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

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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: mortality, 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.europeperistat.com*
Caesarean delivery standardized utilization rate / 100 births
Caesarean rate evolution in France

Source ATIH (PMSi) https://www.scansante.fr/applications/indicateurs-de-sante-perinatale
Guidelines HAS health quality agency 2012

Term elective caesarean section

- Selected indications guidelines
- Staffed decision with several professionnals
- 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
Variation du taux de césarienne par établissement (IDF 2017)
Ex Quality criteria in Paris maternities:
Term of elective CS >= 39 wk / singleton

Ranking // increasing CS rate:
High rate of CS -> low rate of elective CS >=39 Wk
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 comittee
Method-3

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

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

Lecture :

Min  Vous  Q1  Q2  Q3  Max

Activité césarienne

Césariennes (%)

Césarienne programmée (%)

Césarienne non programmée (%)

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

Césariennes (%)

Répartition par terme des césariennes programmées pour les accouchements uniques

< 37 SA (%)

37-38 SA (%)

≥ 39 SA (%)
Césarienne selon les situations cliniques (ref : HAS - voir détails des groupes p.2)

A - < 37 SA
B - Multiple à terme
C - Autre présentation que sommet
D - Utérus cicatriciel
E - Diabète ou macrosomie
F - Ni diabète ni macrosomie

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

G1 à G4 - Bas risque (voir plus haut)
G5 - Utérus cicatriciel
G6 à G7 - Siège
G8 - Toutes les grossesses multiples
G9 - Autres présentations
G10 - Singleton <37 SA
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 action 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:

<table>
<thead>
<tr>
<th></th>
<th>France 2017</th>
<th>IDF 2017</th>
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</thead>
<tbody>
<tr>
<td>Nb of stays with CS:</td>
<td>144,947</td>
<td>• 39,560</td>
</tr>
<tr>
<td>Mean CS rate:</td>
<td>20.2%</td>
<td>• 22.5%</td>
</tr>
<tr>
<td>Minimum:</td>
<td>7.6%</td>
<td>• 13.8%</td>
</tr>
<tr>
<td>Maximum:</td>
<td>46.8%</td>
<td>• 46.8%</td>
</tr>
<tr>
<td>Ratio (max/min):</td>
<td>6.16</td>
<td>• 3.39</td>
</tr>
<tr>
<td>Ratio (P90-P10):</td>
<td>1.66</td>
<td>• 1.62</td>
</tr>
<tr>
<td>Global StDev:</td>
<td>4.48</td>
<td>• 5.92</td>
</tr>
</tbody>
</table>
Discussion-2

• Taking case-mix into account?
  - Impact of private health insurance on a public healthcare system. Milcent C, Zbiri S. Heath economics 2019 (submitted)
  - Prenatal care and socioeconomics status: effect on cesarean delivery. Health Economics Review. 2018

• How to ensure maternal and perinatal safety with CS rate appropriateness approach?
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 morbimortality (perinatal and maternal) development
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CS rate variation in IDF (2018)

Variation du taux de césariennes par établissement (IDF 2018)
(vert : types I ; jaune : types IIA ; orange : types IIB ; rouge : types III)
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%)