

## Perinatal health and territorial analysis in the Ile de France (IDF Paris region)

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# Outline

- Background
- Objectives
- Methods
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- Discussion
- Conclusion

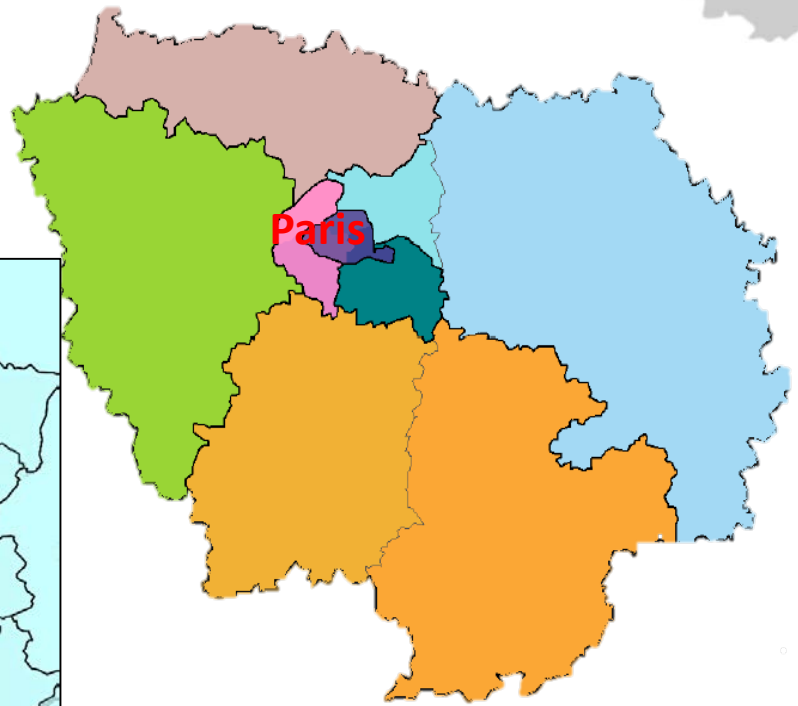
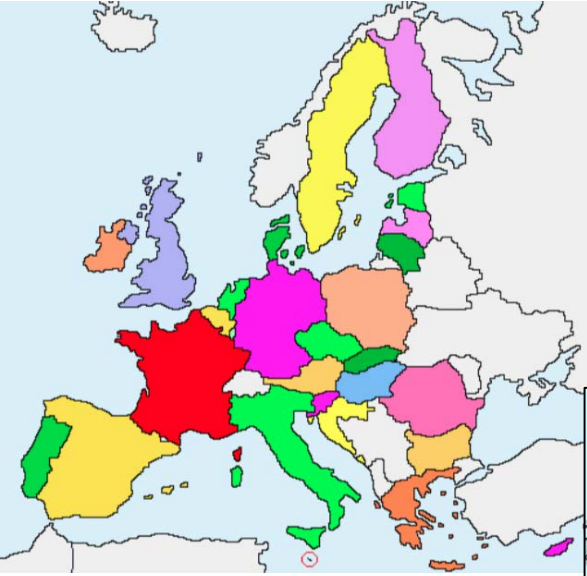
# Background-1

- Health spending in France 2016 = 11% / GDP
- ( mean in UE: 10%)
- Social Security : 77% of their financement
- Complementary insurance: 13%
- 250 euros to be paid by inhabitant/year
  
- SS = Universal sickness protection (if you work or are regular resident > 3 months in France)
- State medical help / sick foreigner

# Background-2

- Social security (SS) and Maternity :
  - Pregnancy declaration < 3 months
  - Mandatory biological exams and consultations: 100%
  - All medical costs: 100%  $\geq$  5 months
  - 3 Ultrasound examinations: 1st 70%, other 100%
  - Hospitalization: 100%  $\geq$  5 months
- If no SS:
  - Maternity and child protection (district budget): variations/districts
  - Hospital: permanent access to care (regional budget)

# IDF region



**European Union**  
**28 states**  
**512 Million inhabitants**  
**5,1 Million births**  
*Eurostat 2018*

**Metropolitan France**  
**13 Regions**  
**67 Million inhabitants**  
**726,000 births**  
*INSEE 2018*

**Paris-Ile de France Region**  
**8 districts, 1276 municipalities**  
**12 Million inhabitants**  
**3 Million women 15-49 y old**  
**178,000 births (24%/ France)**

# Background-3

**Perinatal outcomes** in Paris Region (IDF) < France (metropolitan France) in 2011-2013

22 weeks	Birth	7 days	28 days	1 year
stillbirth				
<b>Perinatal mortality</b>				
		Neonatal mortality		
		Infant mortality		

IDF Perinatal mortality (Pm) = 11.3/1000 ( metrop France: 10,3)

“ Infant mortality (Im) = 3.5/1000 ( “ “ : 3.3)

**Infra-regional disparities: Pm 9.7 -> 13.2/1000**

**Im 3.3 -> 4.8/1000**

# Background-4

- 2012-2016 Regional health authority project aimed at reducing infant and perinatal mortality
  - Focused first on Seine St Denis district (most deprivileged population, infant mortality + 40%)
  - **Audit of all perinatal deaths: 33% judged avoidable by better management of risk factors before delivery** (obesity, diabetes, ....)

# Objectives

- To identify territories with an excess of **perinatal mortality**
- Access pre-delivery **risk factors information** availability in the routine information system



# Methods-1

**Population:** all newborns and their mothers in IDF  
in 2014-2015-2016

## **Data Sources:**

Vital statistics, Census data, Tax administration data

Hospital discharge summary (DRG system)

with mother-neonate linkage:

- > medical informations
  - **diagnosis (ICD10th): vital status, obesity, diabetes,...**
- > place of residence

**Analysis:** SAS 9.4, MAPInfo professional 12.0

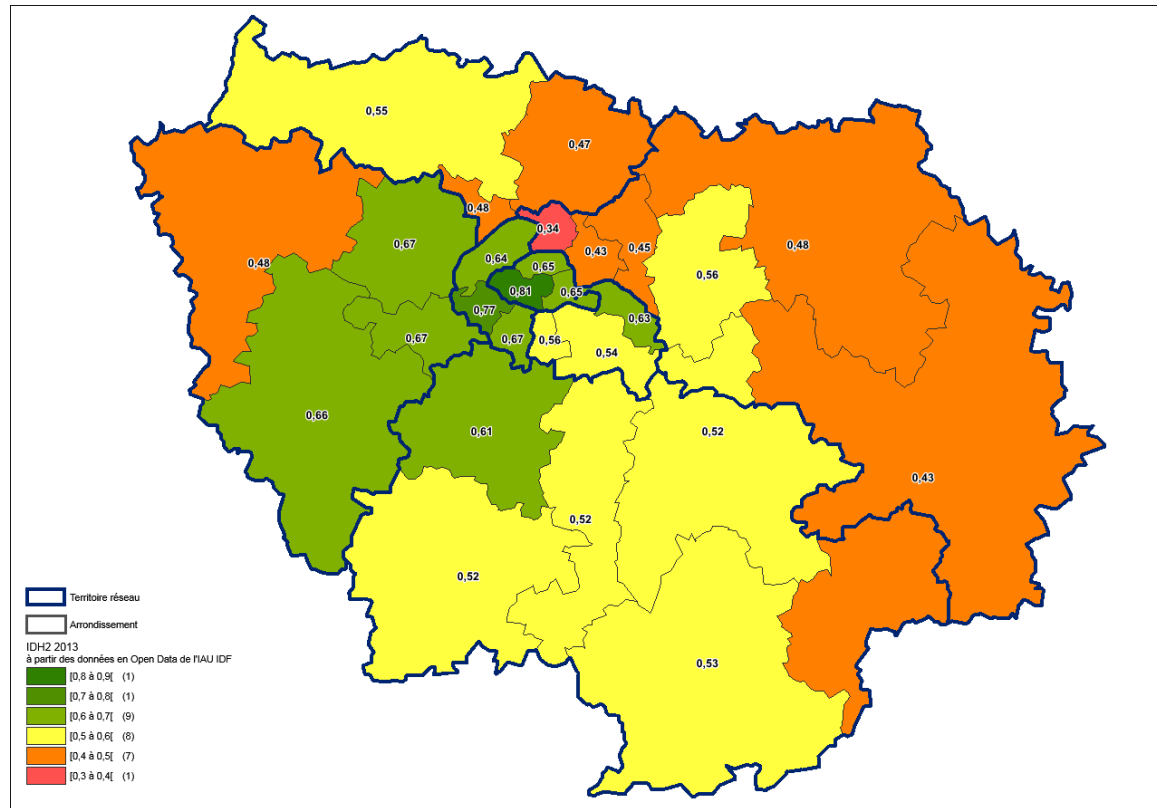
# Methods-2

## IDH2

- Human Development Index regional adaptation
- Life expectancy at birth
- Education
- Income level
- Produced by municipality



Calculated /sub-district



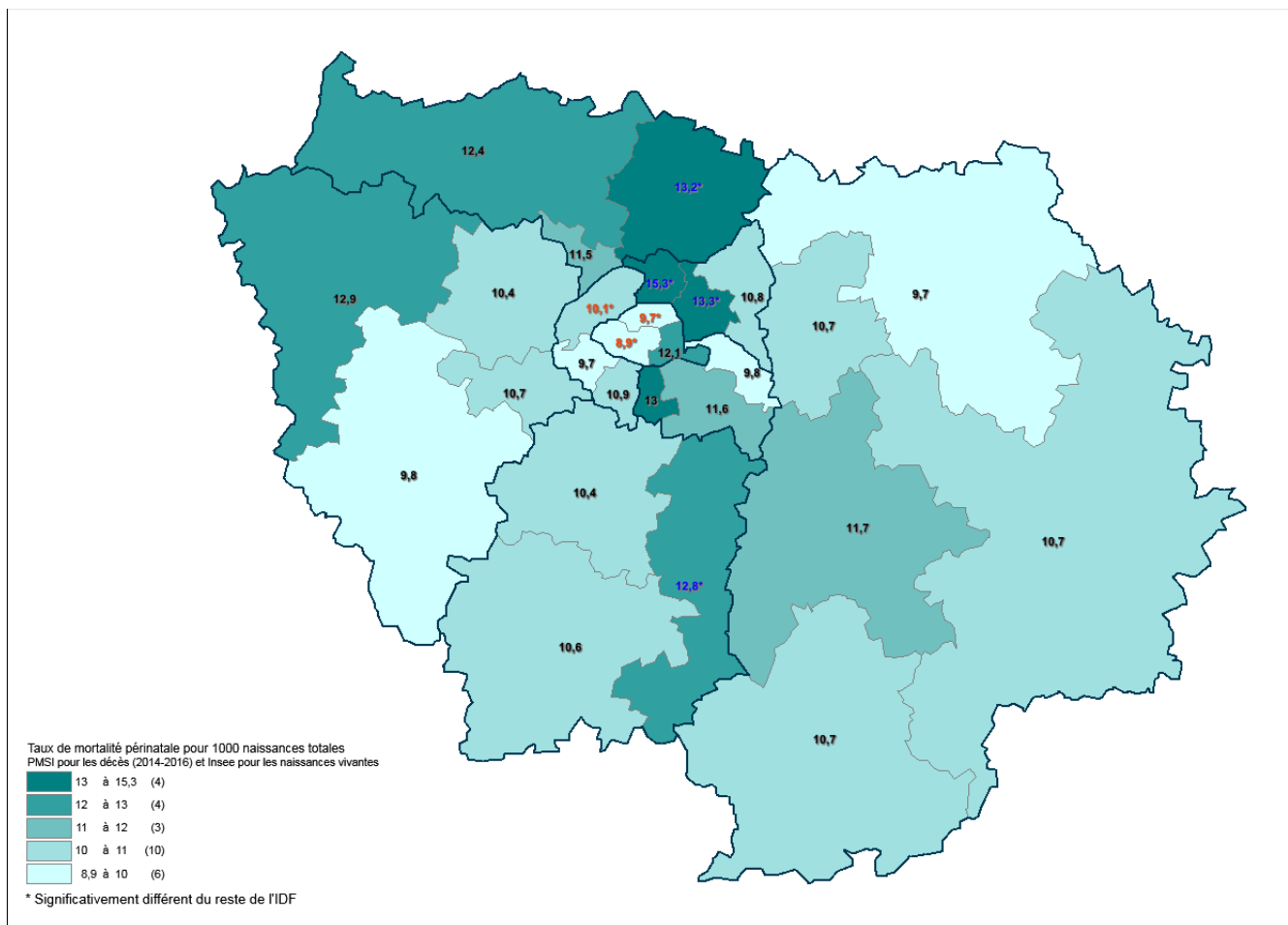
Large variations of **IDH2** in the

- 27 sub-districts of IDF Region

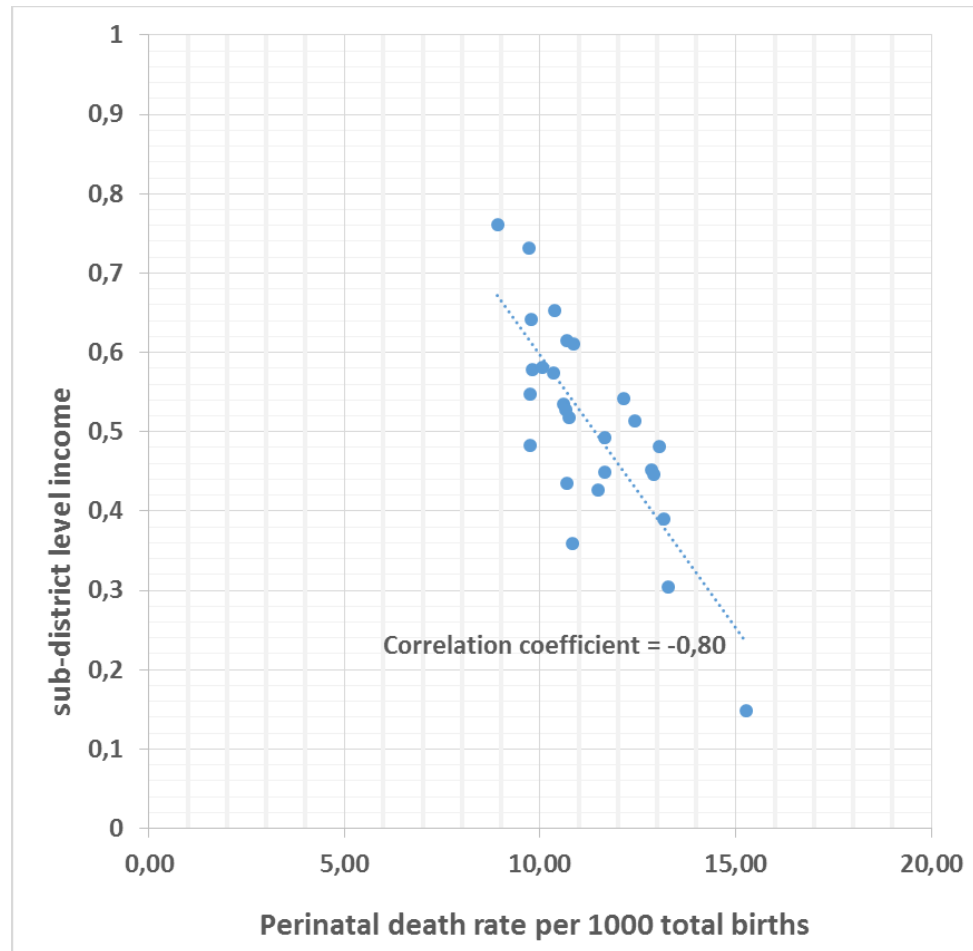
# Results

1. IDF **2014-2016**: 545 502 total births
2. IDF **Perinatal mortality**: **11.5 /1000**  
(10.4/1000 in Metropolitan France)
3. Variation from **8.9** to **15.3 /1000** among sub-districts: **significant excess** in 4 (where 2 located in Seine St Denis district), linked to **income level**
4. Coding practices / obesity and diabetes vary

# Inter sub-district Perinatal mortality Variation

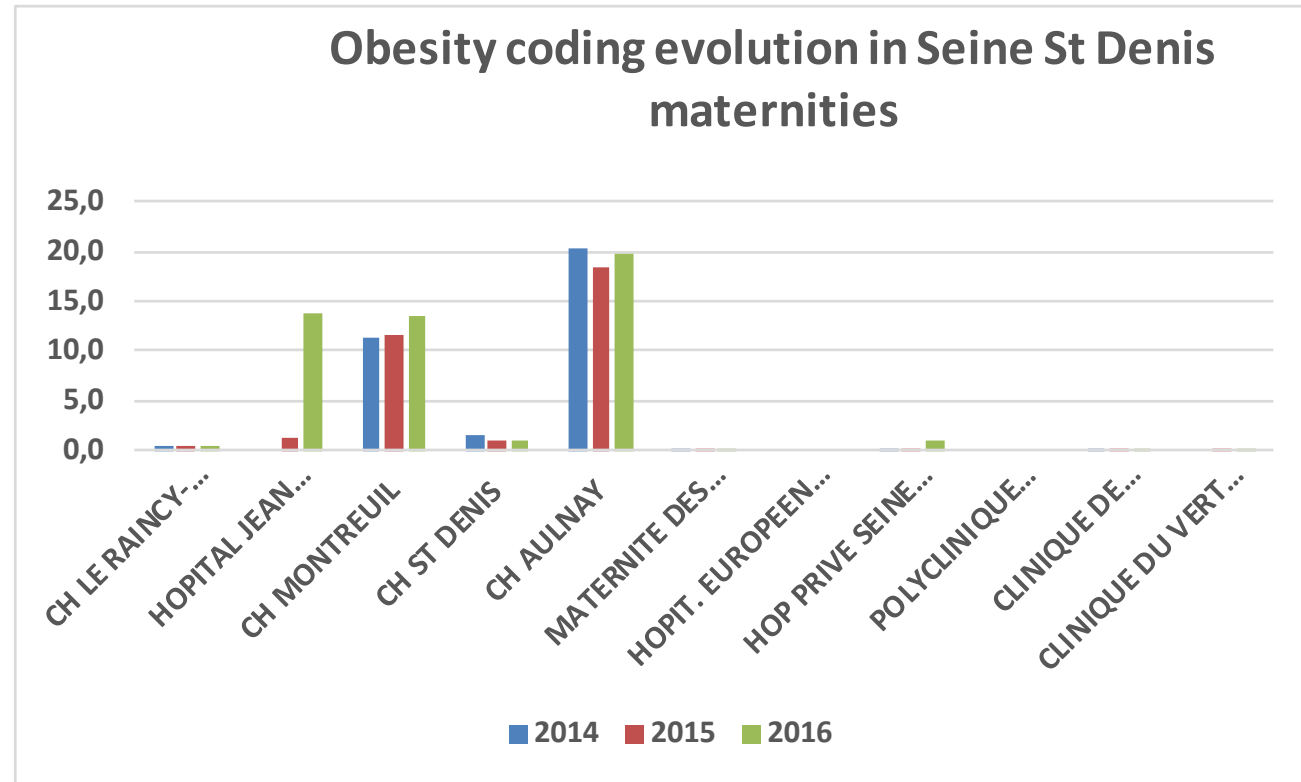


# Perinatal mortality increases when income level decreases



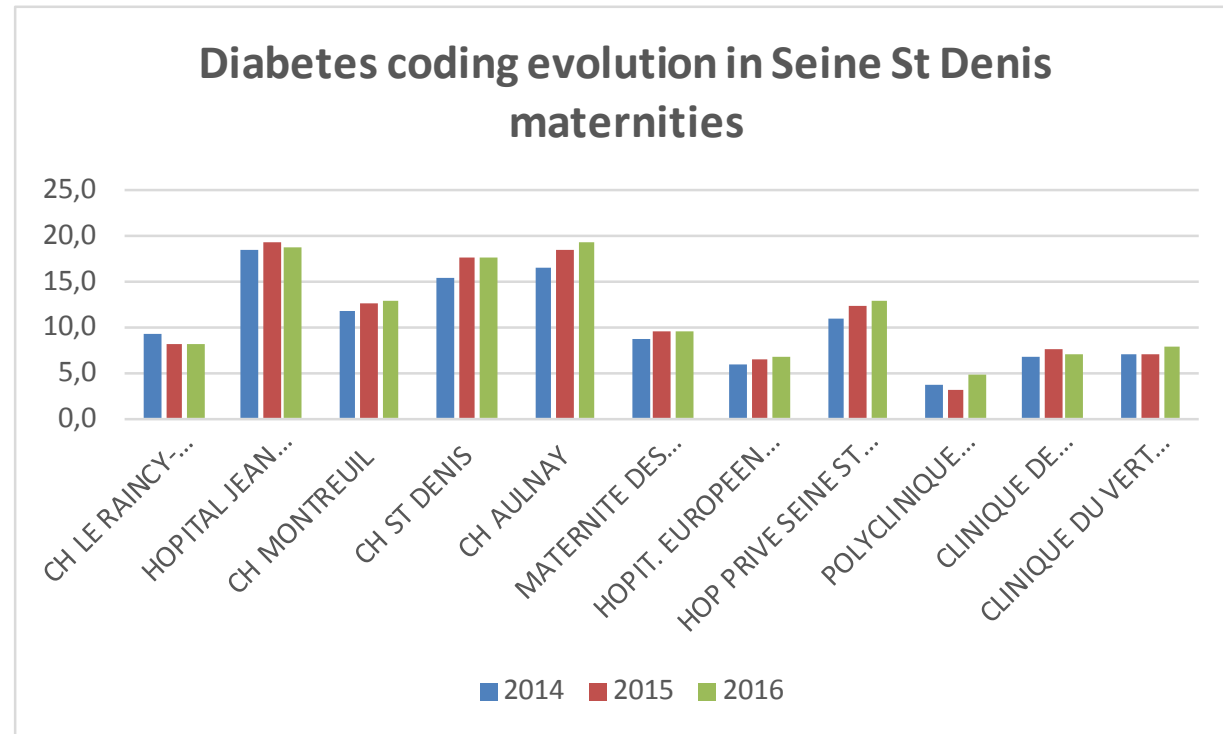
# Obesity coding variation and evolution

Obesity coding			
variation statistics	2014	2015	2016
Mean IDF	3,5	3,9	4,5
Minimum IDF	0,0	0,0	0,0
Maximum IDF	20,3	18,3	19,9
Q1 IDF	0,0	0,1	0,0
Q2 IDF (median)	0,2	0,4	0,6
Q3 IDF	2,5	2,5	3,0



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# Discussion

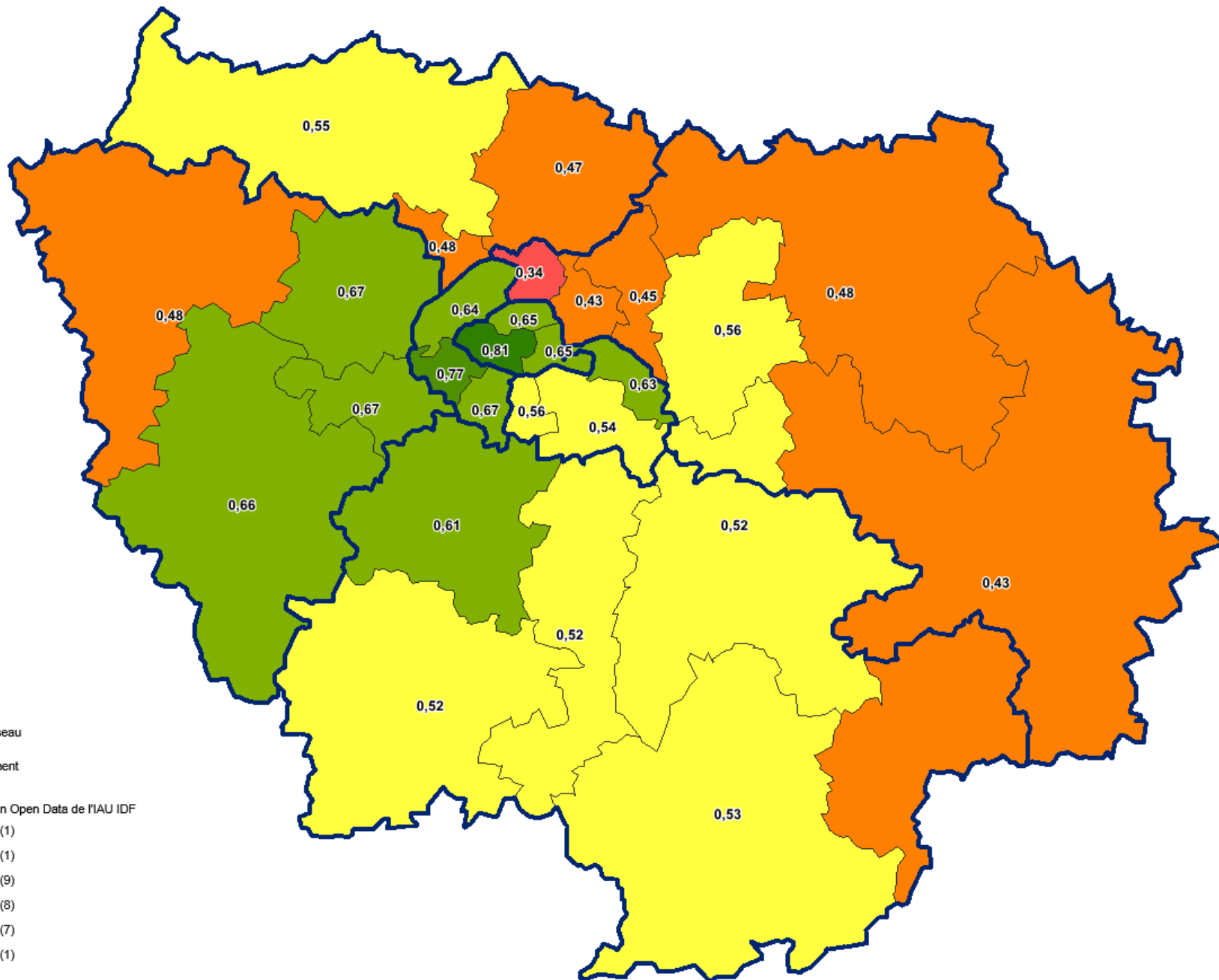
- Perinatal mortality rate comparison with other countries is difficult even in EU (stillbirths include spontaneous intra-uterine ou intrapartum deaths and pregnancy termination for maternal or foetal anomaly) *cf EuroPeristat*
- Risk factors monitoring showed some large variations in coding (or recording)...
- Slightly improved over the recent years in all the region
- Even among maternity units targeted by special action (in Seine St Denis)



# Conclusion

- Other areas of the region face higher risks and would benefit from specific actions aimed at reducing perinatal mortality
- Quality of pre-delivery risk factors coding in delivery stays has to be improved...
- > To allow monitoring of high-risk pregnant women optimal care and actions assessment.





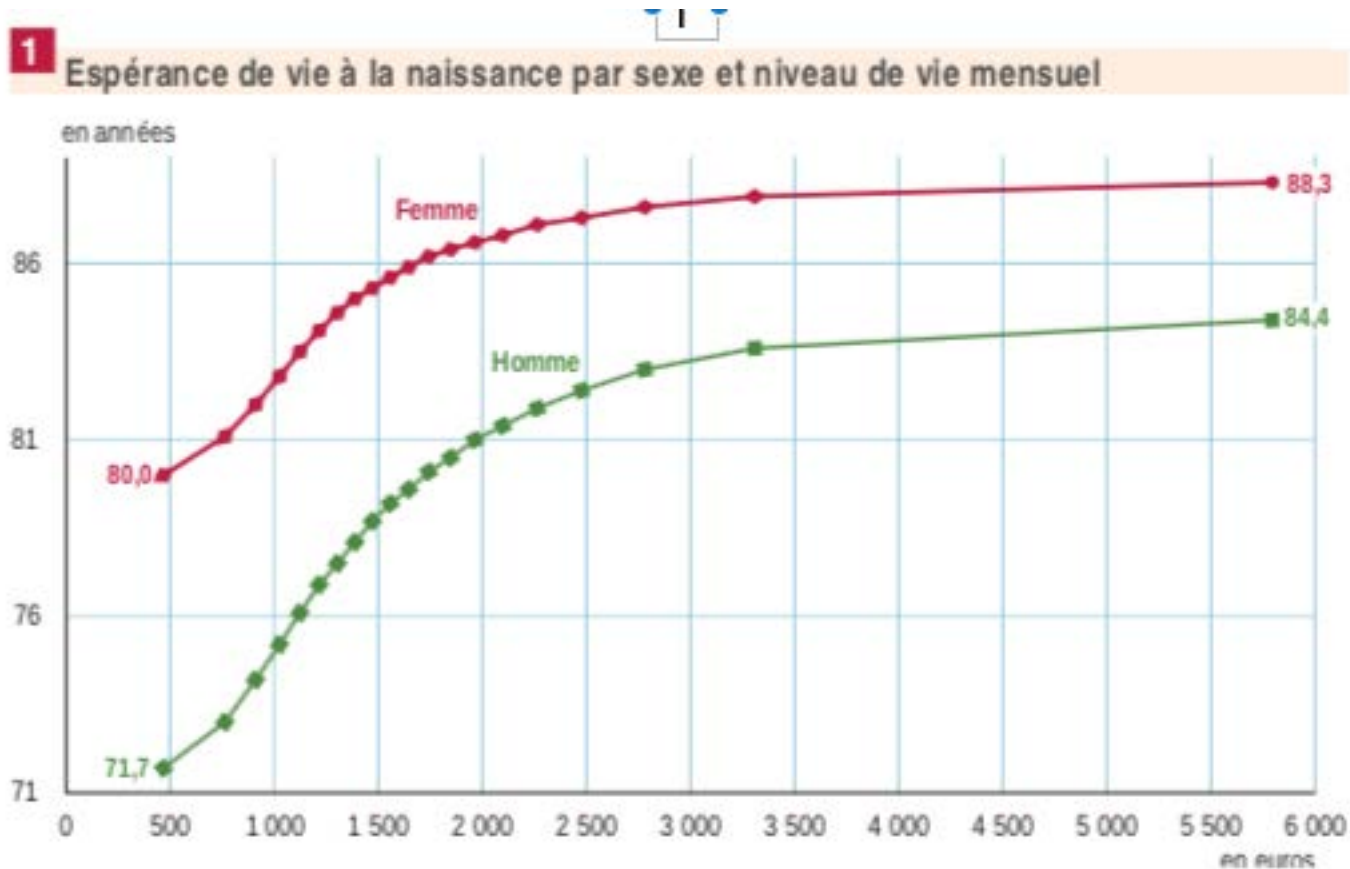
Territoire réseau

Arrondissement

IDH2 2013  
à partir des données en Open Data de l'IAU IDF

- [0,8 à 0,9[ (1)
- [0,7 à 0,8[ (1)
- [0,6 à 0,7[ (9)
- [0,5 à 0,6[ (8)
- [0,4 à 0,5[ (7)
- [0,3 à 0,4[ (1)

# Life expectancy and standard of living



Data Source: INSEE (vital statistics and census data ) 2018