



# PERINAT-ARS-IDF



## Caesarean delivery practice heterogeneity, appropriateness and efficiency in the Ile de France (IDF Paris region)

C. Crenn Hebert <sup>a b c</sup>, C. Menguy <sup>b</sup>, M. Martinowsky <sup>c</sup>,  
E. Lebreton <sup>d</sup>, L. Anzelin <sup>d</sup>, M. Hanf <sup>d</sup>

<sup>a</sup> Maternity dept, University hospital Louis Mourier, Assistance Publique  
Hôpitaux de Paris,

<sup>b</sup> Perinat-ARS-IDF, Paris, France, <sup>c</sup> ARS Ile de France

<sup>d</sup> SESAN, Paris, France





# Outline (work in progress)

- Background
- Objectives
- Method
- Discussion
- Future work



# Background

- OMS statement in 2014 about Caesarean section
- Wide variations in european countries in CS rate
- In France
  - french national evidence-based guidelines about term elective Caesarean section (CS) in 2012
  - appropriateness program implementation on a voluntary base
- In IDF
  - caesarean section rate > other regions
  - larger variations / same level maternities CS rate
  - => regional health authority ARS-IDF focus on CS rate

# WHO statement

Since 1985 caesarean sections have become increasingly common in both developed and developing countries. ...

**When medically necessary,** a caesarean section can effectively prevent maternal and newborn mortality.

**Other issues impact needs further studies:** mortinatalité, infant and maternal morbidity, infant health, global wellbeing, ...

- *A global reference for caesarean section rates (C-Model) a multicountry cross-sectional study. BJOG 2015 JP souza et al.*
- *Robson classification implementation manuel: a tool to monitor and compare caesarean section rates in a same setting over time and between different settings.*



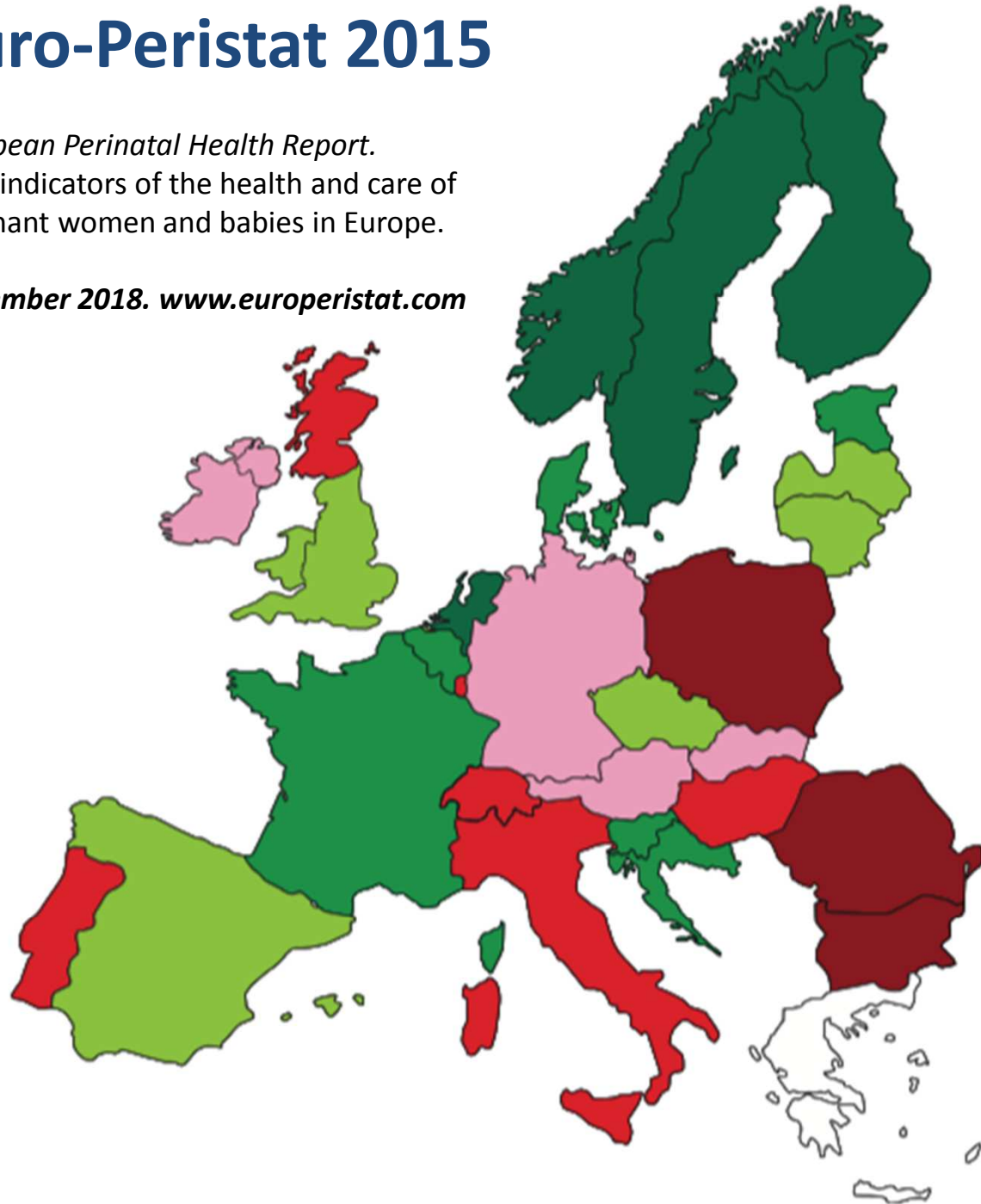
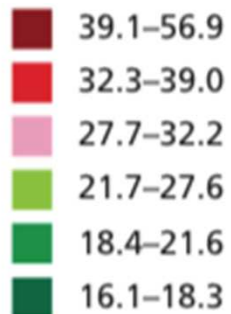
# Euro-Peristat 2015

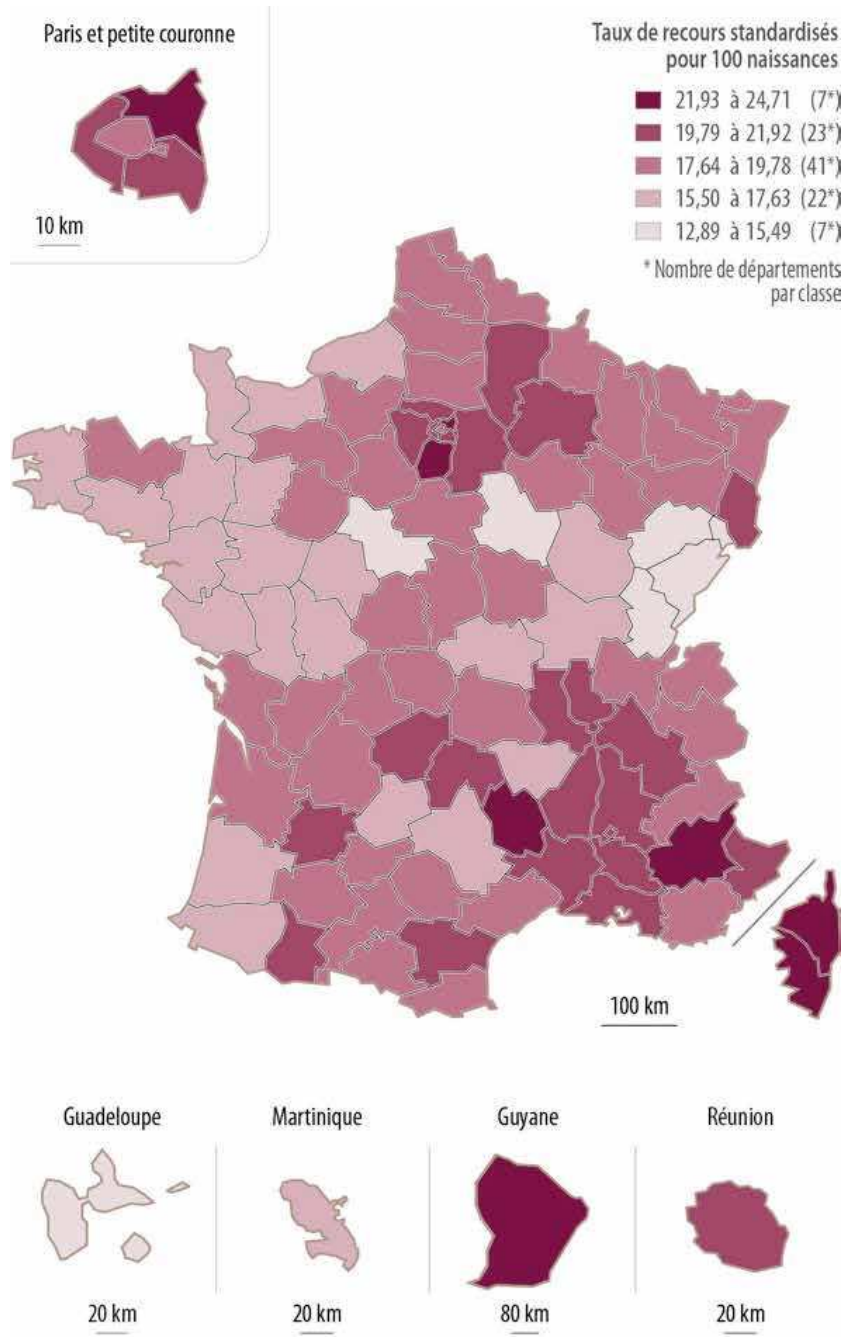
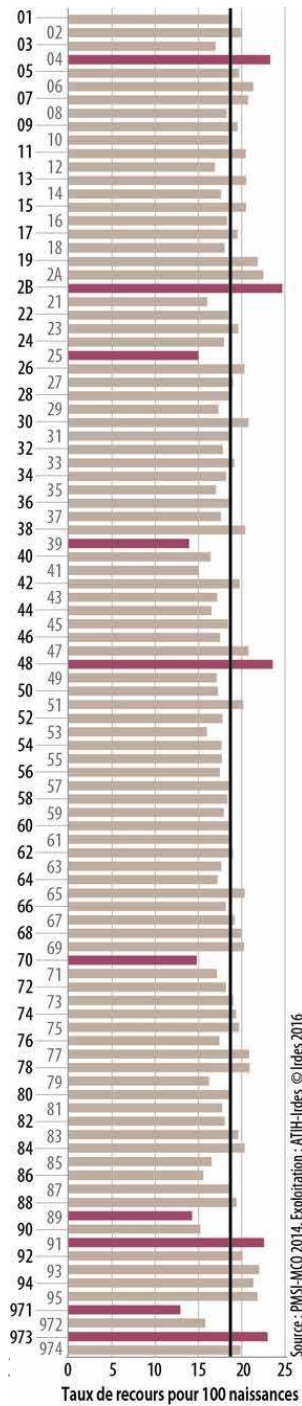
*European Perinatal Health Report.*  
Core indicators of the health and care of pregnant women and babies in Europe.

**November 2018. [www.europeristat.com](http://www.europeristat.com)**



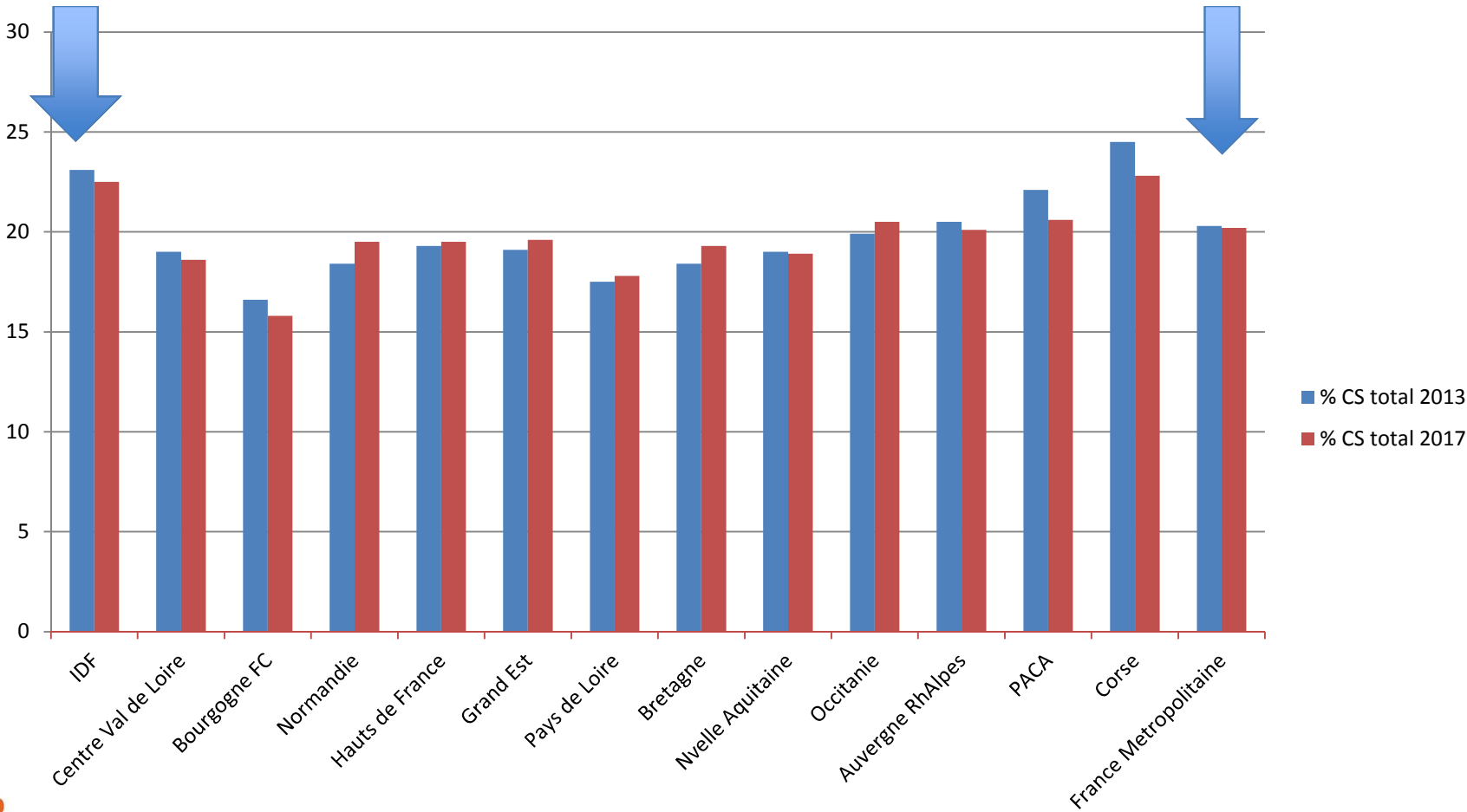
## Caesarean rate (%)





## Caesarean delivery standardized utilization rate / 100 births

# Caesarean rate evolution in France



# Guidelines HAS health quality agency 2012



La **césarienne**

*Ce que toute femme enceinte  
devrait savoir...*

**HAS**

HAUTE AUTORITÉ DE SANTÉ

PARIS NORD VAL DE SEINE

Benjamin Bichot - Claude Bernaud - Brice Benoit - Lucie Mounier - Charles Nègre

## Term elective caesarean section

- Selected indications guidelines
- Staffed decision with several professionals
- Programmation at  $\geq 39$  weeks for singleton
- Informed consent / « choosing wisely » / shared decision with patients



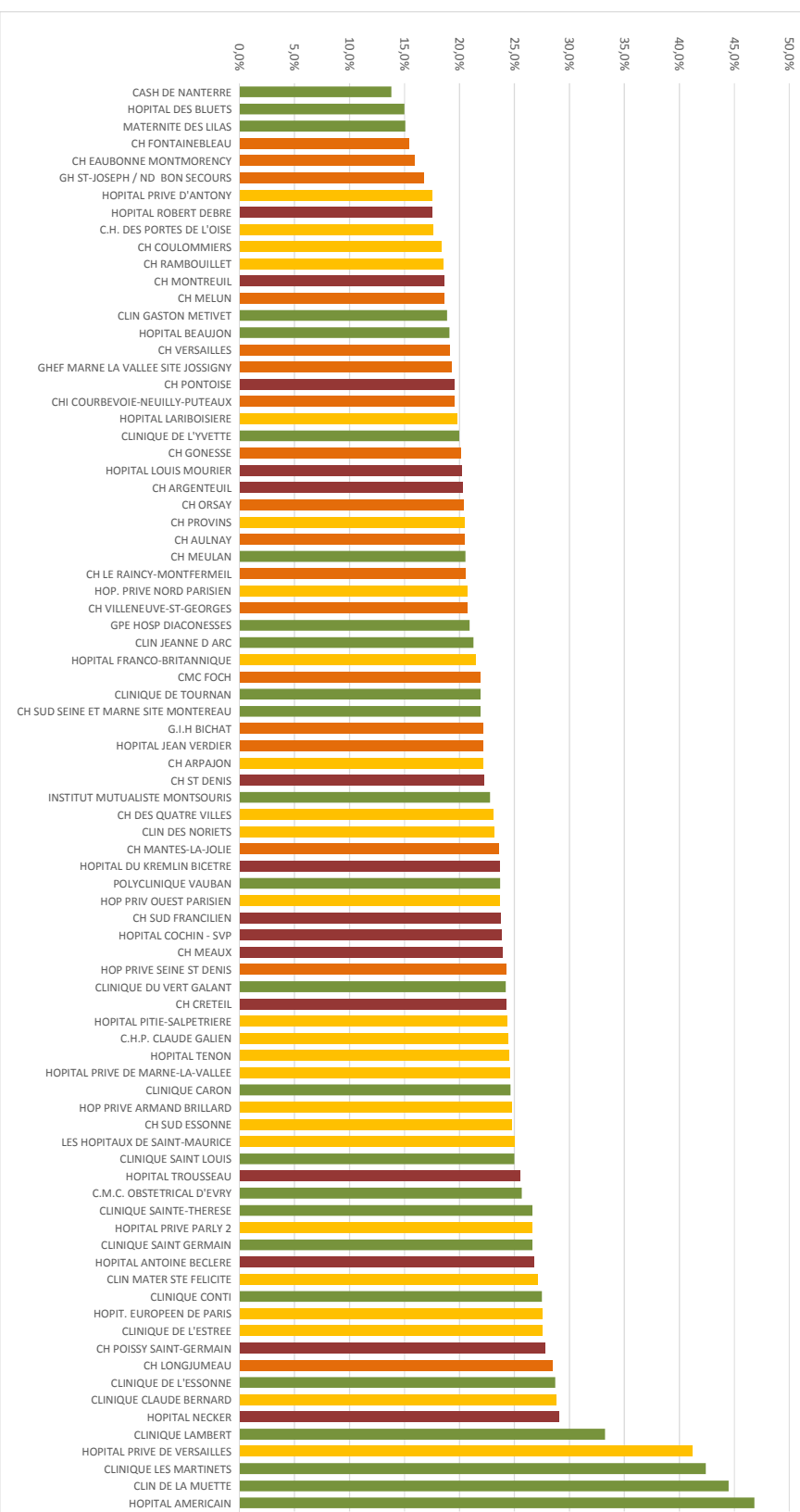


# Objectives

- To identify outliers maternities (either with an excess or deficiency of caesarean section rate)
- In view to reduce the gaps
- Within an active quality approach

# Method-1: CS rate variation in IDF (2017)

Variation du taux de césarienne par établissement (IDF 2017)  
 (vert : types I ; jaune : types II.A ; orange : types II.B ; rouge : types III)



Type I

Type II.A

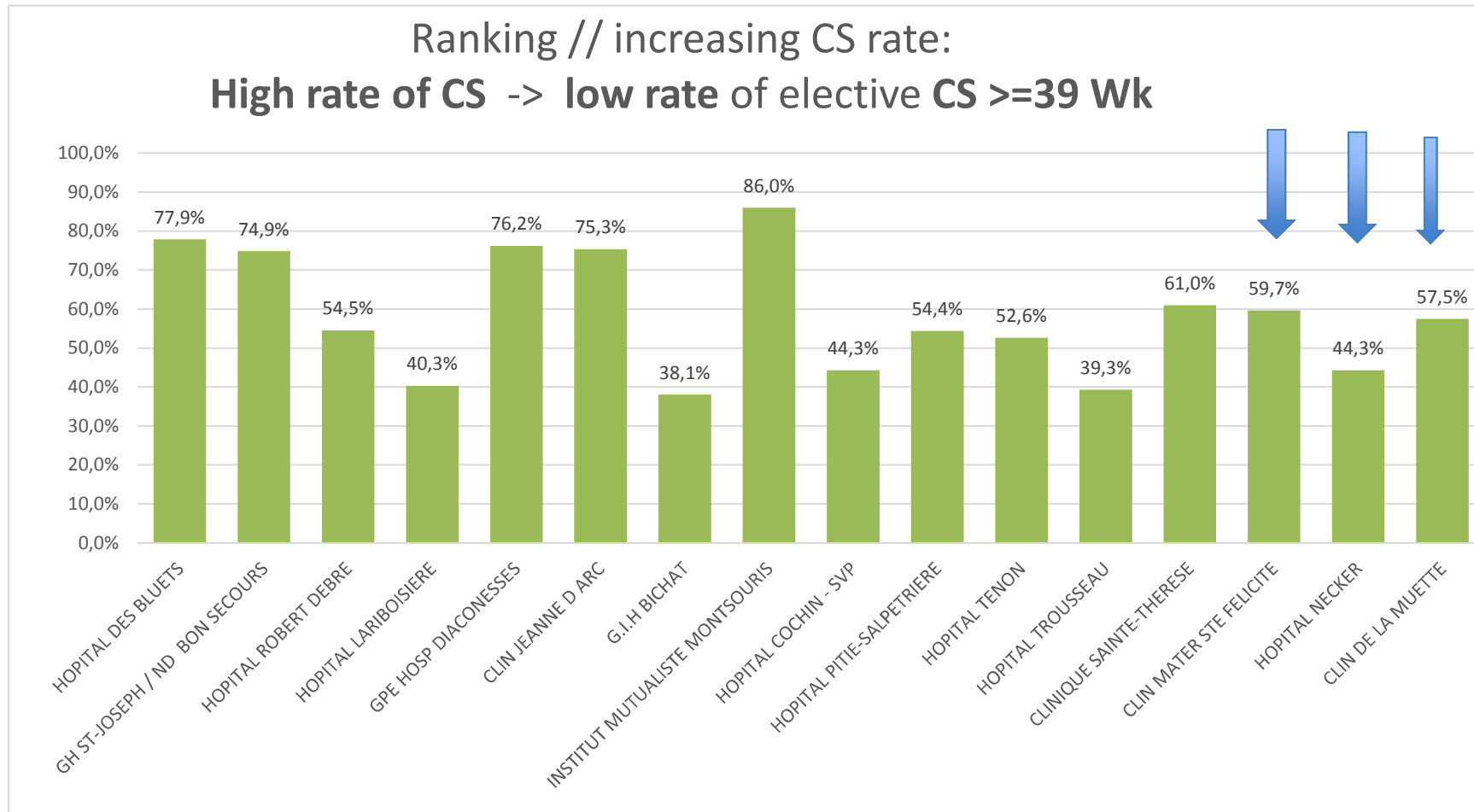
Type II.B

Type III

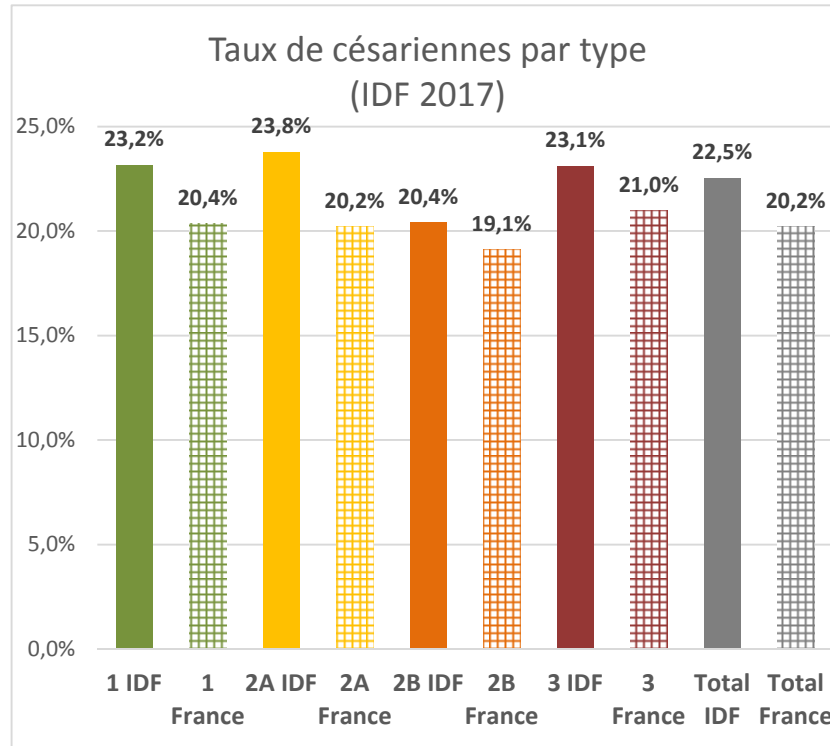


Source ATIH PMSI Exploitation Perinat-ARS-IDF

# Ex Quality criteria in Paris maternities: Term of elective CS $\geq$ 39 wk / singleton



# Method-2



- Maternities with CS rate:
    - < - 1,5 DS: none
    - > + 1,5 DS / 2017
- Metropolitan France
- >Type I : 28,55%
  - >Type IIA: 26,45%
  - >Type IIB: 24,39%
  - >Type III: 25,69%

*Validated by Regional care appropriateness improvement committee*



# Method-3

- We focused on 11 maternities/ 83 in IDF
  - 7 Private 4 Public above treshold for Type
  - 2/25 Types I
  - 5 /25 Types IIA
  - 1/18 Types IIB
  - 3/15 Types III (3 university)





## Method-4

- Each maternity received own CS and obstetrical practice **profiles** in november 2018
- Visits on site with Obstetricians, Midwives, Anesthesists, Direction, Quality dept during 1st trimester 2019: what do they want to change in their practices?
- Each participant presented their maternity action plan in a meeting in june 2019

## Ex: Maternity CS profile

Hôpital Louis Mourier

Type 3

920100047

Position de votre établissement par rapport aux établissements de type 3 de France métropole (2017)

### Activité césarienne

Lecture :



Césariennes (%)

Césarienne programmée (%)

Césarienne non programmée (%)

Activité césarienne dans une population "à bas risque" (à Terme ( $\geq 37$ ), Singleton, Vertex, sans utérus cicatriciel)

Césariennes (%)

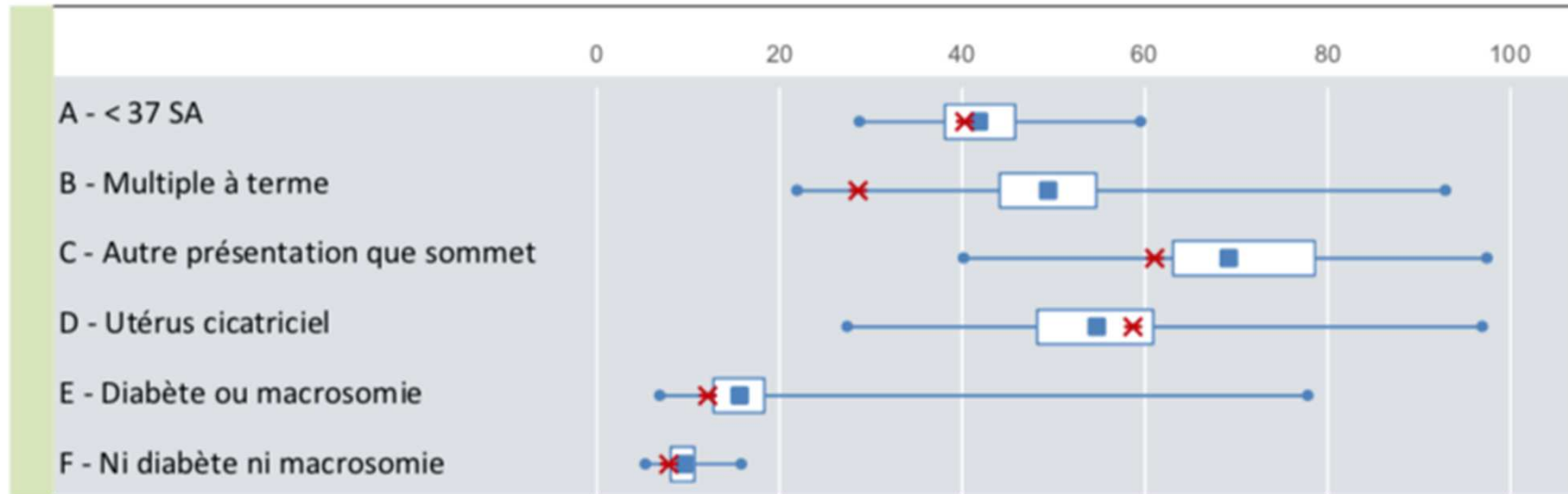
Répartition par terme des césariennes programmées pour les accouchements uniques

< 37 SA (%)

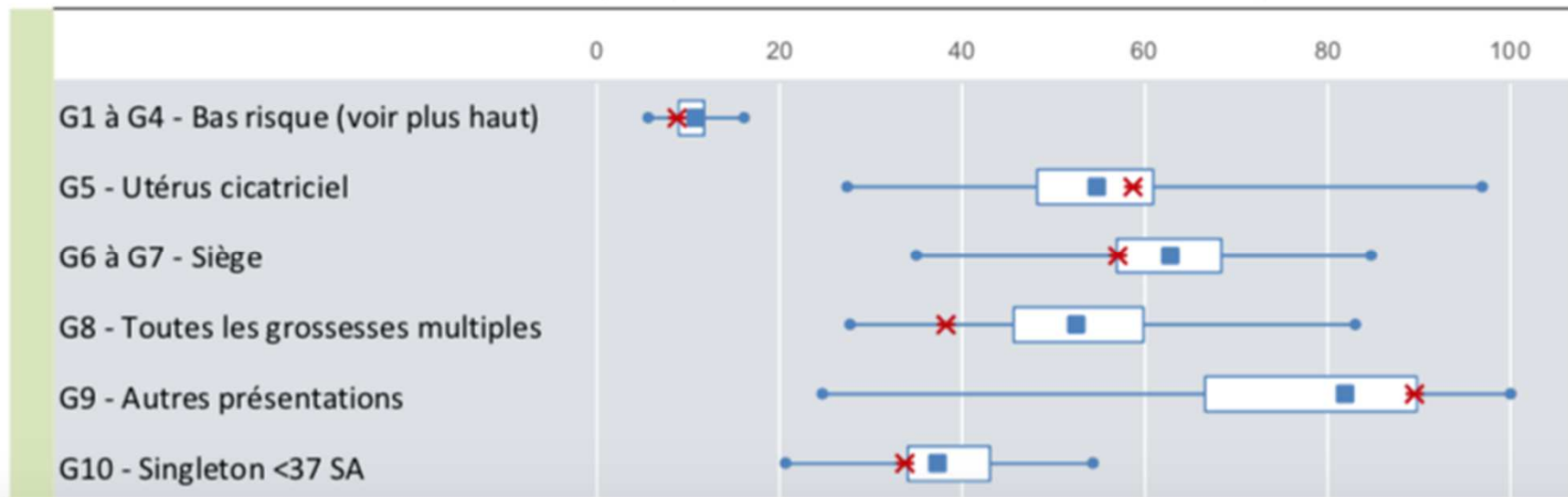
37-38 SA (%)

$\geq 39$  SA (%)

### Césarienne selon les situations cliniques (ref : HAS - voir détails des groupes p.2)



### Césarienne selon les situations cliniques (ref : Robson - voir détails des groupes p.3)







# Method-5

- Each maternity received own CS and obstetrical practice profiles in november 2018
- Visits on site with Obstetricians, Midwives, Anesthesists, Direction, Quality dept during 1st trimester 2019: « **what do they want to change in their practices ?** »
- Each participant presented their maternity tion plan in a meeting in june 2019

## Ex: Quality Action plans

- Clinical Pathway elaboration for elective CS :
  - with special mention for CS on maternal request
- Appropriate term for elective CS:
  - Operating room better organisation + term control
- Shared decision with patient:
  - information improvement (documents, enquiry, ..)
- Multidisciplinary Staffed decision
- Safety improvement in labour ward: obstetrician H24
- Professional audit (internal benchmark, peer review of appropriateness, ..)

# Discussion

- How to measure heterogeneity? Which maternities are really outliers?
- Taking case-mix into account ?
- How to ensure maternal and perinatal safety with CS rate appropriateness approach?



# Discussion-1

## Heterogeneity:

	France 2017	IDF 2017
Nb of stays with CS:	144 947	• 39 560
Mean CS rate:	20,2%	• 22,5%
Minimum:	7,6%	• 13,8%
Maximum:	46,8%	• 46,8%
Ratio (max/min):	6,16	• 3,39
Ratio (P90-P10):	1,66	• 1,62
Global StDev:	4,48	• 5,92

# Discussion-2

- Taking case-mix into account ?
  - Impact of **private health insurance** on a public healthcare system. Milcent C , Zbiri s. Health economics 2019 (submitted)
  - Cesarean delivery rate and **staffing levels** of the maternity unit. Zbiri S, et al. PloS One 2018.
  - **Prenatal care and socioeconomic status**: effect on cesarean delivery. Health Economics Review. 2018
- How to ensure maternal and perinatal safety with CS rate appropriateness approach?

# Discussion-3

Figure C10.2 Percentages of births by type of caesarean delivery in 2015

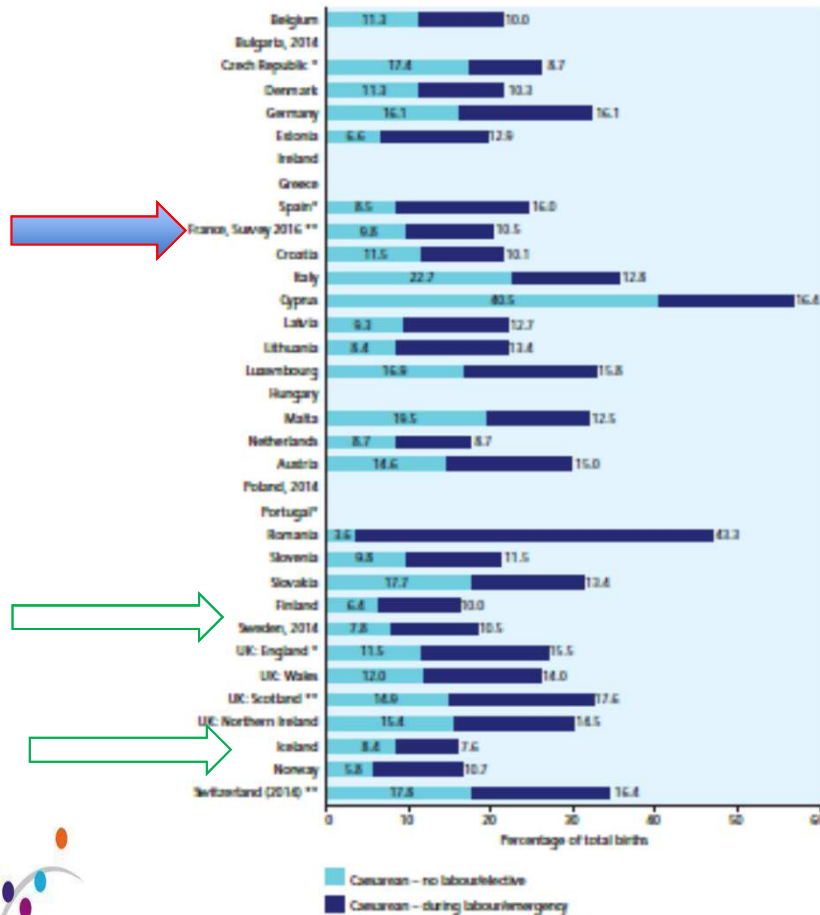
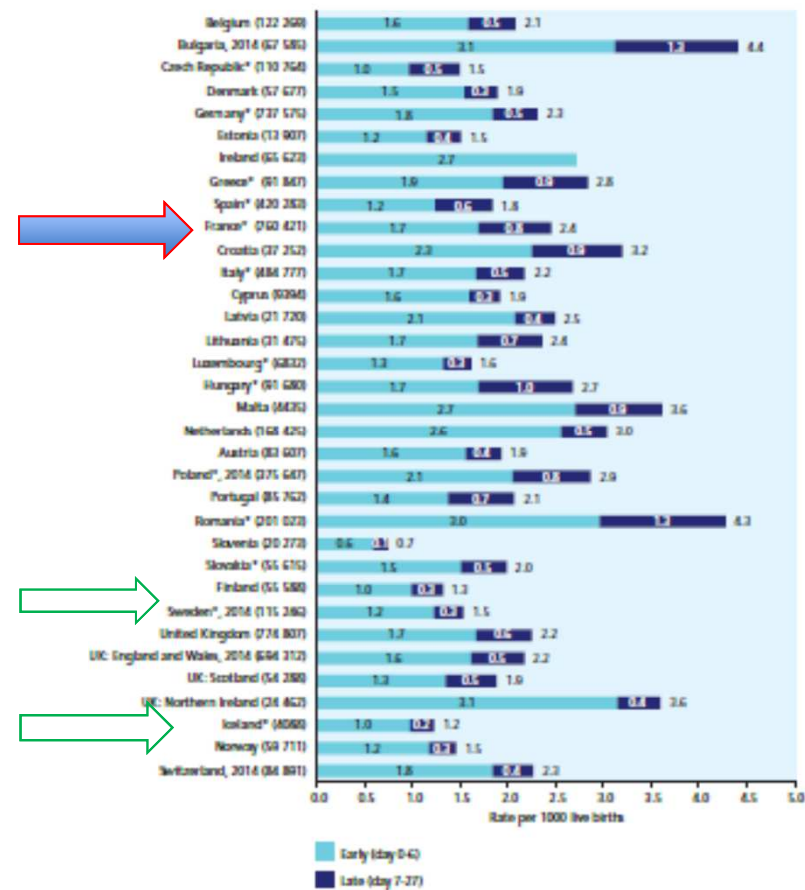


Figure C2.1 Early and late neonatal mortality rates at and after 22 weeks of gestation in 2015



**Scandinavian countries: low CS rate and low neonatal mortality rate**  
*Data from EUROPERISTAT 2015*



# Future works

- Quality Process with IDF maternities
  - Action plans reports: next step in january 2010
  - Involve maternities with lowest CS rate in a regional working group
  - Experience sharing final meeting september 2020
- Multilevel analysis CS rate?
- Regional epidemiological data on morbidity (perinatal and maternal) development



# PERINAT-ARS-IDF



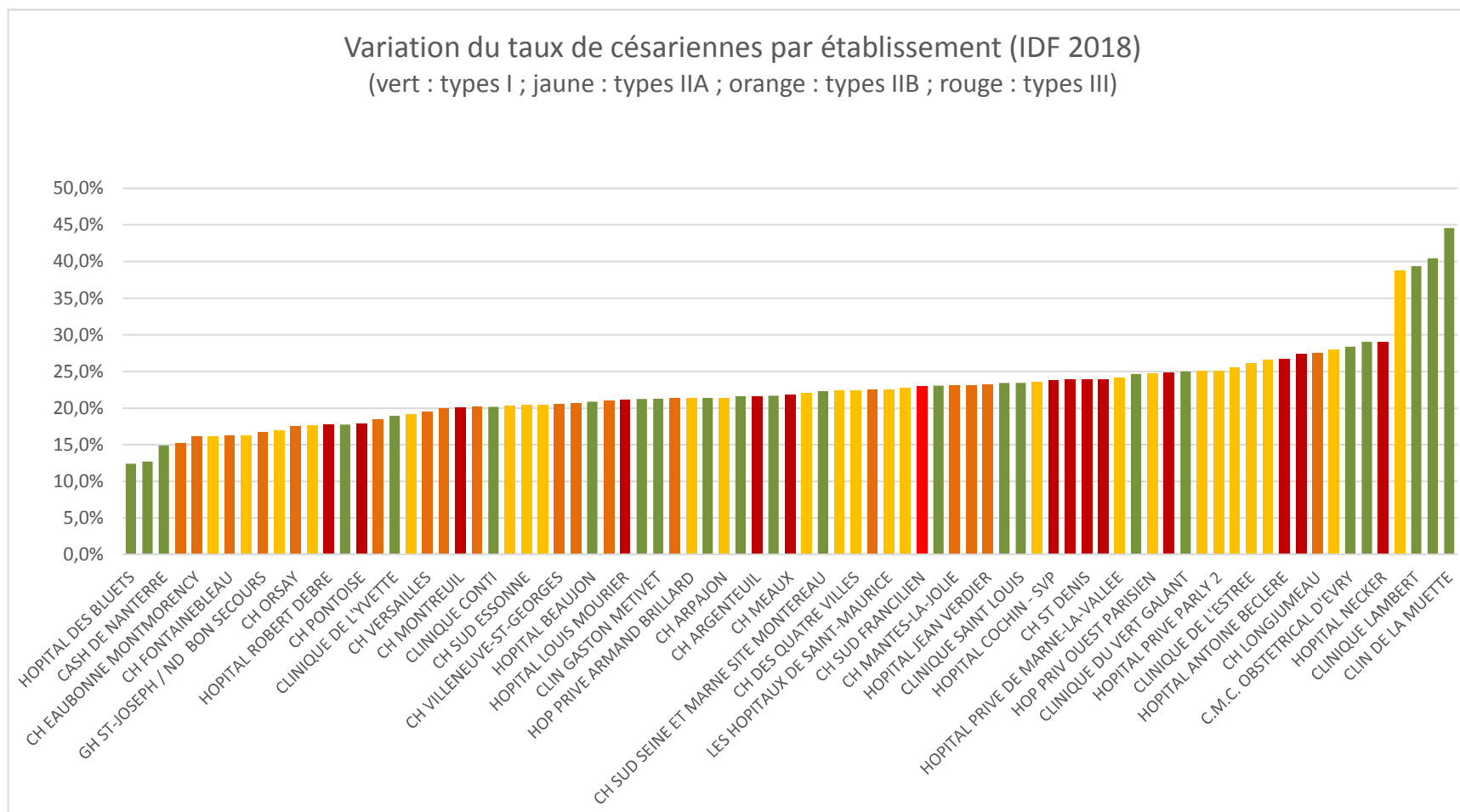
[catherine.crenn-hebert@aphp.fr](mailto:catherine.crenn-hebert@aphp.fr)

[www.perinat-ars-idf.org](http://www.perinat-ars-idf.org)





# CS rate variation in IDF (2018)

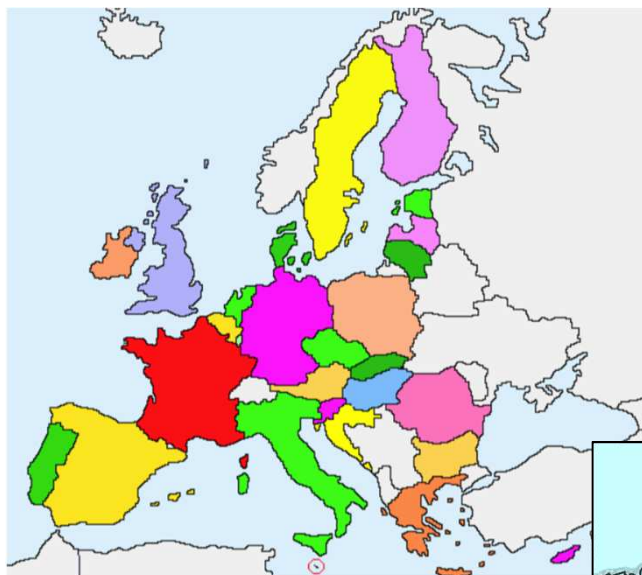


Type I

Type IIA

Type IIB

Type III

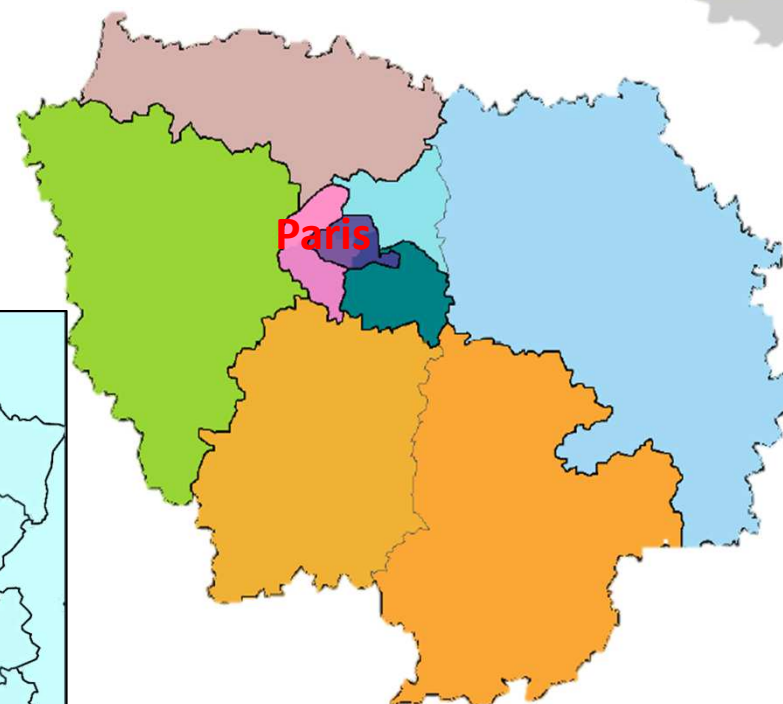


**European Union**

# IDF region



**Metropolitan France**  
**13 Regions**  
**67 Million inhabitants**  
**712000 births**



**Paris-Ile de France Region**  
**8 districts, 1276 municipalities**  
**12 Million inhabitants (18%)**  
**3 Million women 15-49 y old**  
**175,000 births (25%)**