



# ConSORE

Continuum Soins Recherche

**How using Electronic Medical Record to ensure the  
Continuum Bench to Bed-side**

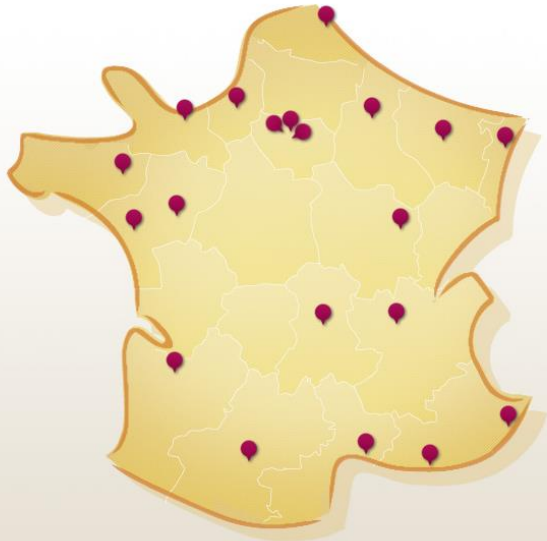
Pascale FLAMANT

9 octobre 2015

# The 20 French Comprehensive Cancer Centers

- **Private nonprofit hospitals**
  - Threefold mission: care, research, education
  - No overrunning fees
  - A particular statute created by French Government after World War II
- **Care for many types of cancer:**
  - standard cancers
  - rare cancers
  - complex situations
  - Leaders in senology
- **Innovation and research:**
  - 12 early-phase clinical trial centers
  - Unicancer Centers take part in 44% of Governmental Hospital Program for Clinical Research

# UNICANCER : a French Reference Network



The only French hospital group entirely devoted to :

- healthcare
- research
- teaching

...in oncology

**20 centers**

**18,000 employees**

**More than 300 clinical trials**

**18% patients included in clinical trials**

**120,000 patients hospitalized per year**

# UNICANCER and medical data a long story

- 1975: UNICANCER created a database for subjects treated in the Centers: "*Enquête Permanente Cancer*"
- Data collected are exclusively structured and completed manually
- 2008: analysis of survival data for patients with breast cancer showed an heterogeneity of data quality that lead to the decision to stop data collection in 2009
- 2011: Visit to the US of the French Cancer Centers Directors to study data mining tools (e.g. CA-BIG - CAncer Biomedical Informatics Grid)
- 2011: Centers asked UNICANCER to develop a data mining tool for their databases: ConSoRe

# ConSoRe's landscape

- In each Comprehensive Cancer Center
  - Approximately one million of patients and several millions documents (cumulated data for 20 hospitals)
  - Data concerning healthcare and research
  - Data in multiple databases
  - Text and Structured data
  - Different information systems and software (between databases and between hospitals)
  - Ethical and security framework (sensitive personalized data)

# ConSoRe's goals

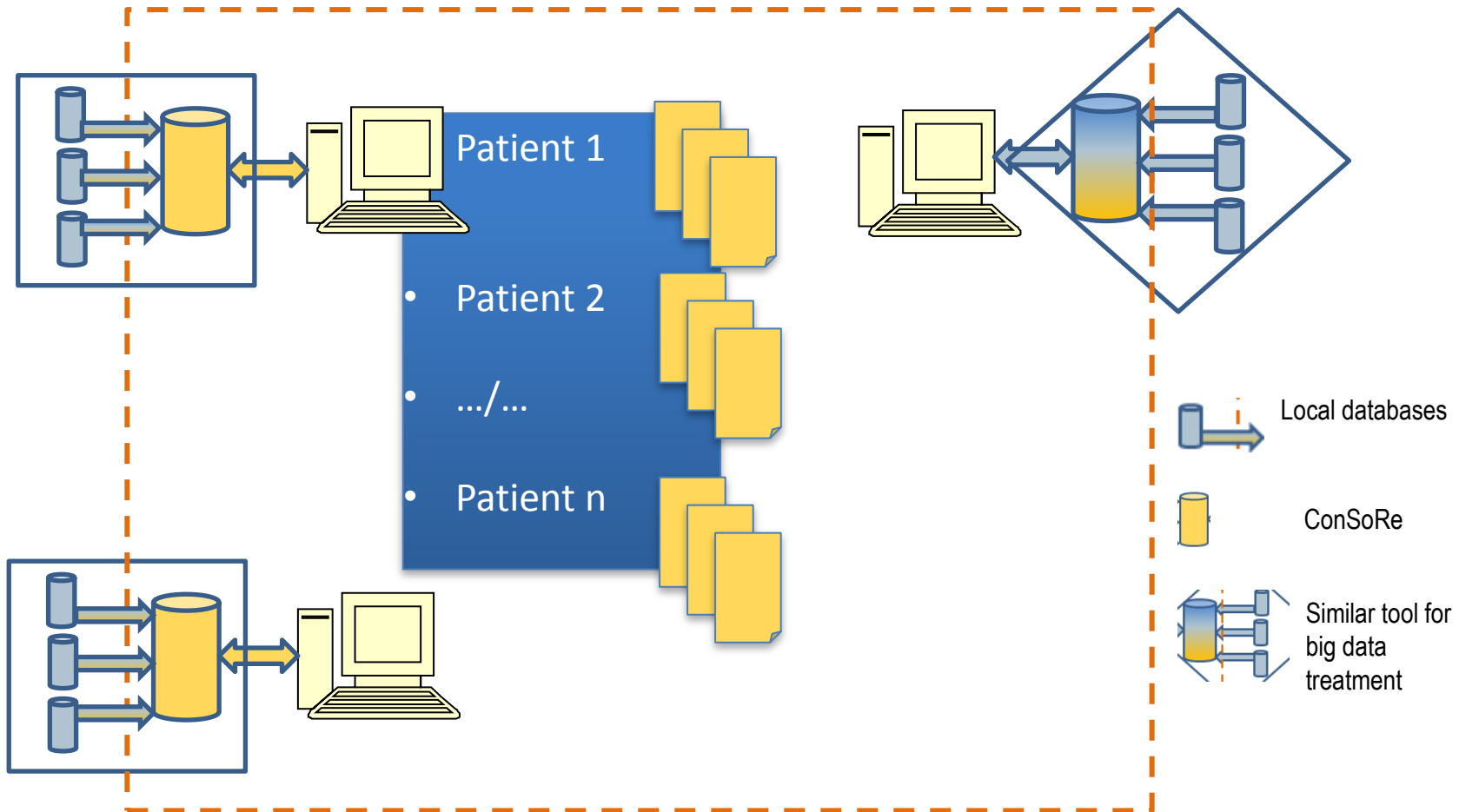
- For a better use of data
  - Facilitate access to all data available in the group
  - Accelerate research for the patients' benefits
  - Increase collaborations
  - Improve patients' care
  - Respect the ethical and security framework

# ConSoRe's Specifications needs

- A local-search software to access all data related to a request / patient(s)
- A national, localization and counting tool
- Management of access according to users' profile and sites' rules
- A software that must interact with other comparable tools
- No change of original data and no new data created
- Automatic data treatment (no impact on the site activity)
- Must progress with advances in computer science and users' need

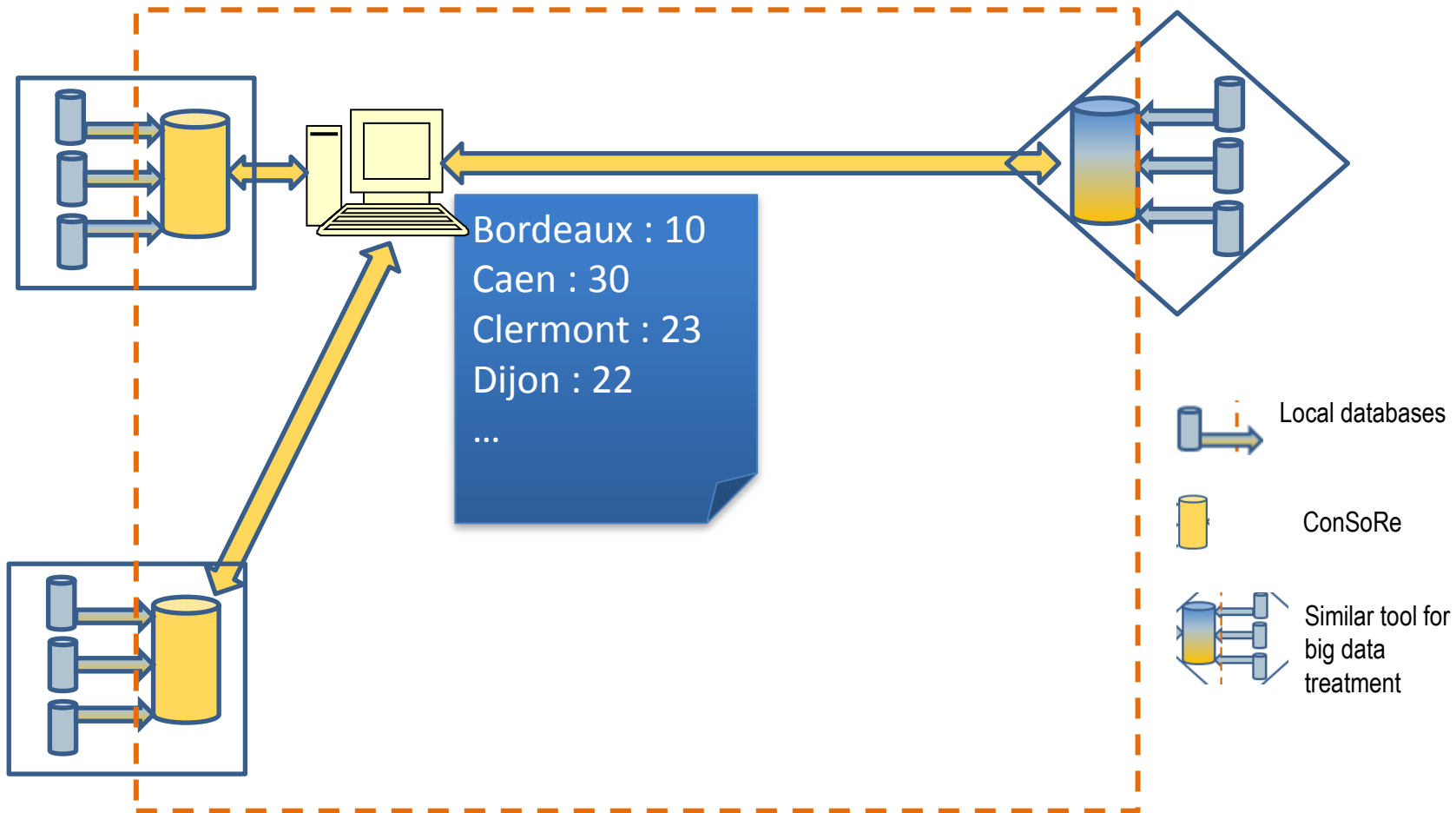
# ConSoRe

## A local-search software





## A national, localization and counting tool

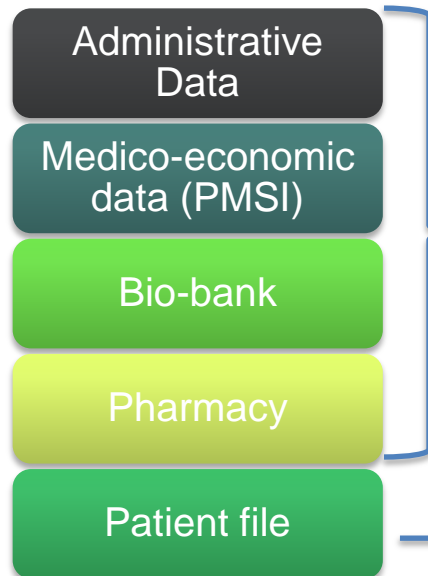


# 2013 - 2014 : The Proof of Concept

- 4 Pilots French Cancer Centers
  - Institut Curie (Paris-Saint-Cloud)
  - Centre Georges-François Leclerc (Dijon)
  - Institut régional du Cancer (Montpellier)
  - Centre Léon Bérard (Lyon)

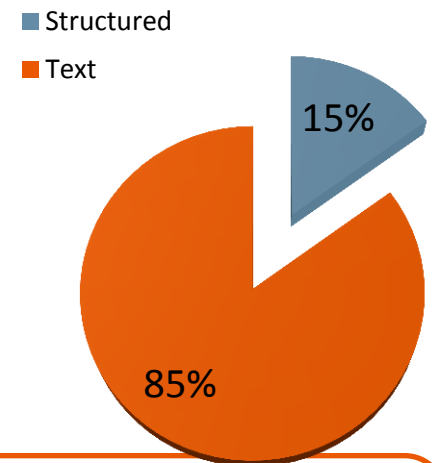


- Data sources



- Structured data

- Text



# Simultaneous research in text & structured database

All sources

Pharmacy source

Pharmacy source

Recherche Multi-critères Recherche simple

? Toutes sources.Localisations = C50 - Tumeur maligne du sein (cim10) X +

ET

OU

? Dossier patient.Medicaments = M4403 - paclitaxel (vidal) X +

? Chimio.Composants Administrés = M4403 - paclitaxel (vidal) X +

ET

? Dossier patient.Fulltext = mutation brca1 X +

Rechercher

Réinitialiser

"Text" data from patient visit conclusion letter

- From the same home page, we can simultaneously question
  - Several data-bases
  - Structured and textual data
  - And use Boolean operators (AND, OR) for narrowing down the search

# A local-search software

The screenshot displays a search interface with the following elements:

- Search results: 199 patient(s) trouv  (s). Recherche: M  dicaments - Antin  oplasiques.
- Navigation: 1 2 3 4 5 ... >
- Search results list:
  - 209 : CARA Aleksandar n  e le 09/09/1943. Si  ge : C56.9 - Ovaire - droit Cat  gorie : maligne Morphologie : M-84413 - cystad  nocarcinome s  reux, SAI TNMs cT2c N0 M8 pT N M Si  ge : 17440 - 17440 - gauche Cat  gorie : maligne Morphologie : M-85003 - ad  nocarcinome canalaire infiltrant TNMs cT2 N0 M0 pT N M Cycle N   1 Jour 1, 31-12-2001... [Ajouter patient] [Afficher les documents]
  - 7 : LAVOIE Arielle n  e le 09/04/1971. Si  ge : C50.4 - Tumeur maligne du quadrant sup  ro-externe du sein - Droit Cat  gorie : maligne Morphologie : M-85003 - ad  nocarcinome canalaire infiltrant L  sion trait  e ant  rieurement TNMs cT1cm N1 M0 pT2m N1a MO Cycle N   1 Jour 1, 20-12-2011 Eribuline essai clinique Pr  vue : 2.221919 mg... [Ajouter patient] [Afficher les documents]
  - 795 : CADOU Lauren n   le 04/06/1941
- Pre-defined items list (highlighted with an orange box):
  - Localisations
  - Localisations Fiche Tumeur
  - M  dicaments
    - Canc  rologie - H  matologie (199)
      - Antin  oplasiques (199)
        - Anticorps monoclonaux (64)
          - Bevacizumab (53)
          - C  tuximab (1)
          - Panitumumab (1)
          - Pertuzumab (2)
          - Rituximab (1)
          - Trastuzumab (13)
          - Antimitotiques locaux (54)

Annotations:

- "List of subjects" points to the patient search results.
- "Add to 'basket'" points to the "Ajouter patient" button for patient 795.
- "List of pre-defined items to help us in our request" points to the "M  dicaments" section of the pre-defined items list.

- The local search provides a list of subjects that answers the request, and provides:
  - A short summary of information on each patient available in source database
  - "Patients" could be identified and added in a basket for a later work
  - A list of interesting items for narrowing down the search

# A national, localization and counting tool

The screenshot shows the UNICANCER Consore search interface. The search criteria are defined as follows:

- ET (AND) of:
  - Toutes sources.Localisations = C50 - Tumeur maligne du sein (cim10)
  - OU (OR) of:
    - Dossier patient.Medicaments = M4403 - paclitaxel (vidal)
    - Chimio.Composants Administrés = M4403 - paclitaxel (vidal)
  - Dossier patient.Fuitext = mutation brca1

The results are displayed in a table with the following data:

Centre	Total des résultats
Paris - Institut Curie	54 patient(s)
Paris - Institut Curie	17 patient(s)
Dijon - Centre Georges-François Leclerc	Le centre interrogé ne prend pas en compte votre recherche. Le(s) champ(s) suivant(s) ne sont pas permis(s) : Chimio.Composants Administrés
Montpellier - Institut Régional du Cancer Montpellier - Val d'Aurelle	37 patient(s)

Additional filters on the right include Sexe (F (54)) and Localisation (17420 (1), 17444 (1), 17445 (1), 17446 (1), 17447 (1), 17448 (1), 17449 (1), 17450 (1), 17451 (1), 17452 (1), 17453 (1), 17454 (1), 17455 (1), 17456 (1), 17457 (1), 17458 (1), 17459 (1), 17460 (1), 17461 (1), 17462 (1), 17463 (1), 17464 (1), 17465 (1), 17466 (1), 17467 (1), 17468 (1), 17469 (1), 17470 (1), 17471 (1), 17472 (1), 17473 (1), 17474 (1), 17475 (1), 17476 (1), 17477 (1), 17478 (1), 17479 (1), 17480 (1), 17481 (1), 17482 (1), 17483 (1), 17484 (1), 17485 (1), 17486 (1), 17487 (1), 17488 (1), 17489 (1), 17490 (1), 17491 (1), 17492 (1), 17493 (1), 17494 (1), 17495 (1), 17496 (1), 17497 (1), 17498 (1), 17499 (1), 17500 (1)).

Results are compiled

When a site does not respond to a specified criteria

For confidentiality reasons, only a sum is available

- The national request provides the count of patients that correspond to our request and the centers where these patients are treated.

# Difficulties met during POC development

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- Discussion with the French data privacy agency about new domains of data treatment
- Concerns from the users about the access to their data without control – Access tracking & Written best practice rules have been established

# Status up-date mid-2015

- September 2014 – the first version of ConSoRe was evaluated by future users
  - ➔ The tool is operational but will require functional evolutions to be practical for a daily use
- From October 2014 to date
  - Identification of evolutions needed
  - Research of funding for improvements
  - Research of public & private partnerships for next steps
  - Planning for installation in other FCCC before the end of 2017

# Evolutions needed according users

- Development of an intuitive and user-friendly interface for research & results
- Identify data for subjects who had several tumors or who have relapsed, with respect to chronological aspects
- New searchable databases
- Interfacing with other platforms like TRANSmart or similar
- Development of a shared bio-bank catalogue



# ConSoRe is a possible solution for ERN

- Possibility to access archives
  - Millions of patients and data of interest
- Avoid double work for the physicians
  - Only “one” database to fill in, the mandatory national one
- Reduce risks linked to sensitive personalized data
  - The data are maintained locally (national framework)
  - There is a necessary agreement from the local physician, in accordance with the patient’s agreement, to access the data

However there is still some work to do!

# Any questions ?

## Contact information

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