



ELFE: A FRENCH BIRTH COHORT STUDY

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***Dalla genetica all'ambiente: il ruolo della statistica medica e
dell'epidemiologia clinica***

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The ELFE Project

Setting up a cohort of 20 000 children, followed from their birth to adulthood

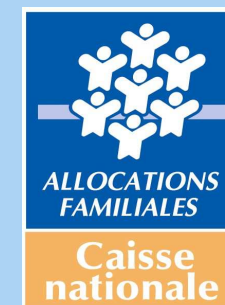
with

→ A national partnership between research institutions and public ministries/departments

for

→ A multidisciplinary approach (social sciences, epidemiology, nutrition, child health ..) with an emphasis on environmental health

National Partnership



A multidisciplinary approach

From Conception → → → → → → → Adulthood

study of the social, behavioral and environmental determinants of child development and health

Situation at birth

Health, behaviour, nutrition, accidents and health care

Familial, social, economic, physical context and environment

Physical and cognitive development

Education and work

Building up the multidisciplinary approach : a collective effort

Definition of the general patterns of the project
and then :

- launching of 2 calls for proposals (social sciences, health, and environment) aimed at the scientific community
- almost 100 proposals received with more than 60 research teams involved
- creation of 15 thematic groups, each of them being coordinated by a researcher in the relevant field

The 15 thematic groups

- Demography and family
- Economics, precariousness
- Socialization, education
- Psychomotor development
- Physical growth and puberty
- Food, nutrition, metabolism
- Respiratory disease
- Asthma and allergies
- Cancer
- Accidents and trauma
- Perinatal period
- Health care and dental health
- Infectious disease
- Chemical exposures
- Physical exposures
- Exposures to environmental contaminants

2 questions among many

What are the exposure levels and the consequences of contamination during pregnancy and early childhood by well-known pollutants?

What are the consequences of transformations in the familial structure, the constraints on child development?

Organisation

- Strategic council : representatives of the participating institutions
- Scientific Committee : french (9) and foreign (6) experts
- Project group : 4 national and 14 topic-specific coordinators
- The operational team : currently 14 members
- Technical groups : data management and collection, methodology, ethics

The sample

A nationally representative sample of children :

- Inclusion of all children born in metropolitan France on 16 specific days of 2010-2011
(1, 2, 3 and 4 of october, january, april and july)
- All these children will be part of the (new) Insee permanent demographic sample (EDP+)
- Roughly : inclusion of 50 000 children to obtain a cohort of 20 000

Data Collection Plan at different ages

Passive and permanent follow-up :

School follow-up

Environmental data

Medical and health care data

Insee Permanent
Demographic Sample

14 y old
11 y (sec. sch)

10 y
8 y

6 y (prim. sch.)

5 years
3 years

2 years
1 year

6 weeks old

Birth
Pregnancy

Active and ponctual follow-up:

Face-to-face Interview
Phys exam + Psych.tests,
Blood Sample (nurse)

Telephone Interview
Face-to-face Interview

Telephone Interview
+MD. questionnaire

Face-to-face Interview

Interview + med files
Biological samples

Biological collection

Measures of in utero exposure

Prospective follow up during pregnancy impossible

→ maternity collection

- Blood of the umbilical cord (38 ml)
- Mother's urine (200 ml)
- Mother's hair
- Mother's milk
- Mother's venous blood ?

Environmental analyses

- Dust samples
- Radon exposure
- Geographic Information System (GIS)
(Geographic coding of personal address and work localisation)
- Characteristics of neighborhood
- Description of usual activities
 - Time spent at home
 - Transportation
 - Working time

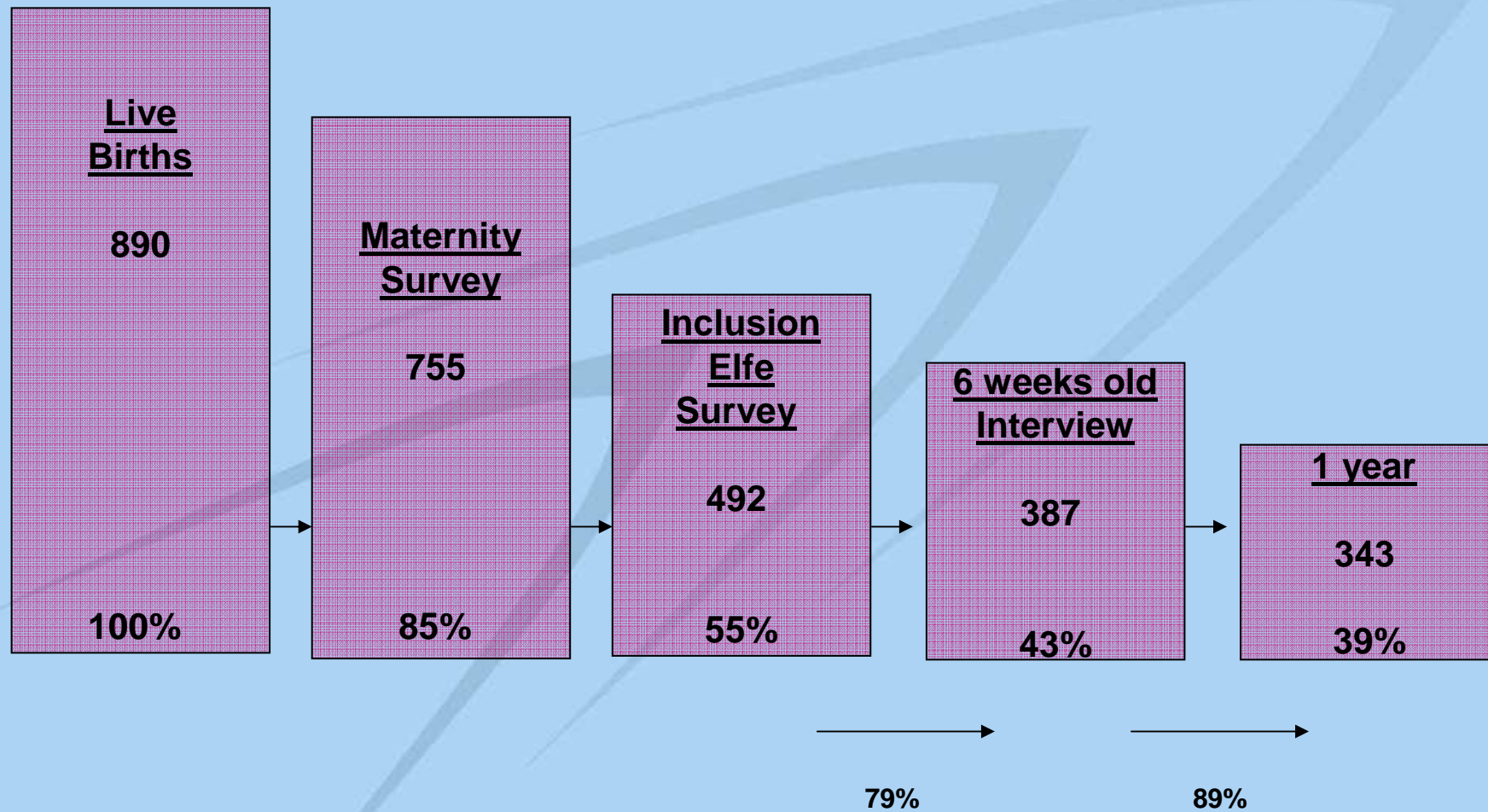
Example of environmental analyses:

Radon exposure and health effects

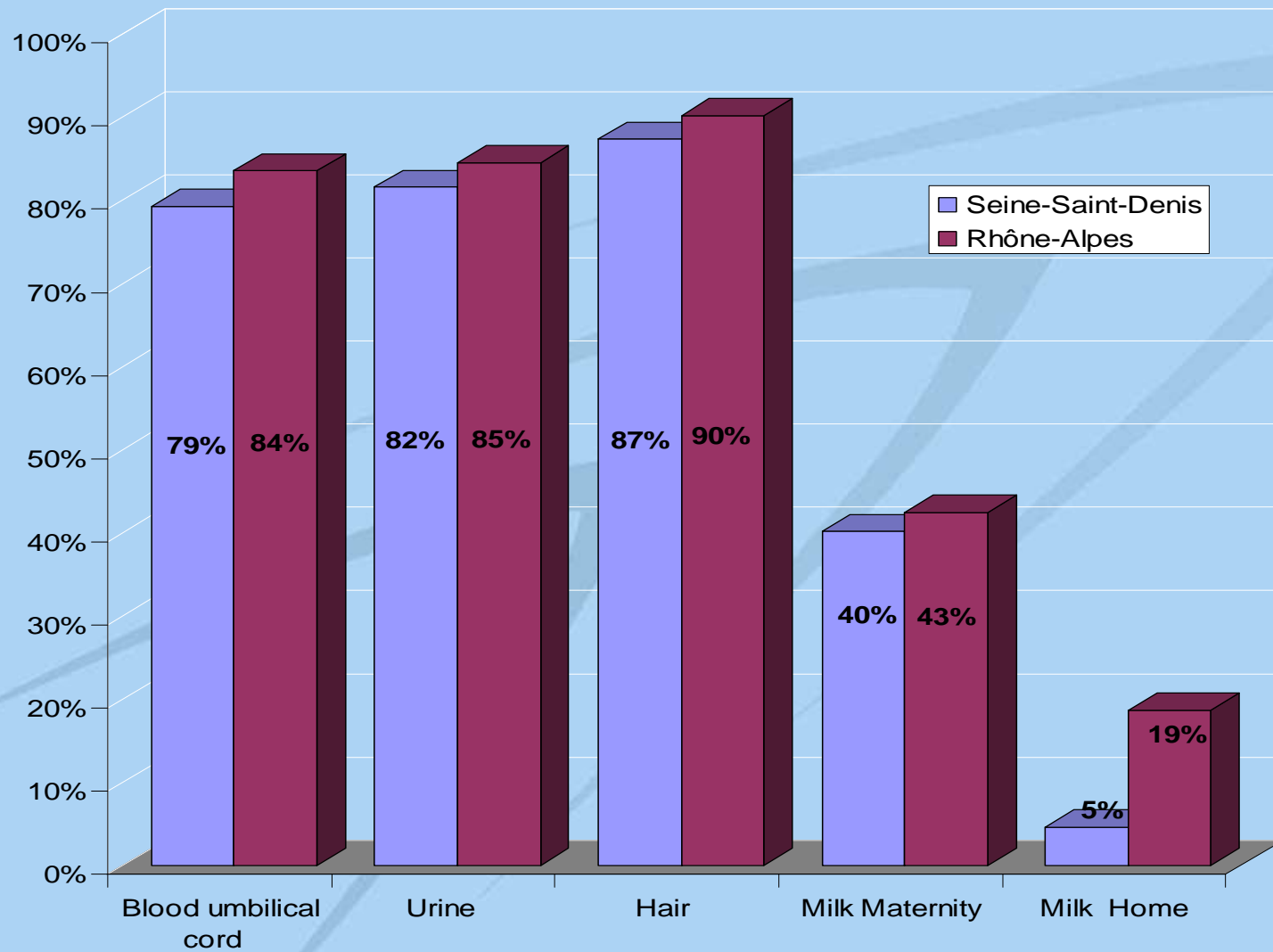
- Individual annual measure of exposure to radon during childhood at home
- Analysis of risk associated with exposure and interactions with other factors (passive smoking)



Participation rate (pilot studies)



Acceptance rates for Biological sample collection in the maternity survey



Conclusion (1)

ELFE : An ambitious project

- Cohort size
- Duration of follow up

An innovative project

- Biomedical and social approaches
- Use of administrative data bases

→ a complex and costly project

Provisional Budget :

- 7 000 000 euros each of the first two years
- 3 000 000 euros each of the following years

Conclusion (2)

Ongoing pilot studies → project feasibility can be taken for granted

- Successful Maternity Survey and Collection/ preservation of biological samples
- Excellent acceptability of face to face and telephone questionnaires

However we must be able to :

- increase the acceptance rate of the maternity survey

- Improving nurses and midwives specific training as well as mothers' information

- reduce attrition

- Keep close contact with the family (strong household mobility)
- Optimize our communication (letters, greeting cards, newsletters and website)

Thank you



www.elfe.ined.fr