

Last meeting:
Expanding indicators?
Some maternal indicators ?
PPH – increasing trends in Norway

Preliminary findings on postpartum hemorrhage in Norway 2000-2020



Preliminary findings on postpartum hemorrhage in Norway 2000-2020

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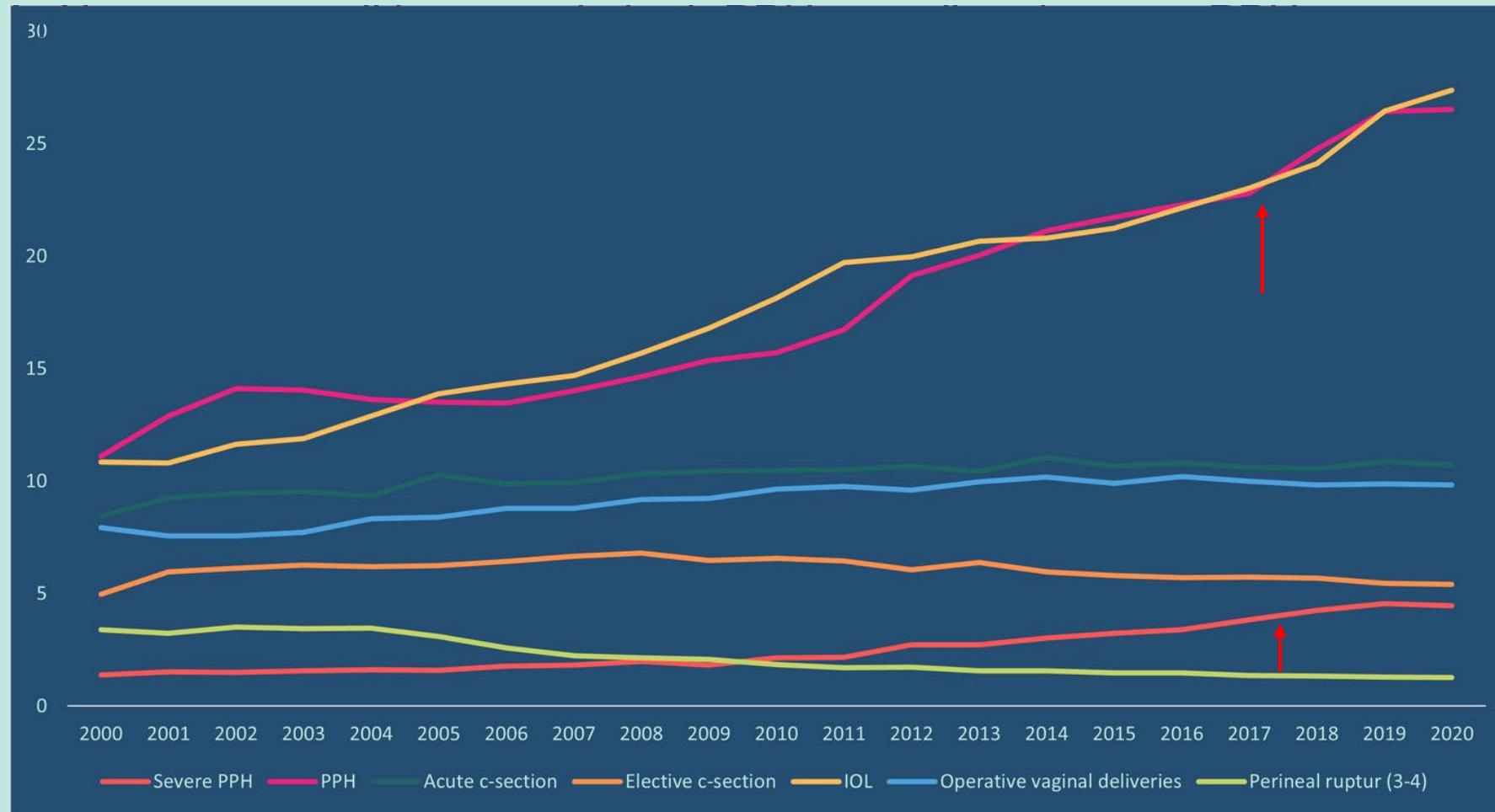
Norwegian Institute of Public Health





Background

Increasing trends of postpartum hemorrhage in high-income countries during the last decades.



Other indicators:
relatively stable (emergency and elective CS, instr. vaginal deliveries)
decreasing (ruptures gr 3-4)

Increasing induction of labor

Why the increase in PPH?

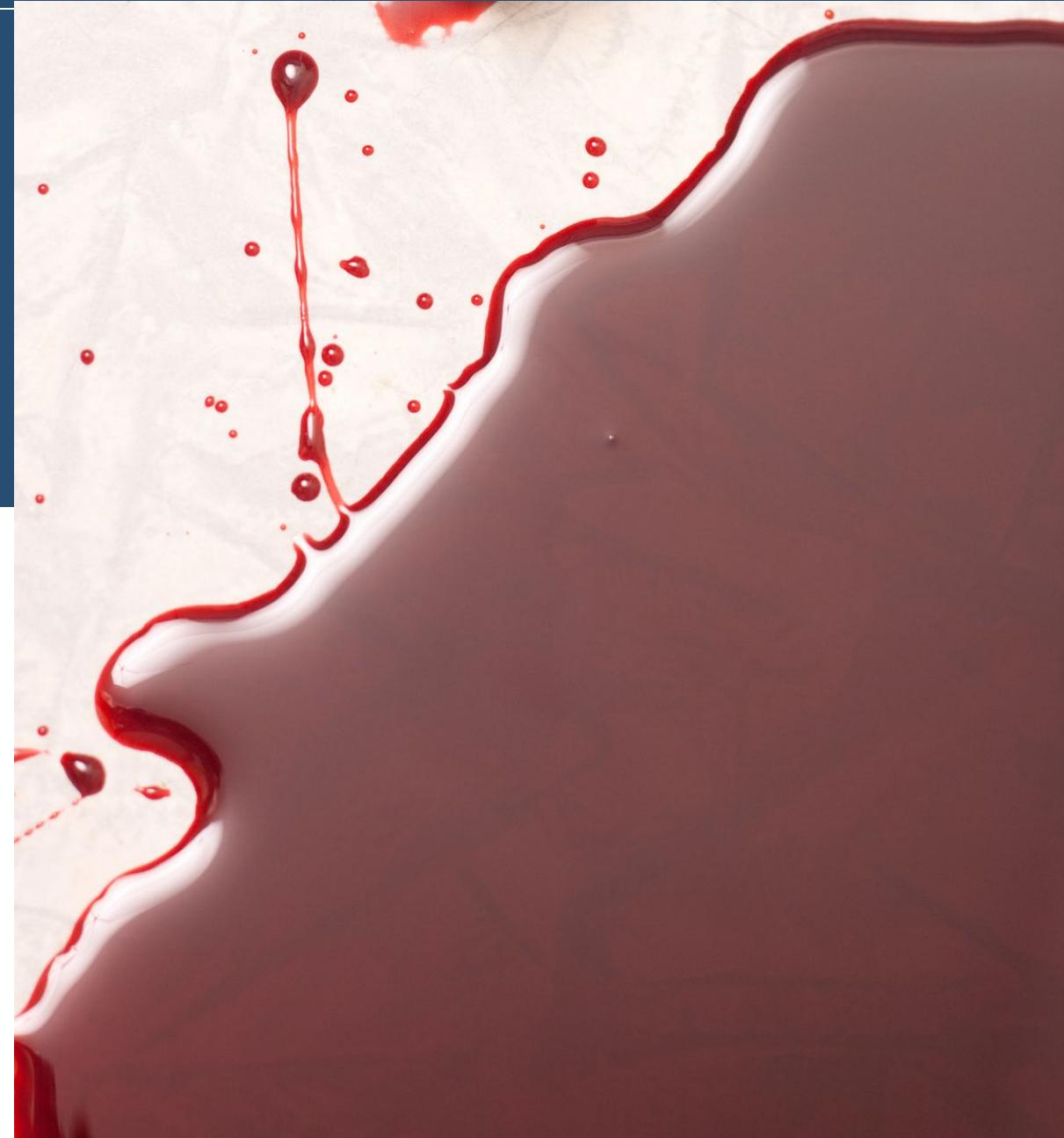
Severe PPH in the MBRN

DEFINITIONS

Severe PPH: 1500 ml blood loss postpartum
and/or blood transfusion.

PPH: 500 - 1500 ml blood loss postpartum.

Tick-box registered to the Medical Birth Registry
of Norway (MBNR)





POPULATION BASED COHORT STUDY

Aim: To investigate the incidence of severe PPH among nulliparous women with a spontaneous onset of labor at term

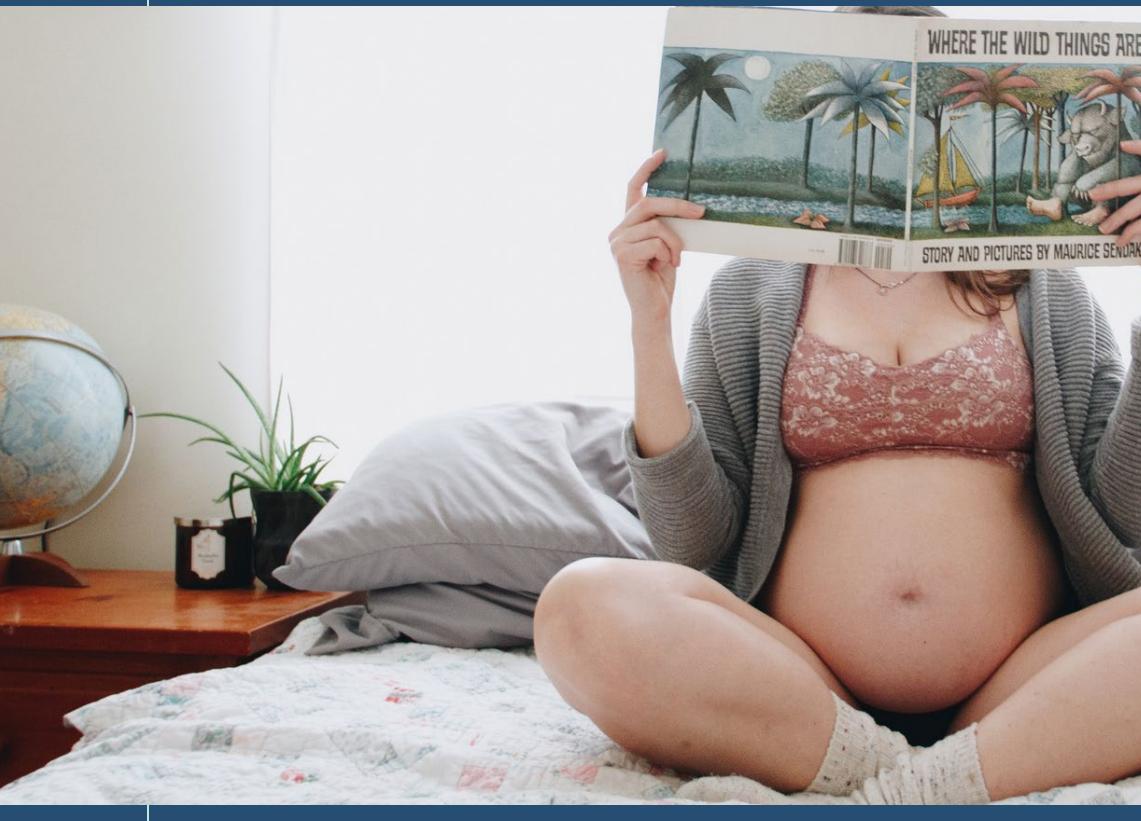
Data source - Medical Birth Registry of Norway

Para 0

Spontaneous onset of labor

To term (37+0 - 41+6)

Singleton – cephalic position



Born MBRN 2000 -
2020:

N= 1 240 289



GA 37+0 – 41+6, Singleton, cephalic position and
spontaneous onset of labor:

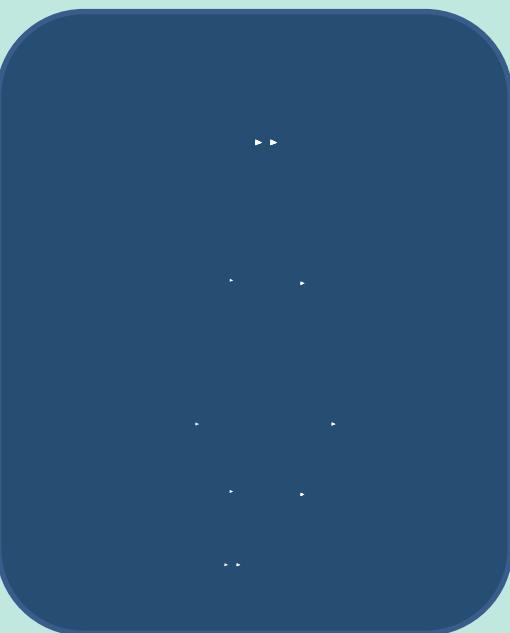
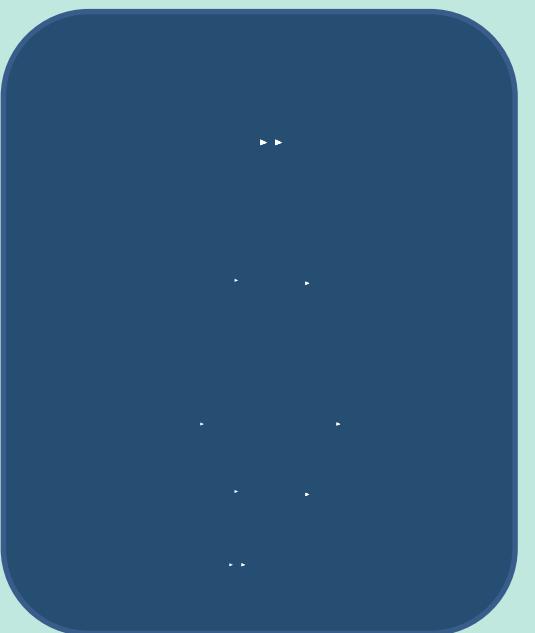
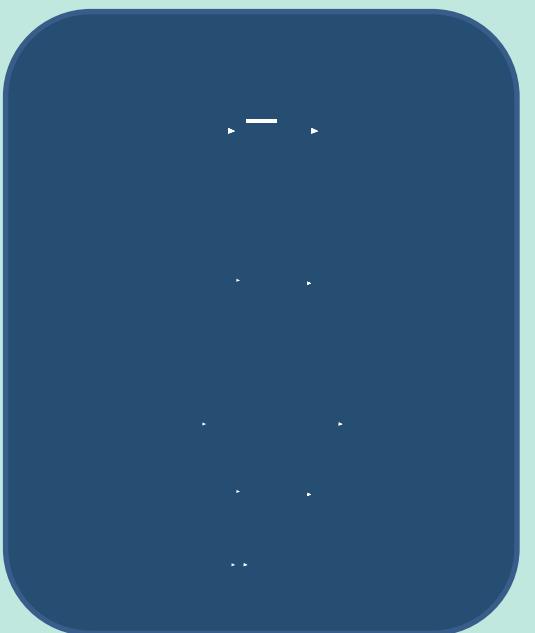
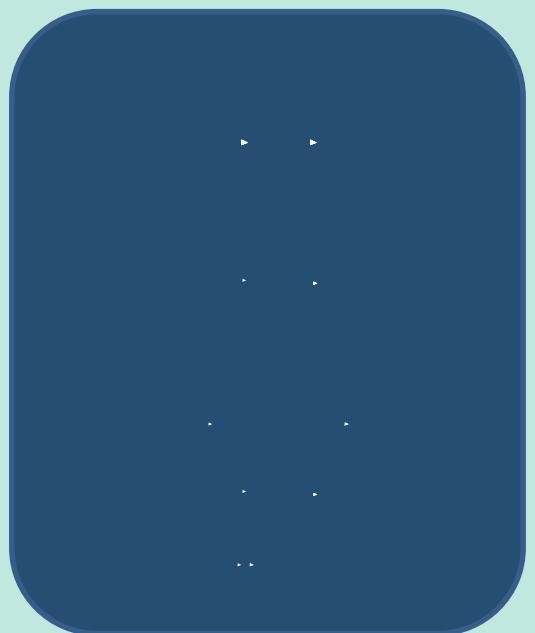
N: 811 209



Para 0
N: 330 244

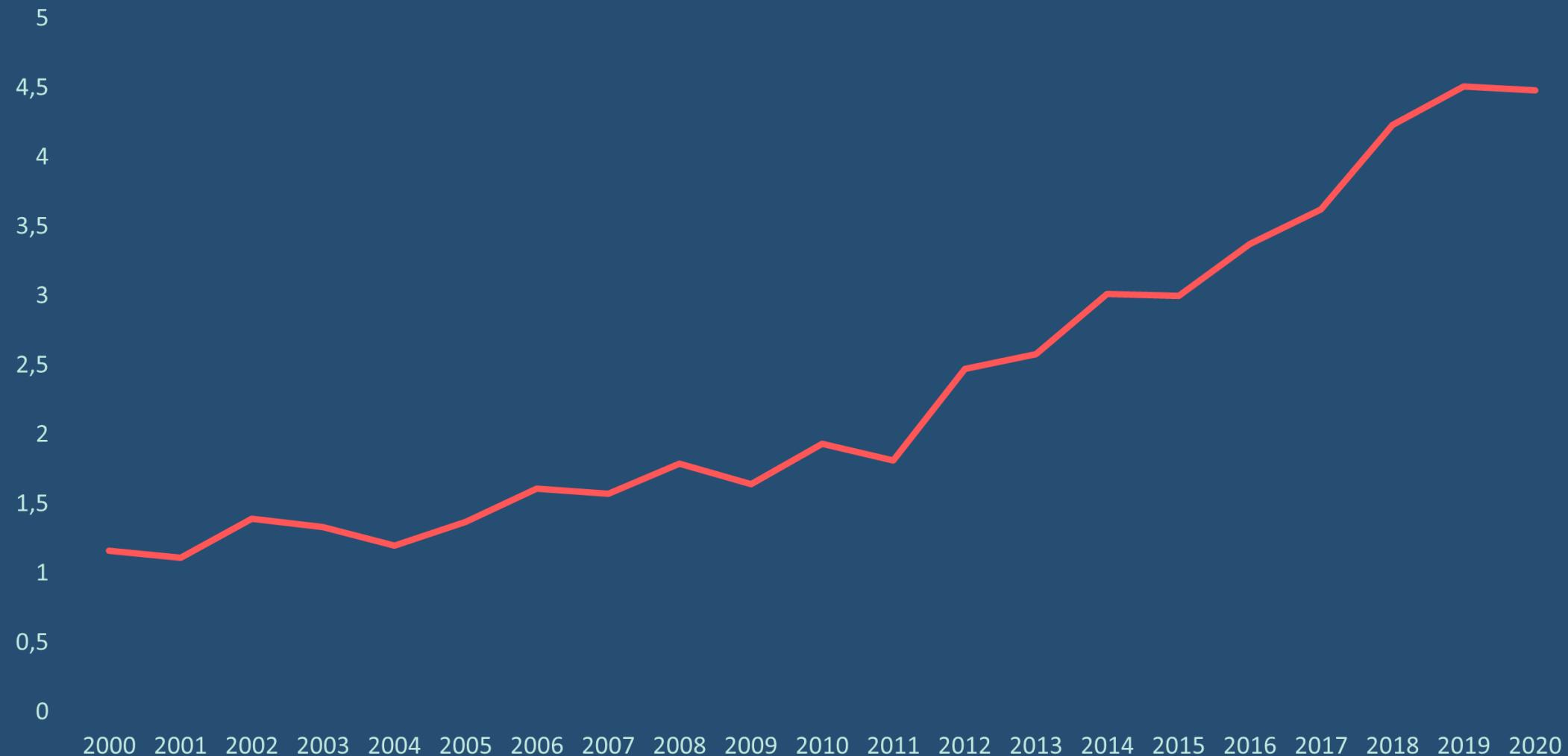


Severe PPH
N: 7601
(2.3%)

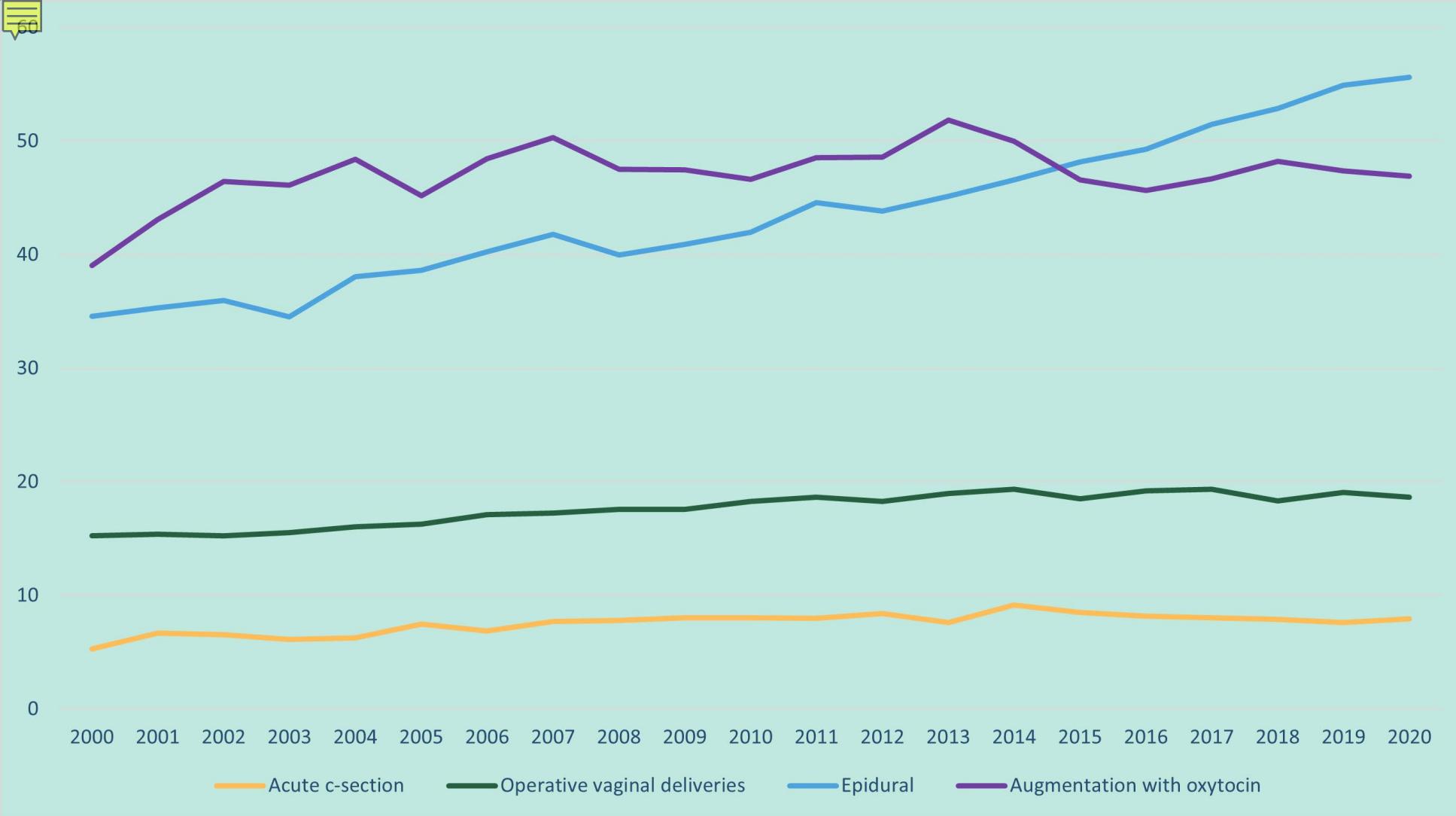




% Severe PPH - para 0, spontaneous onset at term, singleton



Severe PPH affected around 1/100 women in 2000 and around 4/100 women in 2020.



Other indicators:
Stable trends:
Emergency CS
Instrumental
vaginal deliveries
Augmentation
with oxytocin

Increasing trend:
Epidural

Obstetric trends in the study population 2000 - 2020

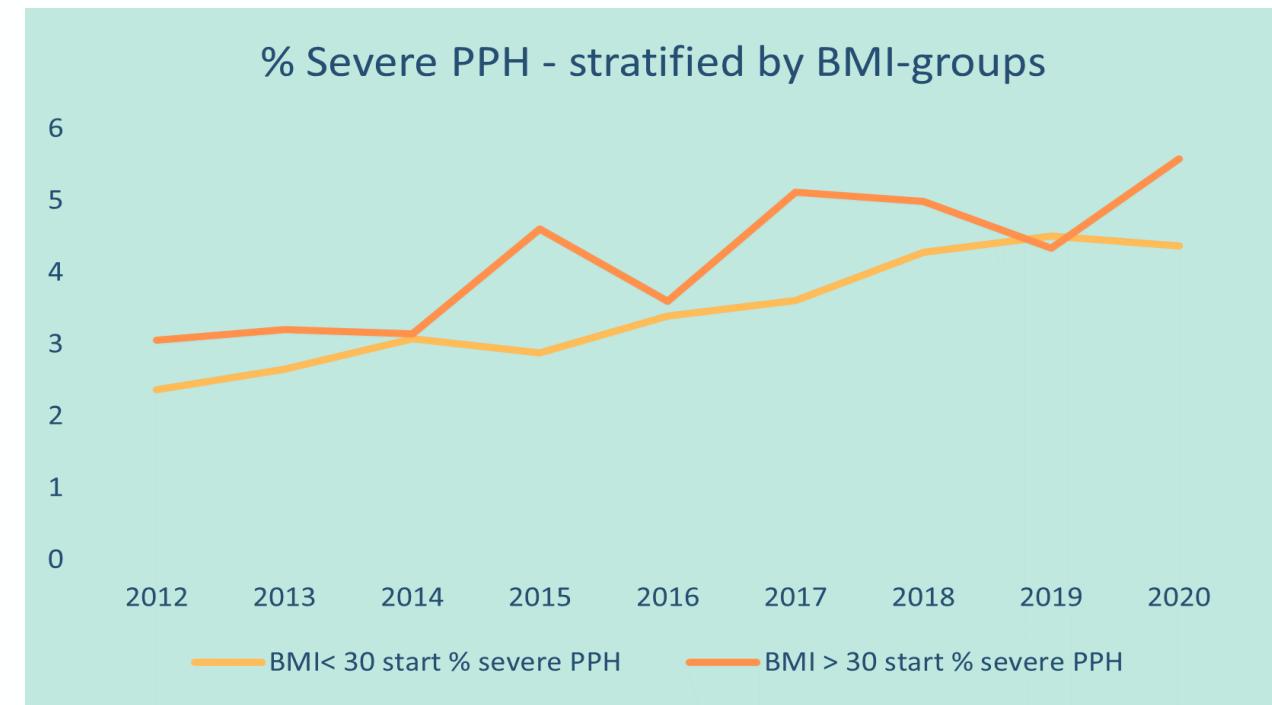


| | 2000-2004 | 2005-2009 | 2010-2014 | 2015 - 2020 |
|--|-----------|-----------|-----------|-------------|
| Maternal age (mean) | 26,7 | 27,1 | 27,4 | 28,4 |
| ≥ 35 years (%) | 5,7 | 7,3 | 7,8 | 9,4 |
| Epidural (%) | 35,7 | 40,3 | 44,4 | 51,9 |
| Augmentation – Oxytocin (%) | 44,6 | 47,8 | 49,1 | 46,9 |
| Mean birth weight (gram) | 3534 | 3493 | 3479 | 3494 |
| Preeclampsia (%) | 2,0 | 1,5 | 1,1 | 0,8 |
| Chronic condition (Hypertension, RA, renal) (%) | 1,0 | 1,1 | 1,2 | 1,1 |
| ART (%) | 1,9 | 2,7 | 3,1 | 4,6 |



What about BMI?

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|-------------------------|------|------|------|------|------|------|------|------|------|
| BMI data (%) | 55 | 64 | 73 | 75 | 84 | 87 | 91 | 93 | 93 |
| BMI – start (mean) | 23,6 | 23,5 | 23,4 | 23,4 | 23,4 | 23,4 | 23,6 | 23,7 | 23,8 |
| BMI-start ≥ 30 (%) | 8,6 | 8,5 | 8,0 | 7,5 | 7,5 | 8,0 | 8,4 | 8,7 | 9,0 |





% Severe PPH - stratified by maternal age groups



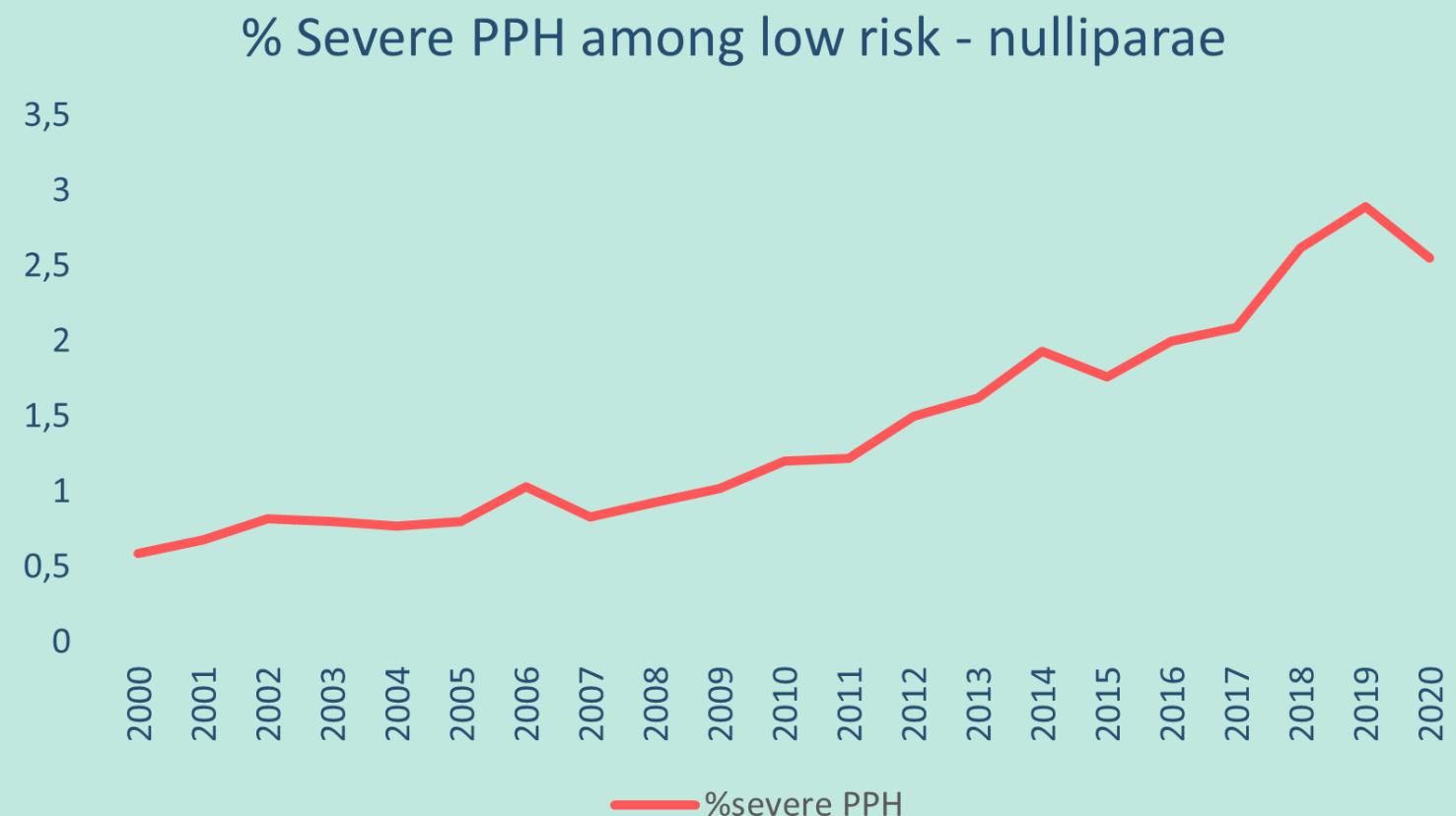
Increasing rates in all age groups



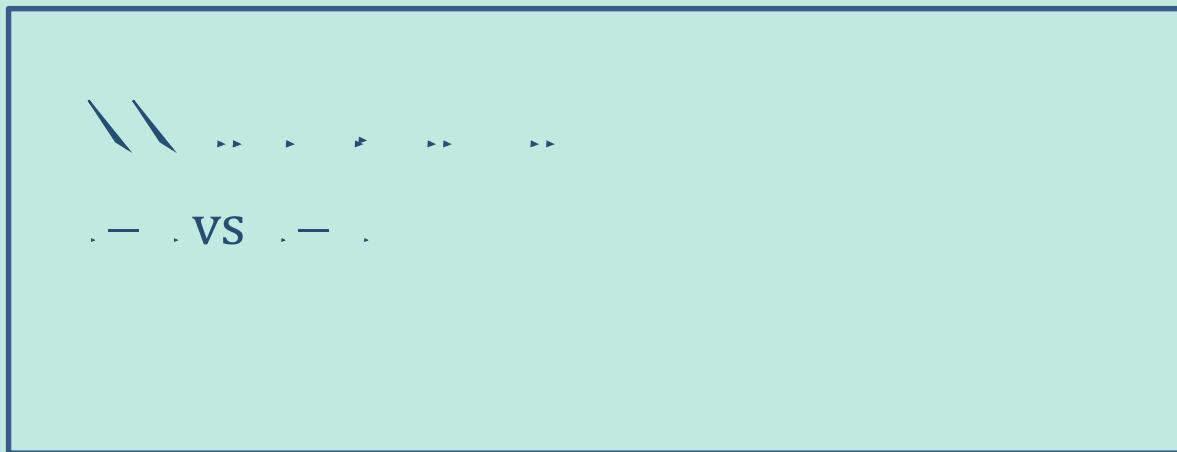
RELATIVE RISK FOR SEVERE PPH

| RR | 95-CI | Adjustment | Reference |
|------|---------|---|-----------|
| 3.09 | 2.9-3.3 | | 2000-2004 |
| 2.96 | 2.8-3.2 | Maternal age | 2000-2004 |
| 2.90 | 2.7-3.1 | Maternal age, epidural analgesia and augmentation with oxytocin | 2000-2004 |

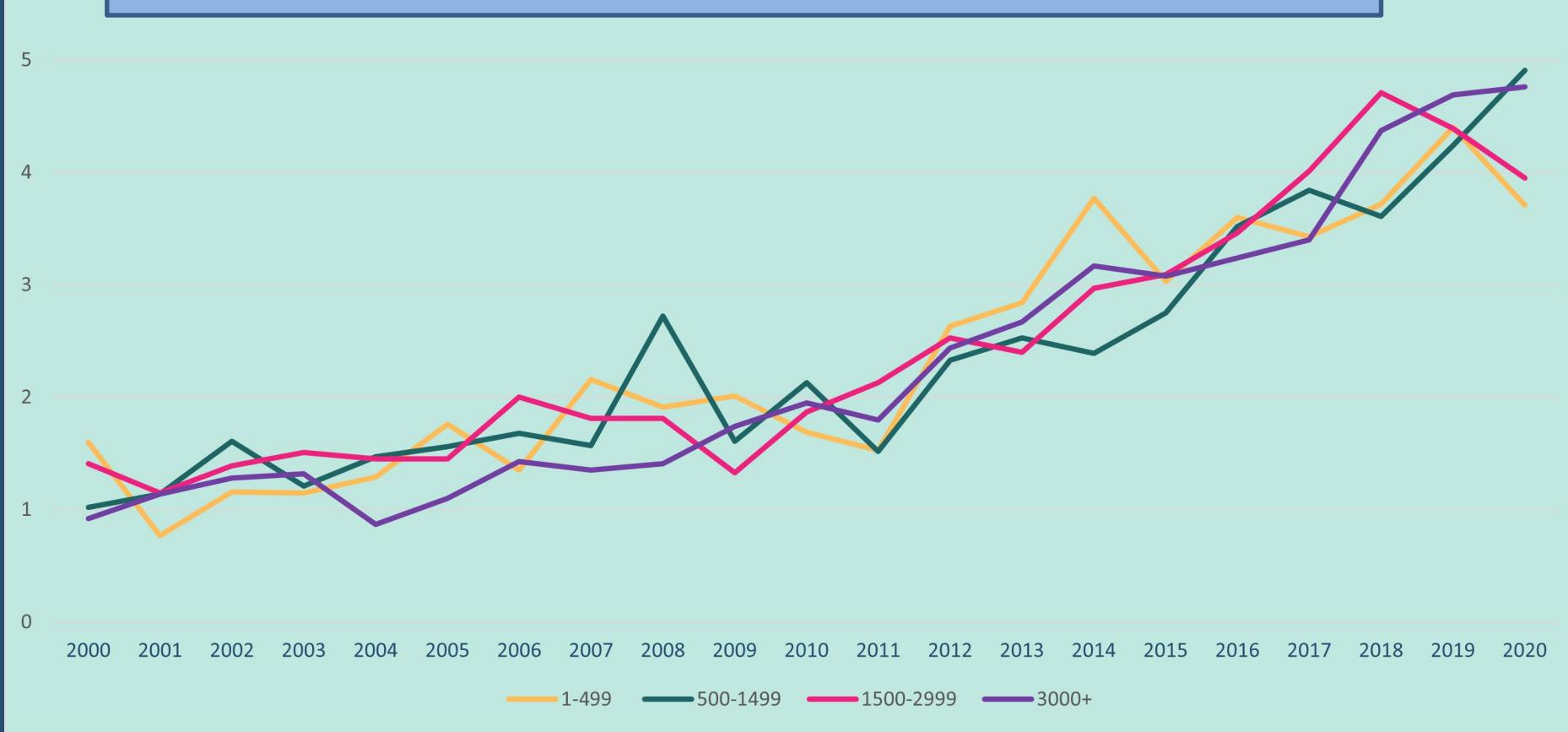
What about the low-risk women?

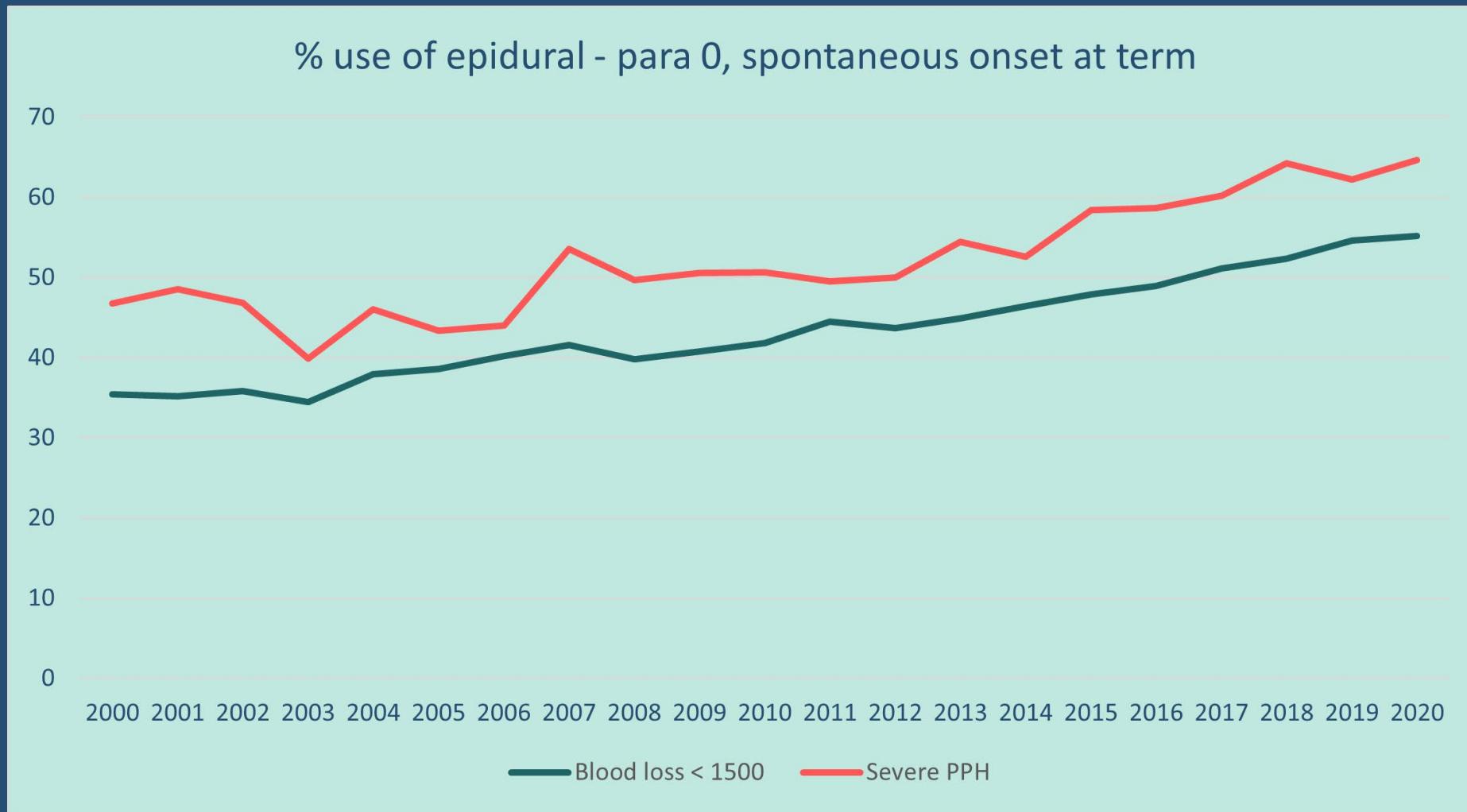


What about the low-risk women?

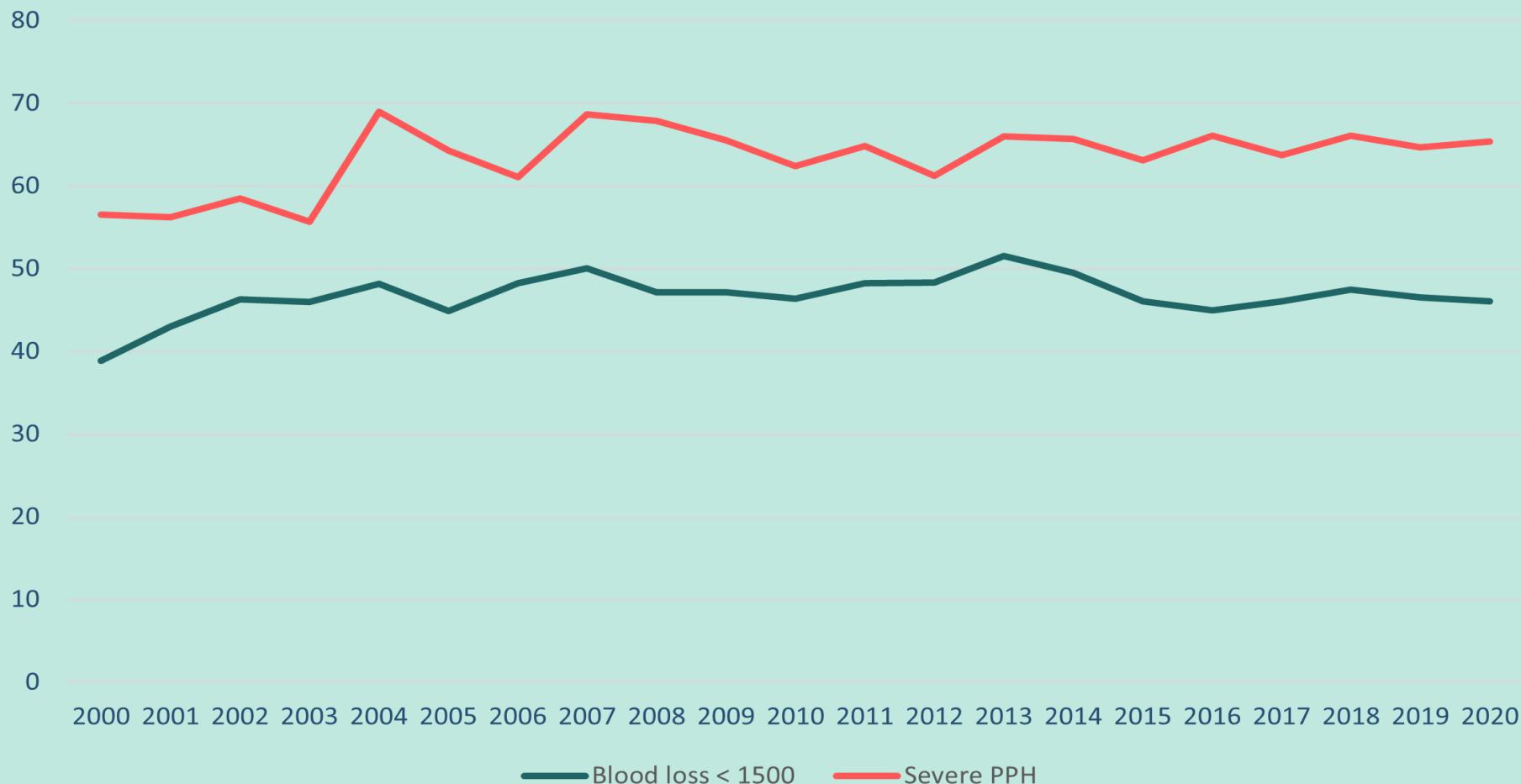


% severe PPH by institution size (annual nu of births)
Para 0, spontaneous onset, term delivery





% augmentation with oxytocin - para 0, spontaneous onset at term



Leaving the study population
ALL WOMEN
BY ROBSON GROUPS

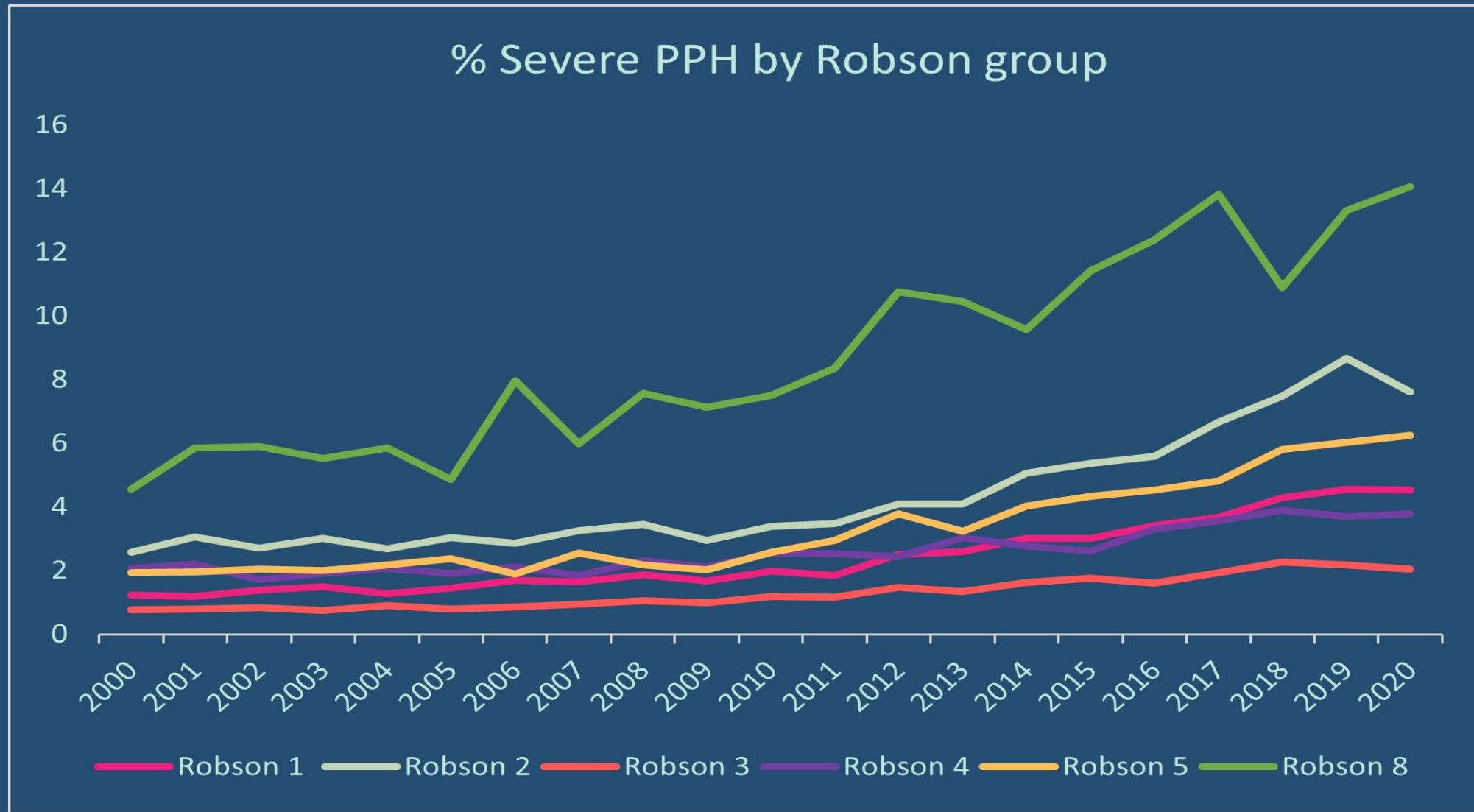
- R1:** Nulliparous, singleton, cephalic, term, spontaneous labor
- R2:** Nulliparous, singleton, cephalic, term, induced labor or prelabor CS
- R3:** Multiparous, singleton, cephalic, term, spontaneous labor, no previous CS
- R4:** Multiparous, singleton, cephalic, term, induced labor or prelabor CS, no previous CS
- R5:** Multiparous, singleton, cephalic, term, previous CS

- R6:** Nulliparous, singleton, breech
- R7:** Multiparous, singleton, breech
- R8:** Multiples
- R9:** Singleton, transverse/oblique
- R10:** Singleton, cephalic, preterm



Approx
doubling
in all
groups

% Severe PPH by Robson group



Conclusion /Discussion



- Increasing incidence rates
- Not explained by known risk factors, or interventions
- Changes in reporting of PPH?
- Changes in clinical practice ?
- Other ideas?

Would PPH be an interesting indicator for Euro-Peristat? Or other maternal indicators?

Challenges:

1. Do countries have data? And what data?
2. Differences in definitions
3. Do we overlap (completely) with INOSS – or other ongoing projects?

