



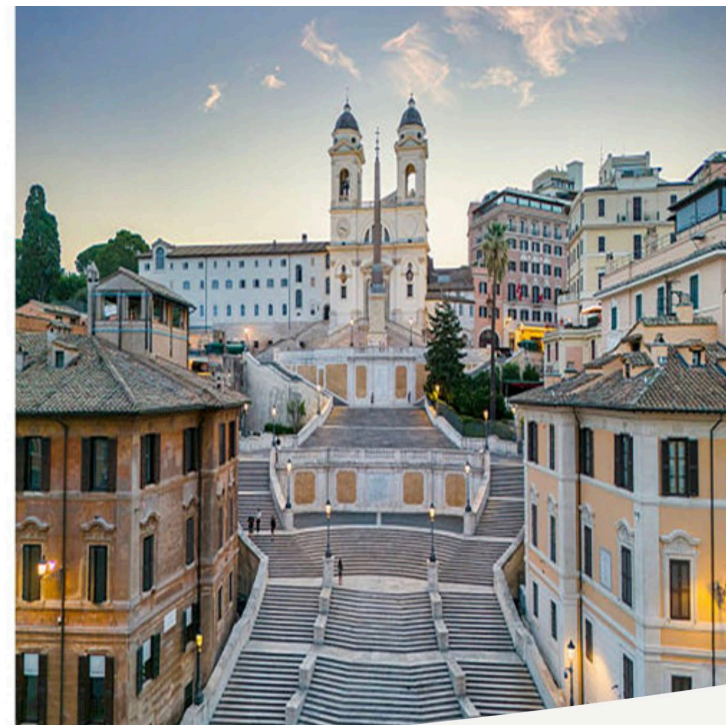
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Classification of French maternity units into levels of maternal critical care : a national study

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No conflict of interest

Background

- **In France:**

Classification of maternity facilities based on local availability of neonatal critical care without taking into account the maternal dimension.
(1998 Perinatal Care Decree)

EPIPAGE French study:

18% of women with very preterm birth and severe maternal morbidity (preeclampsia) delivered in a maternity unit without adult critical care facilities.

(Blanc J et al. Eur J Obstet Gynecol Reprod Biol. 2025)

- Emerging evidence of increased maternal morbidity when resources are mismatched to individual risk

Osei-Poku GK et al., AJOG 2024

- **In the USA:**

2015 consortium classification of maternity units by maternal critical care resource level

(revised to four levels in 2019)

AJOG 2019 Dec;221(6):B19-B30

Background

Hypothesis:

Including maternal critical care resources into the French classification of maternity facilities would enable the appropriate allocation of care for pregnant women based on their baseline risk level.

Objectives

To propose a classification of maternity units based on local maternal critical care (MCC) resources in France

To describe

- In what MCC level of maternity unit women give birth
- Potential inadequacy between women's baseline risk and the MCC resources of the maternity unit where they give birth



Enquête Nationale Périnatale

Methods

- **Data source: 2021 French National Perinatal Survey = population-based data**

N=468 maternity units, n=12,473 women

- **Development of a classification of MCC levels for maternity units based on**
 1. The availability of **adult critical care units**
ICU, high-dependency unit (HDU), and a 24-hour post-anesthesia care unit (PACU)
 2. The **medical staffing resources** related to maternal emergencies within the maternity unit: Ob-Gyn and anesthesiologist
- **Maternal baseline risk severity in 4 classes:**
 - 0: no comorbidity
 - 1: minor comorbidity (not life-threatening)
 - 2: moderate comorbidity (potentially life-threatening)
 - 3: severe comorbidity (life-threatening)

Results

Proposed classification of maternity units according to critical care resources

I: No adult ICU, HDU, or 24-hour PACU	I	No on-site 24-hour adult critical care
II: 24-hour HDU and/or PACU No adult ICU	IIA	No on-site anesthesiologist 24/7
	IIB	On-site anesthesiologist 24/7, not dedicated No on-site obstetrician 24/7
	IIC	On-site anesthesiologist 24/7, not dedicated On-site obstetrician 24/7
	IID	Dedicated on-site anesthesiologist 24/7 On-site obstetrician 24/7
III: Adult ICU	IIIA	No on-site anesthesiologist 24/7
	IIIB	On-site anesthesiologist 24/7, not dedicated No on-site obstetrician 24/7
	IIIC	On-site anesthesiologist 24/7, not dedicated

Proposed classification of maternity units according to critical care ressources

I: No adult ICU, HDU, or 24-hour PACU	I	No on-site 24-hour adult	2.4% of maternity units
	IIA	No on-site anesthesiologist	10.7% of maternity units
II: 24-hour HDU and/or PACU No adult ICU	IIB	On-site anesthesiologist 24/7, not dedicated No on-site obstetrician 24/7	2.4% of births
	IIC	On-site anesthesiologist 24/7, not dedicated On-site obstetrician 24/7	
	IID	Dedicated on-site anesthesiologist 24/7 On-site obstetrician 24/7	
	IIIA	No on-site anesthesiologist 24/7	
III: Adult ICU		On-site anesthesiologist 24/7, dedicated	9% of maternity units
	IIIB	No on-site obstetrician 24/7	4% of births
	IIIC	On-site anesthesiologist 24/7, not dedicated	

Proposed classification of maternity units according to critical care ressources

I: No adult ICU, HDU, or 24-hour PACU	I	No on-site 24-hour adult critical care
	IIA	No on-site anesthesiologist 24/7
	IIB	On-site anesthesiologist 24/7, not dedicated No on-site obstetrician 24/7
	IIC	On-site anesthesiologist 24/7, not dedicated On-site obstetrician 24/7
II: 24-hour HDU and/or PACU No adult ICU	IID	Dedicated on-site anesthesiologist 24/7 On-site obstetrician 24/7
	IIIA	No on-site anesthesiologist 24/7
	IIIB	On-site anesthesiologist 24/7, not dedicated No on-site obstetrician 24/7
	IIIC	On-site anesthesiologist 24/7, not dedicated
III: 44.9% of maternity units 60.0% of births		

Maternal baseline risk and place of birth

- **Maternal baseline risk class 2 and/or 3: → 8.4% of women (n=1,174)**
 - BMI $>35 \text{ kg/m}^2$ (n=574)
 - cardiovascular condition (n=166)
 - neurological condition (n=105)
 - digestive condition (n=103)

Maternal baseline risk and place of birth

- **Maternal baseline risk class 2 and/or 3: → 8.4% of women (n=1,174)**
 - BMI >35 kg/m² (n=574)
 - cardiovascular condition (n=166)
 - neurological condition (n=105)
 - digestive condition (n=103)

- **MCC levels I, IIA, IIIA, or IIIB maternity units:**
8.7% of women with baseline risk class 2 and/or 3

- **MCC levels IIIC or IIID maternity units:**
66.2% of women with baseline risk class 2 and/or 3

Findings

In France

- 1 in 5 maternity units has no on-site access to critical care, or shows a mismatch between maternal critical care provision and staffing resources.
- About 1 in 10 pregnant women in France has a moderate to severe baseline risk
- About 10% of them give birth in a maternity unit with limited MCC resources

These results suggest a possible mismatch between baseline maternal risk level and place of birth for $\approx 5,000$ women/year

- **This study supports the need for the implementation of a classification of maternity units including maternal critical care availability.**

Strengths and limitations

Strengths

- Population-based data: quantitative overview of the national capacity of MCC levels in France
- Data on critical care and human resources
- Reliable data extracted from medical records on preexisting conditions

Limitations

- Distance between maternity unit and ICU unknown
- Factors that influence referral to a particular level of care unknown
- Classification of baseline risk severity not based on guidelines

Perspectives

- Endorsement by the relevant national professional French societies
- Implementation in clinical care organization
- Subsequent dissemination and adoption by healthcare providers
- Comprehensive list of maternal conditions for clinicians

Thank you for your attention



Objectives

To propose a classification of maternity units based on local maternal critical care (MCC) resources in France

To describe

- . In what MCC level of maternity unit women give birth
 - Overall
 - and according to their baseline risk/evolution over time
- . Potential inadequacy between women's baseline risk and the MCC resources of the maternity unit where they give birth

Methods

2021 French National Perinatal Survey = on-based data

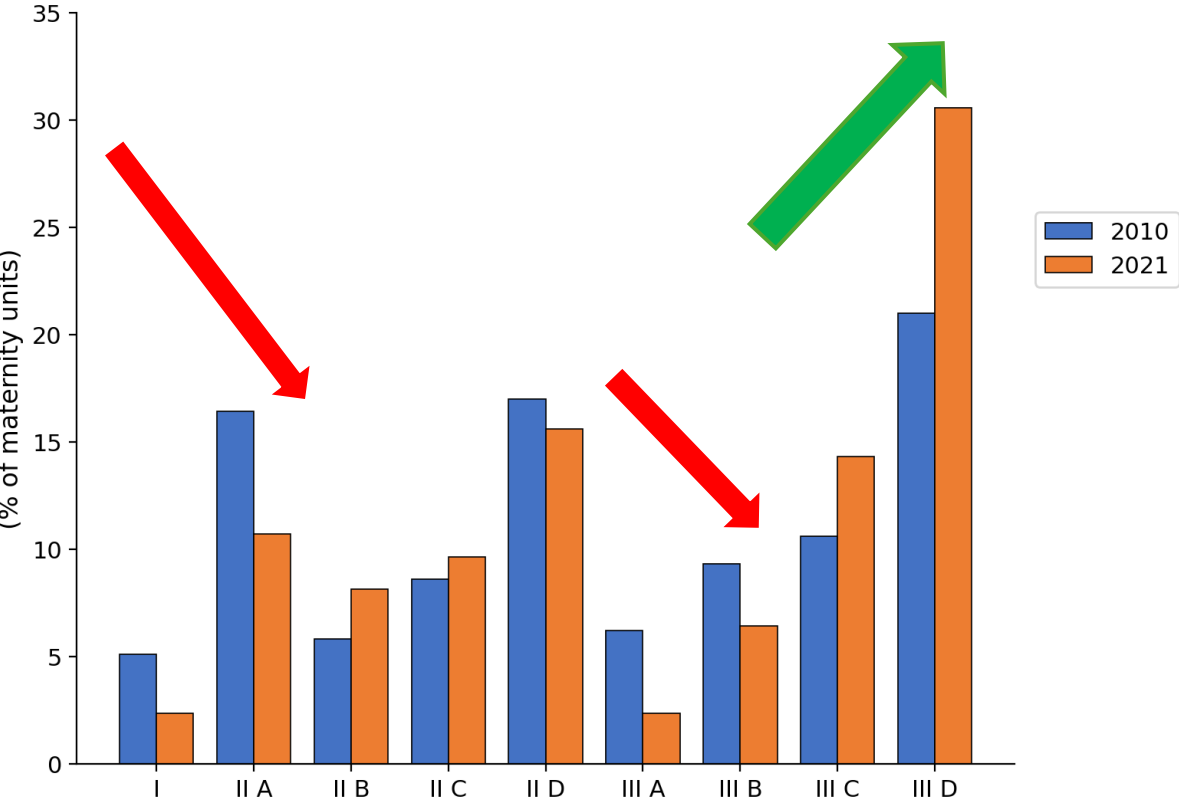
2010: N= 548 maternity units, n= 15,000 women

2021: N=468 maternity units, n=12,473 women

1. Development of a classification of MCC levels for maternity units based on

1. The availability of **adult critical care units** (ICU, high-dependency unit (HDU)), and a 24-hour post-anesthesia care unit (PACU)
2. The **medical staffing resources** related to maternal agencies within the maternity unit: presence of gyn and anesthesiologist

Distribution of maternity units in France by SCM levels in 2010 (n=548) and in 2021 (n=468)



I + IIA:
21.5 to 13.1%

IIIA + IIIB: IIIC + IIID:
15.5 to 8.8% 31.6 to 44.9%

Distribution of deliveries by SCM levels in 2010 (n=15,000) and in 2021 (n=12,473)

