



OPEN de
L'International

7^e édition

LA JOURNÉE DES
ENTREPRENEURS BRETONS
QUI OSENT LE MONDE !



BREST
Le Quartz



**Lundi 1^{er} juillet
2019**

WORKSHOP

Introduction to e-health & health biotech in Bretagne

Bretagne overview

Guénolé Bara

Manager, Foreign Direct Investment

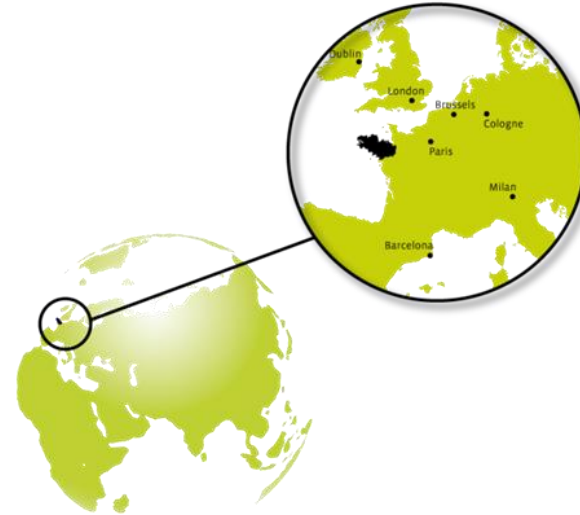
Bretagne Commerce International



Bretagne at a glance






KEY FIGURES

- 28,000 km²**
- 3.25 million people**
- €81 billion GDP**
- 2 Metropoles : Rennes & Brest**
- 7 cities** with more than 100,000 people
- 2,700 km** of coastline
- 7,5% unemployment rate** (1 pt. below national)



MAIN INDUSTRIAL SECTORS

INFRASTRUCTURE

-  From Rennes, an extensive regional road network of **toll-free highways**
-  **High speed trains (TGV)**, allowing fast and easy connections **to Paris in 1h25**
-  **3 major** commercial ports (Brest, Lorient, St Malo)
-  **Easy international connections** : from [Rennes](#), [Nantes](#) and [Brest](#) airports
-  **High speed broadband** using a fiber optic network aiming to connect 100%



AGRI/AGRO FOOD

#1 French region, an innovation cluster: Valorial



IT, TELECOM & ELECTRONICS

#2 for R&D, 2700 Co's, 50,000 employees, an innovation cluster: Images & Réseaux, the national research institute: B<>COM



MARINE ECONOMY

2,900 researchers 100,000 employees linked to the sea including 8,000 in shipbuilding, 9,000 fishermen, an innovation cluster: *Mer Bretagne...*



AUTOMOTIVE

237 Co's including, PSA Peugeot/Citroën assembly plant



RENEWABLE ENERGIES

#1 for marine energies, the national institute of excellence: *France Energies Marines*, among the top 3 regions in wind-power generation



BIOTECHNOLOGIES

#3 French region, 150 Co's, €400M of turnover, 3 marine biology stations
1 « bio-booster » Capbiotek, leaders: Yves Rocher, Biotrial, Roullier, Sanofi...



HEALTH

25 research units, 600 researchers, 10,000 jobs in 2 university hospitals, 8,000 jobs in 230 SMEs, 1 innovation & technology transfer center : ID2Santé, 1 cluster : Atlanpole Biothérapie



GREEN BUSINESS

Smart Grids, eco-design, ecology, energy transition, sustainable building strategy and many innovations in green building + Green Vehicle & mobility.

Bretagne at a glance

A GLOBAL CENTRE OF DIGITAL EXCELLENCE

- **Historical High level of R&D** investment, and a recognized research in Digital / Telecom technologies in Europe
- **Powerful ecosystem** supporting the development of R&D labs and startups
- **Structured businesses** environment enabling the access to European companies and allowing the creation of partnerships in Europe
- **Fast and easy connections** to Paris in 1 h 25 mn and then to other European cities (Twenty trains per day)
- 100% of companies and R&D centers in Bretagne **connected to the very high speed broadband using fiber optic**

QUALIFIED AND AVAILABLE MEN AND WOMEN

- **An excellent education system** that reflects employers' needs
- Rennes is the main university center in Western France, with **64 000 students** every year, among them **7 000 international students**
- More than **9 000 IT & Telecom** students including **1 400 MSc and 100 PhD graduates** each year
- **An excellent level of research - 12.000 researchers (public & private)**
- **High evaluation of "Developed in Bretagne"** products for their **innovation and quality** in the face of global competition in the Digital industry

A general overview of the French healthcare system

Céline Quéron

European project manager, ID2Santé

A centralised system

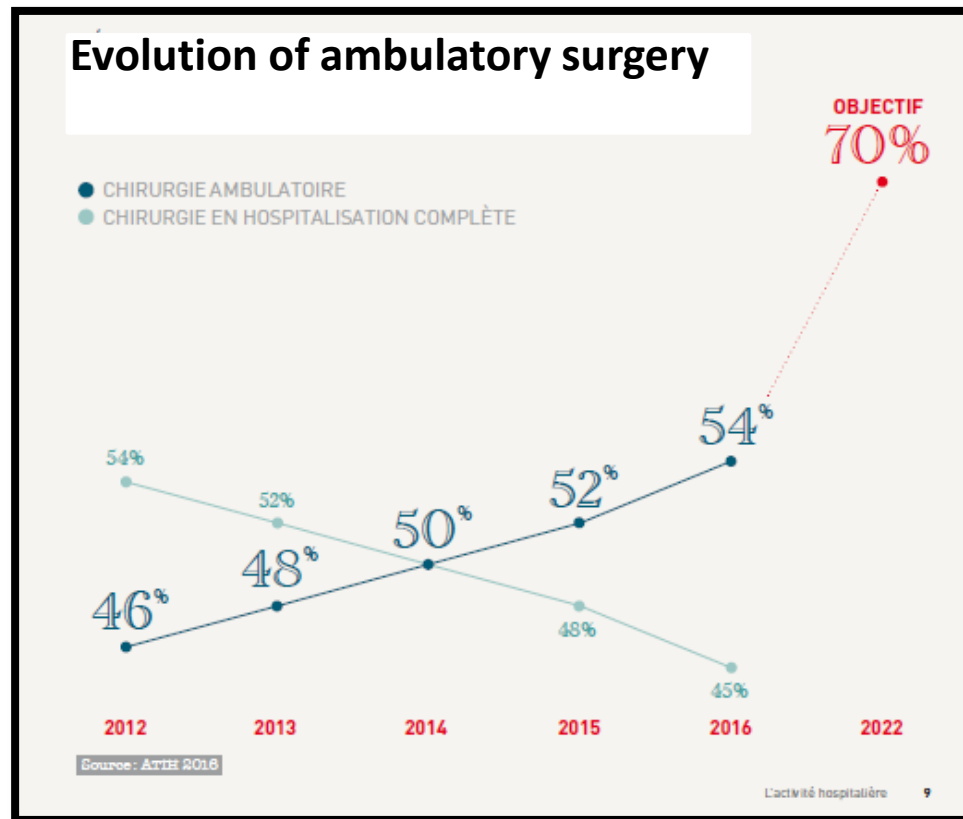
Ministry of Health

Regional Health Agencies (ARS)
are representatives of the Ministry of Health



Inpatient - Hospitals in France

- 3 089 hospitals in France (45% public)
- 216 600 beds (68% in public hospitals)
- 135 GHT (Territorial hospital groupings) involving 891 public hospitals



Outpatient

48 700 Nurses' offices

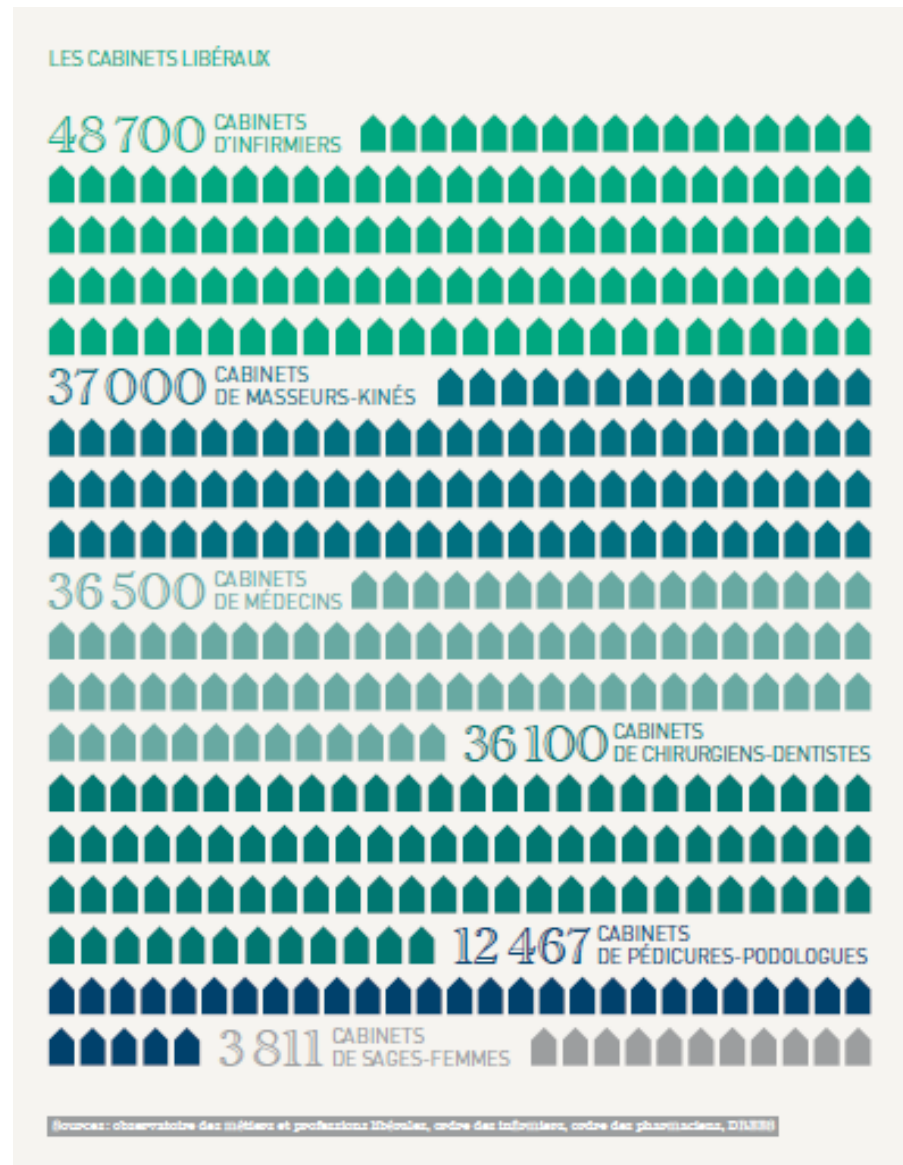
37 000 Physiotherapists' offices

36 500 Doctors' offices

36 100 Dentists' offices

12 467 podiatrists' offices

3 811 Midwives' offices



The French social security system

Created just after World War II

Social security = sickness, retirement, family

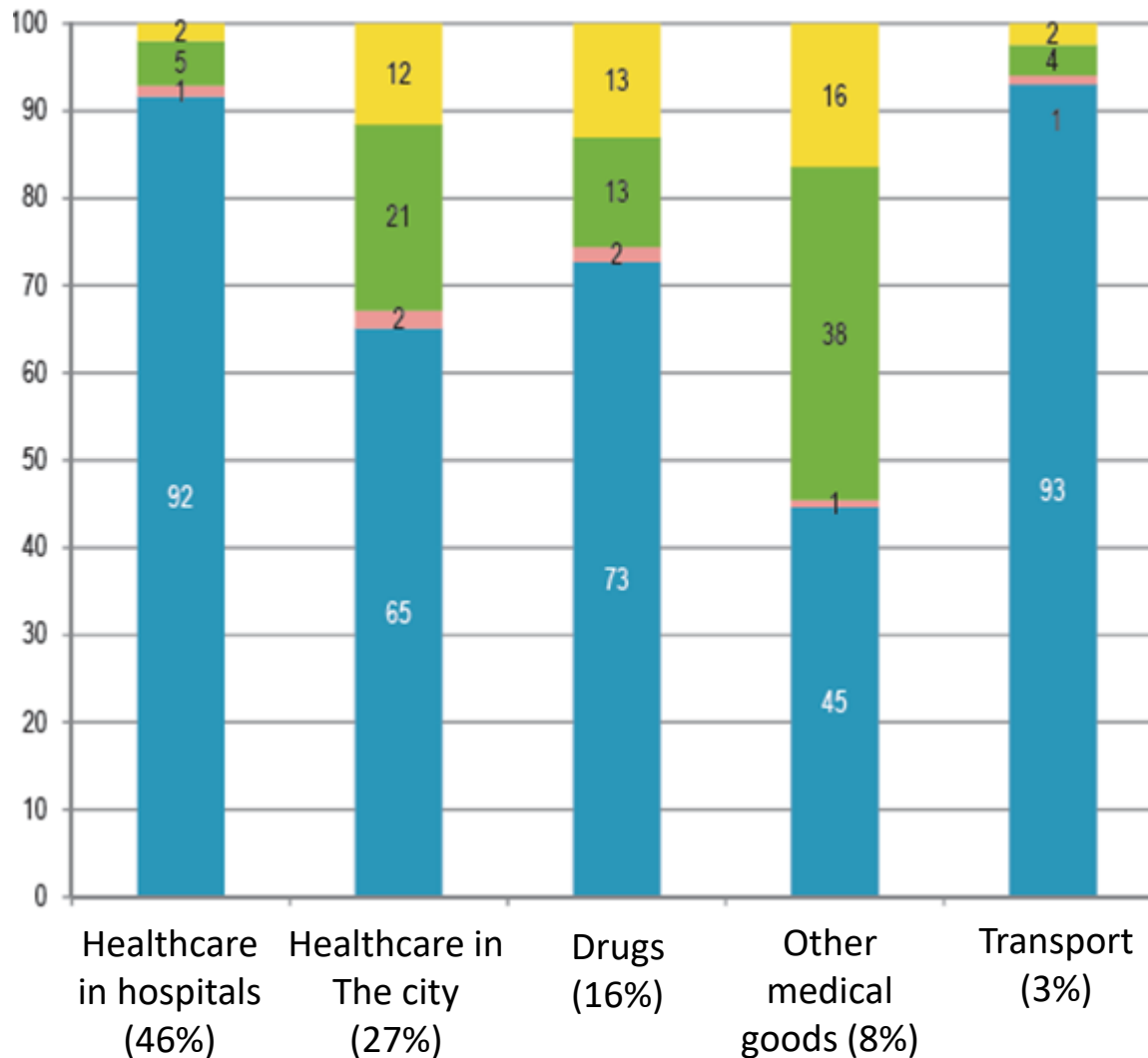


→ Compulsory health insurance, financed by contributions on people's revenues (like in Germany, Japan...), managed by rep. of employers and employees

≠ Public Health system, financed by taxes (UK, Ireland, Canada...)

Health expenses in France

- **Consumption of healthcare (services and goods) 2017**
- 199,3 billion ; 2977 €/inhabitant ; 8,7% of GDP

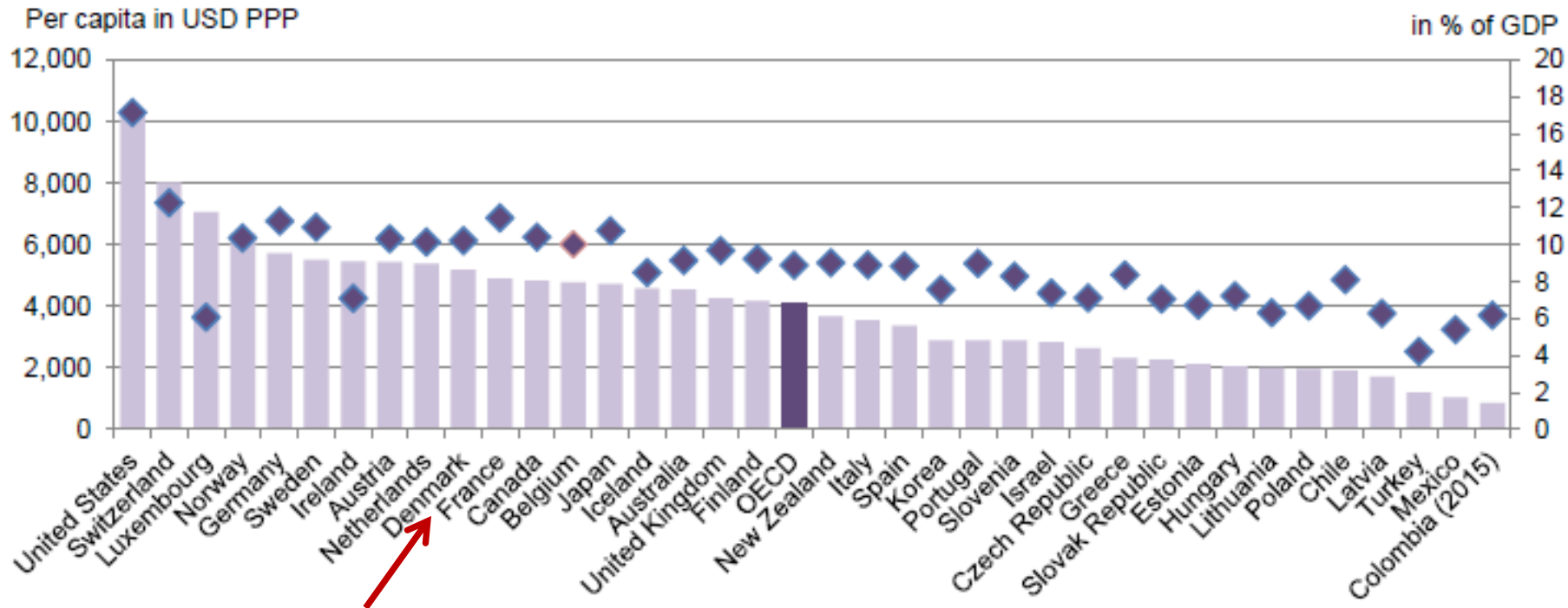


Origin of funding of consumption (%)

- Households
- Supplementary health insurances
- State
- Social security

International comparison

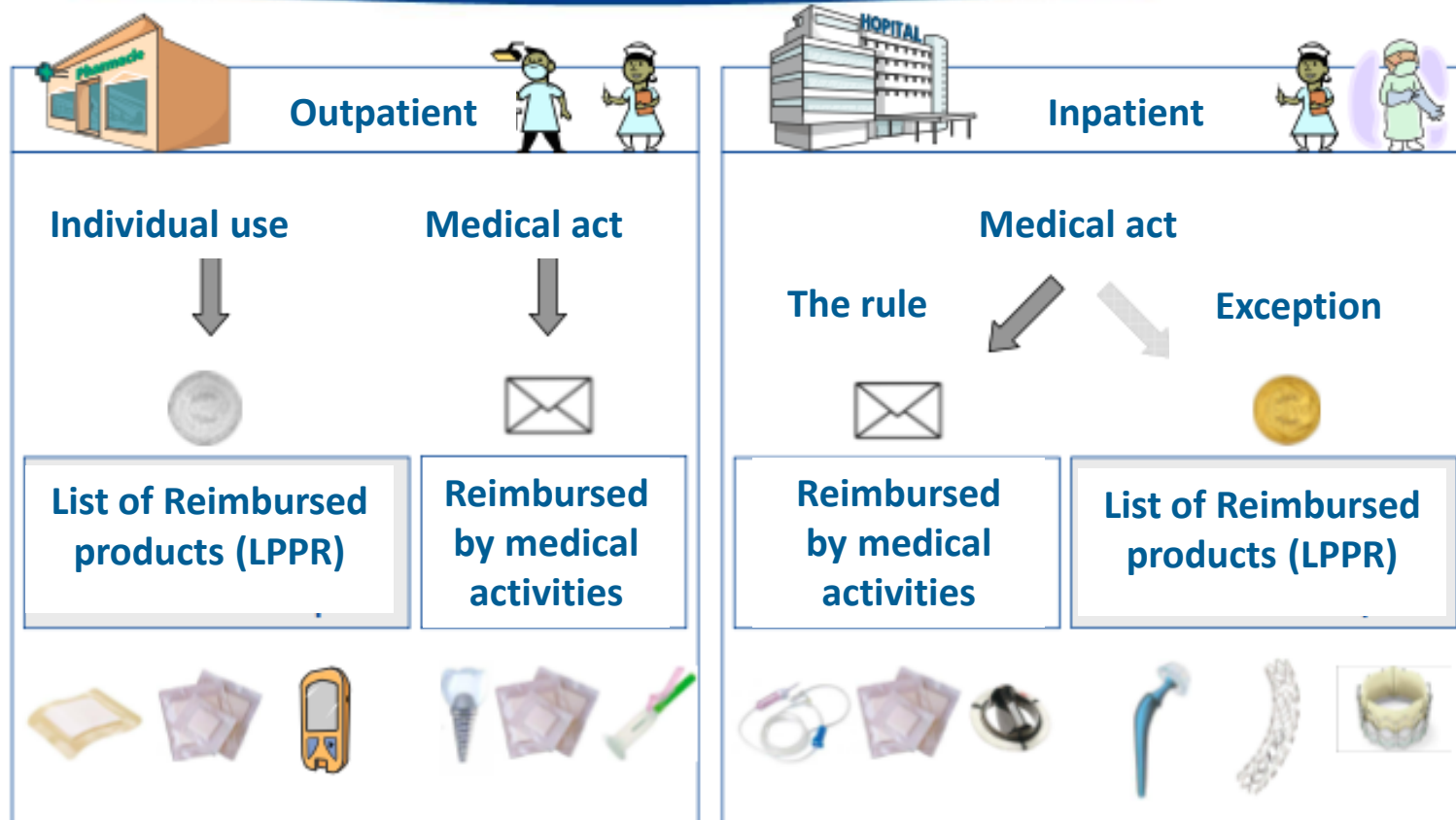
Figure 2. Health spending per capita and as share of GDP, 2017



Note: Data for 2017 was estimated by the Secretariat for those countries that were not able to provide this information. PPP stands for Purchasing Power Parities and adjusts health expenditure for differences in price levels between countries.

Source: OECD Health Statistics 2018.

Reimbursement of Medical Devices in France



Novelties and tendencies in healthcare funding

Since 2004, public and private hospitals get funded through the T2A mechanism (Tarification à l'Activité): « reimbursement upon activities »

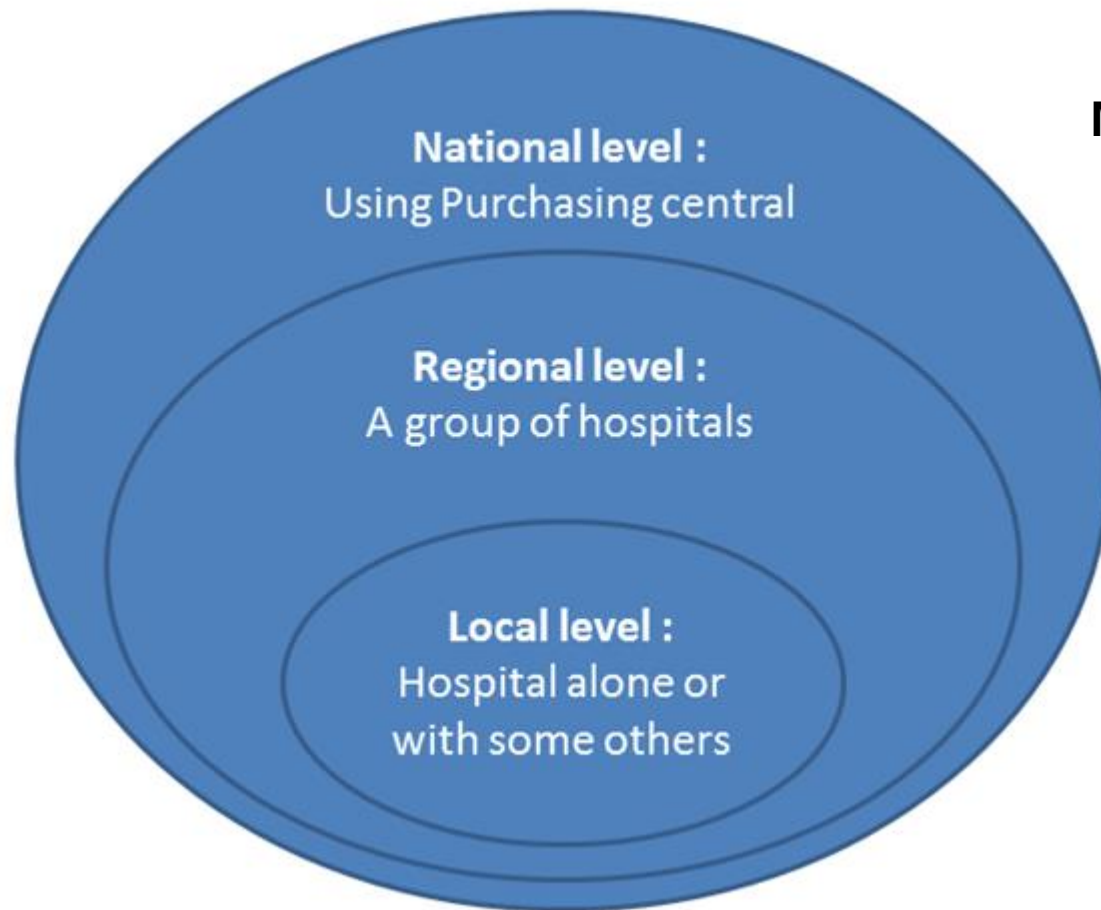
Since 2009 « Forfait Innovation » for Medical Devices: temporary reimbursement → further clinical proof

The **2018 Law for the funding of the Social Security Article 51** enables funding of new organisational models to overcome the silo between inpatient and outpatient healthcare

Since 2018, telemedicine acts can be reimbursed

→ Reimbursement schemes are changing towards reimbursement of « solutions » for healthcare pathways (more integrated care)

How a hospital can purchase



Main purchasing « centrals »

- **UniHA**
- **UGAP**
- **AGEPS (AP-HP)**
- **Resah**
- **Unicancer**

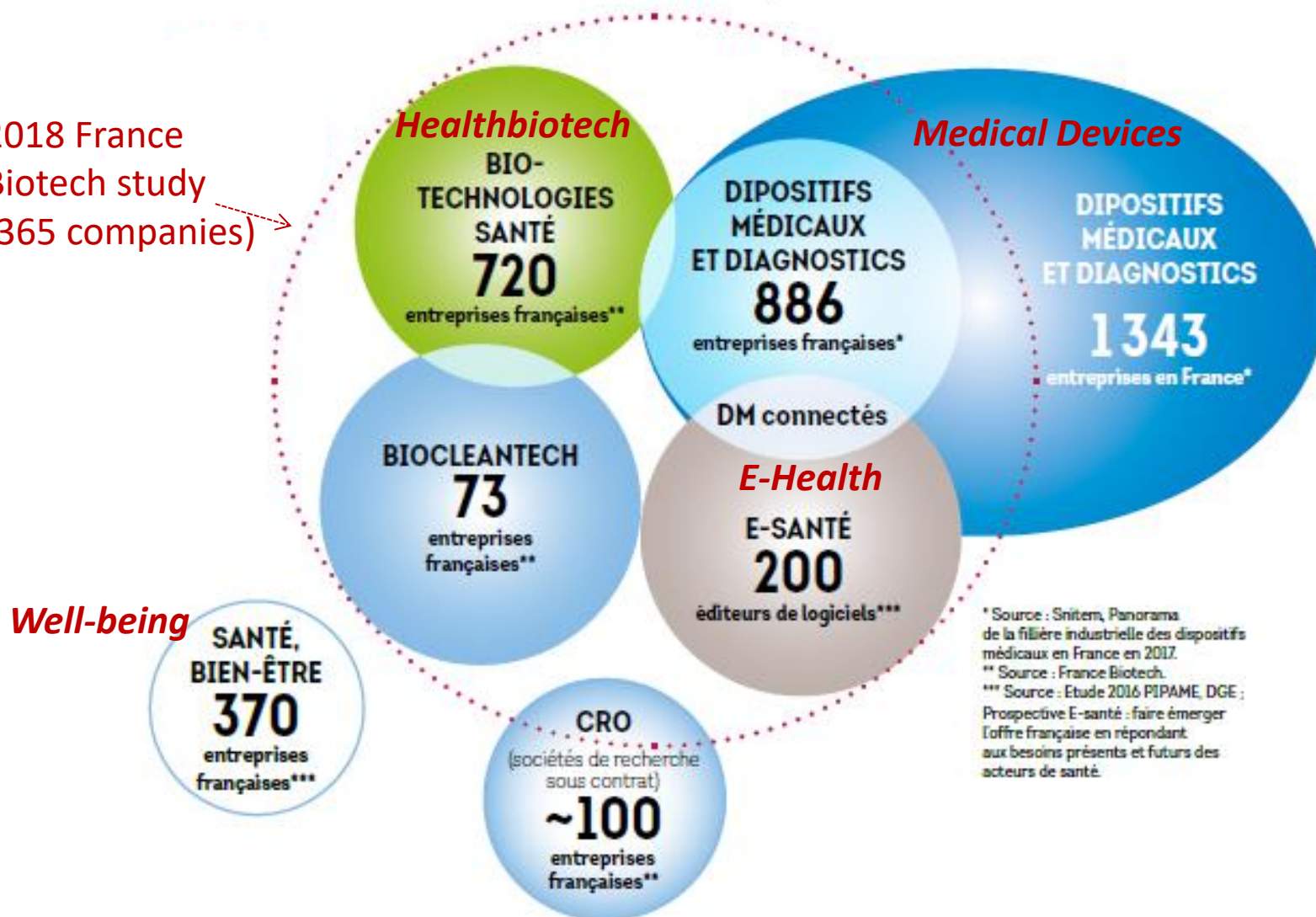
Health companies in France

Céline Quéron

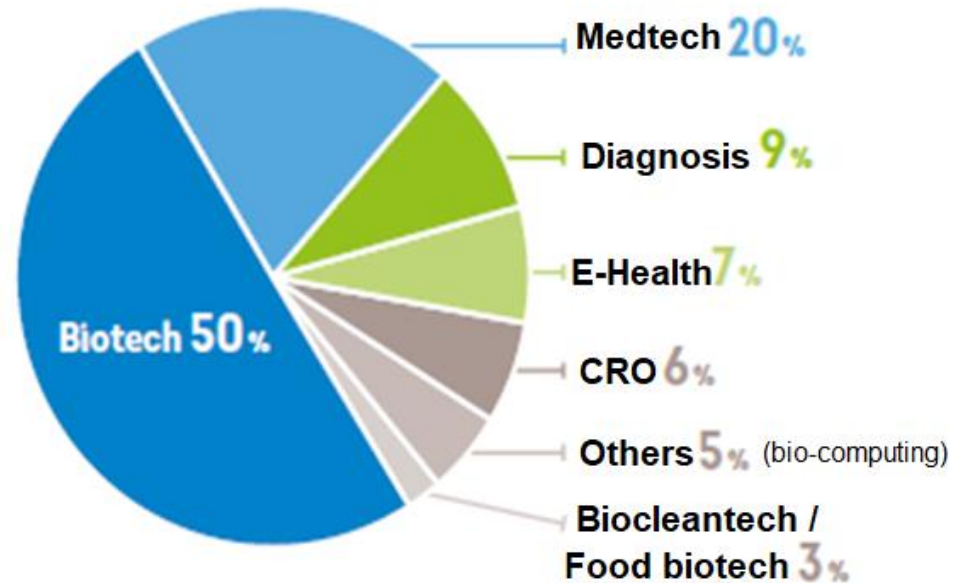
European Project manager, ID2Santé

Number of companies in France

2018 France
Biotech study
(365 companies) →



France biotech study – 2018 sample



**365 SMEs with at least 15%
of expenses in R&D**

France biotech study – 2018

Main figures (365 companies)

26 employees on average

32% of employees dedicated to R&D

36% are more than 10 years old (18% in 2008 study)

41% are less than 5 years old (same in 2008 study)

France biotech study – 2018

Weaknesses

- Access to market & reimbursement for medtech solutions
- SMEs are getting more mature but still hard to become middle-size

Strengths

- Excellent research and education
- Strong support from the Public Investment Bank (BpiFrance)
- Favorable fiscal framework for research and innovation
 - JEI Young Innovative enterprise (<8 years old)
 - CIR (income tax credit for research)

Research and Innovation in Bretagne

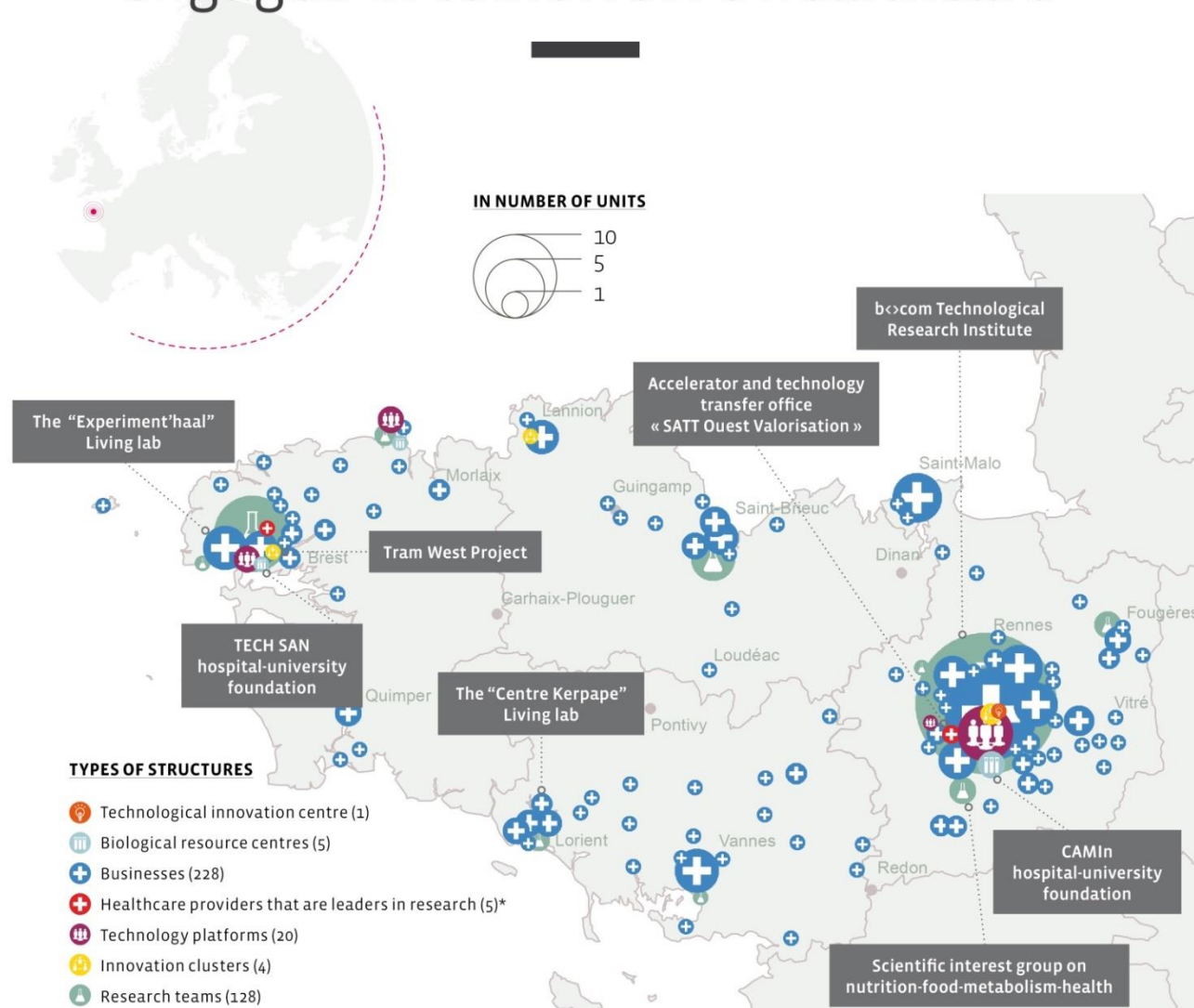
Céline Quéron

European Project manager, ID2Santé

The research & innovation ecosystem

The health sector is a strategic area within the region

OVER 500 KEY PLAYERS
including **OVER 230 BUSINESSES**
engaged in tomorrow's healthcare



Key areas in health research and innovation

Medical Technologies for diagnostics and therapeutics



Medical imaging, medical devices, Computer assisted surgery, etc.

Biotech/pharma new therapeutic solutions



Drug and other active molecules development, CROs (Contract research organisations), CMOs (Contract manufacturing organisations), etc.

E-health



Telemedicine, big data, Internet of Things, etc.

Prevention - Nutrition & health

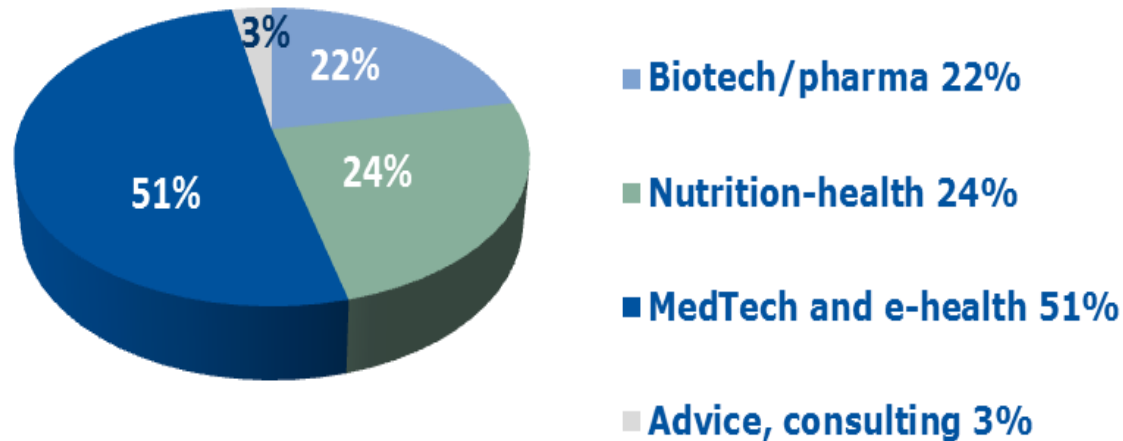


Environment & health (ecotoxicology...), development of nutritional ingredients, partnuts, etc.

Companies operating in the health sector in Bretagne

230 companies

Twice as many as 20 years ago



Research and education

In Bretagne, most of the national research institutes have regional units

- Inserm (National research institute for biomedical research and Human health)
- Inra (National research institute for agricultural sciences)
- Anses
- CNRS
- Inria and others...

2 University Hospitals: education-research-healthcare (Rennes and Brest)

3 Universities with scientific curricula

EHESP: The National school of Public Health

All in all: 55 research teams operating in health (source: *Plug In labs 2019*)

<https://www.pluginlabs-ouest.fr/en>

Focus on clinical research

- 2 University Hospitals (Rennes and Brest)
- 3 Clinical Investigation Centres (one dedicated to MedTech, with expertise in cardiology)
- 1 regional cancer centre for treatment and research
- 2 Hospital-University Federations:
 - CAMin (Cancer, Microenvironment and Innovation)
 - TechSan (Innovative Technologies for Health)
- 1 clinical data warehouse (e-HOP, at Rennes University Hospital), part of the Western France node of the National Health Data Hub

Focus on health research projects and facilities (not exhaustive)

- The **CALYM Carnot** Institute (The Consortium for the Acceleration of Innovation and its Transfer in the LYMphoma Field)
- Technology Core facilities in **medical imaging**
- **Living Labs** dedicated to health and autonomy

Funded by the « Investment for the Future » national programme:

- **B<>COM**, Institute of Research and Technology (Digital), with « augmented healthcare » and « connected healthcare » labs
- **FollowKnee** Hospital-University research project (connected knee prosthesis)

E-Health in Bretagne



Telemedecine

Connected health devices

Big data

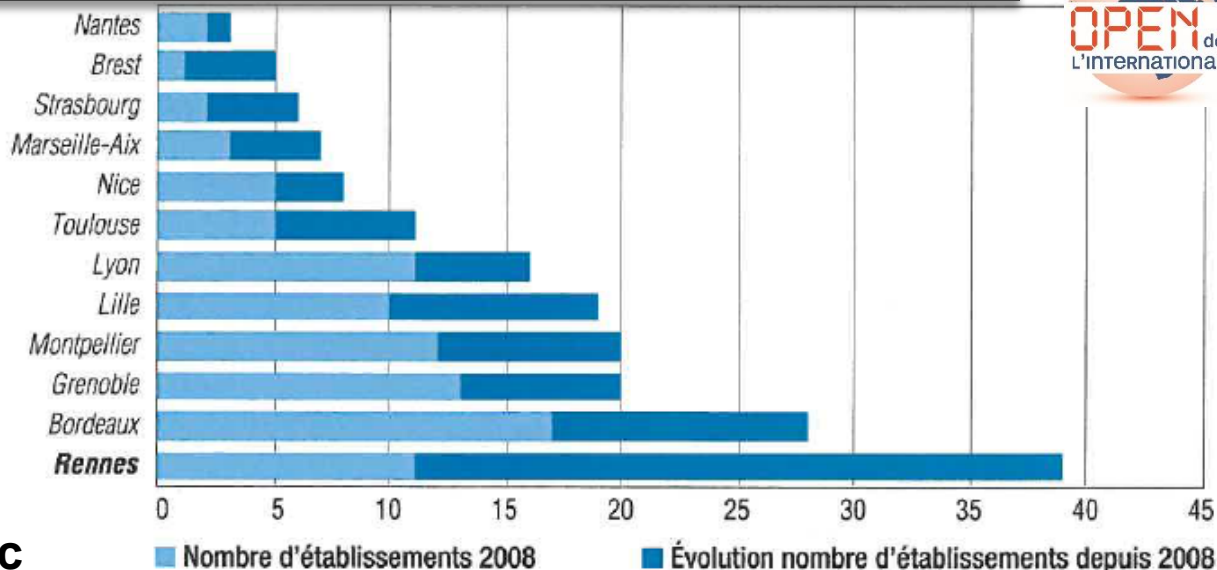
Assisted living



More than 50 companies

E-Health in Bretagne

One of the most dynamic
region in France



Stratégies d'entreprises et territoires :
quels apports réciproques ?

Fertilisation croisée écosystème santé et numérique

1. Développement de partenariats et groupes de travail communs entre pôles et clusters du numérique et de la santé
2. Appartenance de certaines entreprises à plusieurs pôles et clusters d'une même région

Les régions les plus dynamiques :



Écosystèmes
territoriaux
d'innovation
dans la e-santé

Health & Tech
STUDIES

Avec le soutien de



Territoires & accompagnement des



Les outils opérationnels



Medical Technologies in Bretagne

Diagnostic and interventional medical imaging
Medical devices, orthopaedics
Computer-assisted medicine/surgery



More than 80 companies



Health and Biotech in Bretagne

More than 60 companies

Development of therapeutic molecules
Innovative preclinical and clinical services
Manufacture and distribution of pharmaceuticals



Support to Research, Innovation and Partnerships

Guénolé Bara

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From national to local support (examples)



European / International support

European Projects (H2020, INTERREG, FEDER, EUROSTARS ...)

International cooperation schemes with involvement of the French Public Bank for Innovation (BPI)

French national support

CIR : Research contribution - based Tax Credit

CICE : Competitiveness and Employment contribution - based Tax Credit

JEI : Innovative Young Companies

Bretagne regional and local support

Regional focus on

- Innovation
- Industrial production
- Export

Various support types including

- Repayable advances
- Subsidies for recruitment of qualified staff
- Regional funding to attend trade shows
- Contribution to public works

A dedicated team to serve as a single point of contact for all needs you may have for your project : Data Collection, Understanding of the French regulatory and financial aspects of your project, Business Meetings, Search for Sites, Sourcing of partners, Long term support after setup ...

European funded R&D&I

- Horizon 2020
- Eurostars



Bilateral funding for R&D&I

Examples

- BpiFrance, the French public Investment Bank (e.g. BpiFrance/ZIM Germany) : co-development of innovative products close to market launch
- ANR + Federal Ministry of Education and Research (BMBF) calls for research projects (e.g. on antimicrobial resistance) for public research organisations, enterprises and health establishments

Questions & Answers



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