginEx (label IBiSA et EQUIPEX)
  - Proteomic (label IBiSA)
  - Tumor bank (INCa/DHOS)
  - Molecular genetics (INCA/DGOS)
  - Clinical research: DRCI de Lille, URC du COL, CIC Inserm
  - Biology pathology (CHRU de Lille)
Unique epidemiology/incidence
Mortality in France
Région Nord - Pas de Calais:
+ 50 to 80 %

Disparités départementales des taux de décès standardisés par âges
Tumeurs

Disparités départementales des taux de décès standardisés par âges
Tumeur maligne de la lèvre, de la cavité buccale et du pharynx

All tumours
Head & neck

Taux France métropolitaine : 247,4
Variation des taux départementaux par rapport au taux national
Source : CépiDC - INSERM

Taux France métropolitaine : 13,0
Variation des taux départementaux par rapport au taux national
Source : CépiDC - INSERM
Scientific Productivity
Evaluation Cancèropôle
AERES 2011 Positive ++++
INCa financing
2005 - 2010

Total: 11 309 766 €

48 projects
Program 1

To understand and avoid preventable cancers

Jérôme Foncel (Human and Social Sciences) & Yvan de Launoit (Fundamental Research)

• **Tools**
  – Registry of Cancers- Lille and Network of French Registries
  – Sample of cancer-free individuals
  – Experimental studies in Human and Social Sciences

• **Methods**
  – Database architecture and monitoring
  – Econometric methods for identification of relevant factors explaining over-incidence (and -mortality in relation with other programs)

• **Targets**
  – ETN, esophageal and primitive liver cancer patients
  – All actors involved in cancer care (GP++, specialists, epidemiologists, economists, statisticians,…)
  – Public decision-makers
Program 1

• **Objectives**
  – Transversal: comprehensive database aiming to address several issues related to cancers in Lille-North of France
  – Specific: defining primary preventive actions based on statistical results and cost-benefit analysis

• **5-year efficiency indicators**
  – Number of individuals included in the database
  – Evolution of incidence
  – *A posteriori* assessment of preventive actions
Program 2

Optimizing early access to cancer care and clinical research

Christophe Mariette (Clinical Research) & Véronique Christophe (Human and social sciences)

**Tools:**
- Internationally renowned clinical and human sciences teams
- Considerable volume of patients
- Data base from program I and modelisation
- Experimental studies on socio-cultural and environmental factors

**Methods:**
- Data collection from program I
- Identification of socio-economic, cognitive, emotional, behavioral, familial, informational, economic, geographic factors influencing early access to cancer care and clinical research
- Regional corrective measures through targeted interventions based on causative variables identified ++

**Targets**
- ETN, esophageal and primitive liver cancer patients
- All actors involved in cancer care (GP++, specialists …)
Program 2

• **Objectives**
  – To reduce diagnosis delay
  – To improve survival
  – To increase inclusions in clinical trials

• **5-year efficiency indicators** : Comparative evaluation before and after corrective measures
  – Mean delay between first symptom and diagnosis
  – Mean delay between first symptom and treatment
  – 3-year survival
  – Number of institutional clinical trials
  – Number of industrial clinical trials
  – Number of patients enrolled in clinical trials
  – Number of publications
Program 3

Modeling the recurrence to improve the follow-up and the social and professional reinsertion

Nicolas Penel (Methodology of CR) & Sophie Fantoni-Quinton (Professional Health)

• **Tools:**
  – Specific datasets from the database built in the program 1
  – Extraction of specific data (direct and indirect costs from a third-part payer, survival, quality of life, and then QALYs)
  – Integration of original methods for cost assessment (econometry)
  – Multidimensional data obtained in a real-life cohort

• **Methods:**
  – Health Economics analysis: Monte-Carlo and Markovian approaches
  – Cost-minimization analysis, cost-effectiveness and cost-utility analysis, shopping spree
  – Randomized clinical trials assessing specific programs for improving the social and professional insertion

• **Targets**
  – ETN, oesophageal and hepatocarcinoma cancer patients
  – All actors involved in cancer care and epidemiology research (GP++, specialists, epidemiologists, economists, statisticians, …)
Program 3

• **Objectives**
  – To improve the social and professional reinsertion
  – To measure the cost of care
  – To improve the follow-up policy (costs and efficacy)

• **5-year efficiency indicators** : Comparative evaluation before and after corrective measures
  – Rate of employment after treatment
  – Delay of employment after treatment
  – Precise measure of management costs
  – Precise measure of follow-up efficacy
  – Modelisation of optimal follow-up policies
Program 4.

To analyse the biological factors of recurrence

(Bruno Quesnel, Isabelle Fournier)

Dormant tumor cells may persist for years ➔ Tumor dormancy ➔ *Does a balance exist between host and dormant tumor cells?*
Building model of tumor dormancy

Mouse models

- Stem cell
- Immunity
- Cell death
- Genomic

Dormant cells

Patient

Genomic markers

To predict relapse

Drug targeting
- TuDor Biotech
- Pharmaceutical teams
(Drug design)
- Industry

Large animal models

Clinical development: trials to shift the balance in favor of patients and prolong long-term CR
Program 5

To avoid recurrence by optimizing local and systemic treatments

Eric Lartigau (Clinical Research) & Damien Huglo (Clinical Research)

• **Tools:**
  – Specific datasets from the database program 1, 2 and 3
  – Optimized imaging (PET/CT, 3T MRI) and treatment methods (target therapies, surgery, radiotherapy…)
  – New animal models

• **Methods:**
  – Development of models (animals, MC calculation)
  – Imaging protocols

• **Targets**
  – ENT, oesophageal and hepatocarcinoma cancer patients (program 1 and 2)
  – New tumor models from program 4 (prostate and melanoma)
Program 5

- **Objectives**
  - To validate new models
  - To improve local and systemic treatments to decrease recurrences

- **Specific programs**

**Diagnostic tools**: Large animal models

**Global Monte Carlo algorithm**

Nick Reynaert & Lille I-INRIA collaboration

**Hepatic and prostatic tumors**
The overall objective of the dissemination and exploitation strategy will be to ensure that the SIRIC becomes a leading European Oncology centre over the next five to ten years.

- Key strategic actions will therefore be:
  - To transform research investment in IP
  - To develop an effective partnership strategy with industry
    - By reinforcing existing partnerships
    - By developing new partnerships
  - To develop a communication strategy that will enhance the SIRIC’s attractiveness and profile

Coordination: Lille North of France University research and higher education cluster: SATT, PRES BIOVALO (technological transfer office) and EURASANTE.
KNOWLEDGE DIFFUSION TO THE PROFESSIONALS AND THE PUBLIC

• European master in Applied Medical Physics
• Master en Education Thérapeutique du Patient et Accompagnement de la maladie chronique (Univ. Lille 1, 2, 3 et Carsat NPDC)
• Working seminars (Program 5 : 12/05/2011, PHRC…)
ORGANISATIONAL STRUCTURE AND MANAGEMENT

• CHU de Lille
• Largest academic hospital in France
• > 13 000 employees (> 1400 senior MD’s)
• ………
SIRIC Lille-Nord de France

International Scientific Committee

Members:

Michel Coleman
Professor of Epidemiology and Vital Statistics
Cancer Research UK Cancer Survival Group
Keppel Street, London WC1E 7HT
United Kingdom

Michael Molls
Professor and Chairman
Department of Radiation Oncology
Technische Universität, München
Germany

Riccardo Fodde
Department of Pathology
Erasmus MC
PO Box 2040, 3000 CA Rotterdam
The Netherlands

Jan Vermorken
Department of Medical Oncology
Antwerp University Hospital
Wilrijkstraat 10, 2650, Edegem
Belgium

1st meeting: May 20th, 2011 in Lille
Conclusion

• Unique opportunity ....