

Happy Child Birth™ **The HCB Parity Adjusted Outcome Study**



Nature is the starting point

Prof. Luigi Colani, Chief Designer HCB

2004

HCB Happy Child Birth Holding Ltd.

Dr. Andreas F. Schaub, MD FMH

Founder, Chairman & CEO



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

Obstetrics: the next paradigm change

Mauriceau's work established obstetrics as a separate science and his views became the dominant force of the 17 th century obstetrical practice. He was the first to dispute the old beliefs that the pelvic bones were separated during normal labor and that the amniotic fluid was an accumulation of milk and menstrual blood.

Mauriceau, Francisci. *De mulierum praegnantium , parturientium, et puerperarum morbis tractatus.*
Parisii, Apud auctorem, MDCLXXXI

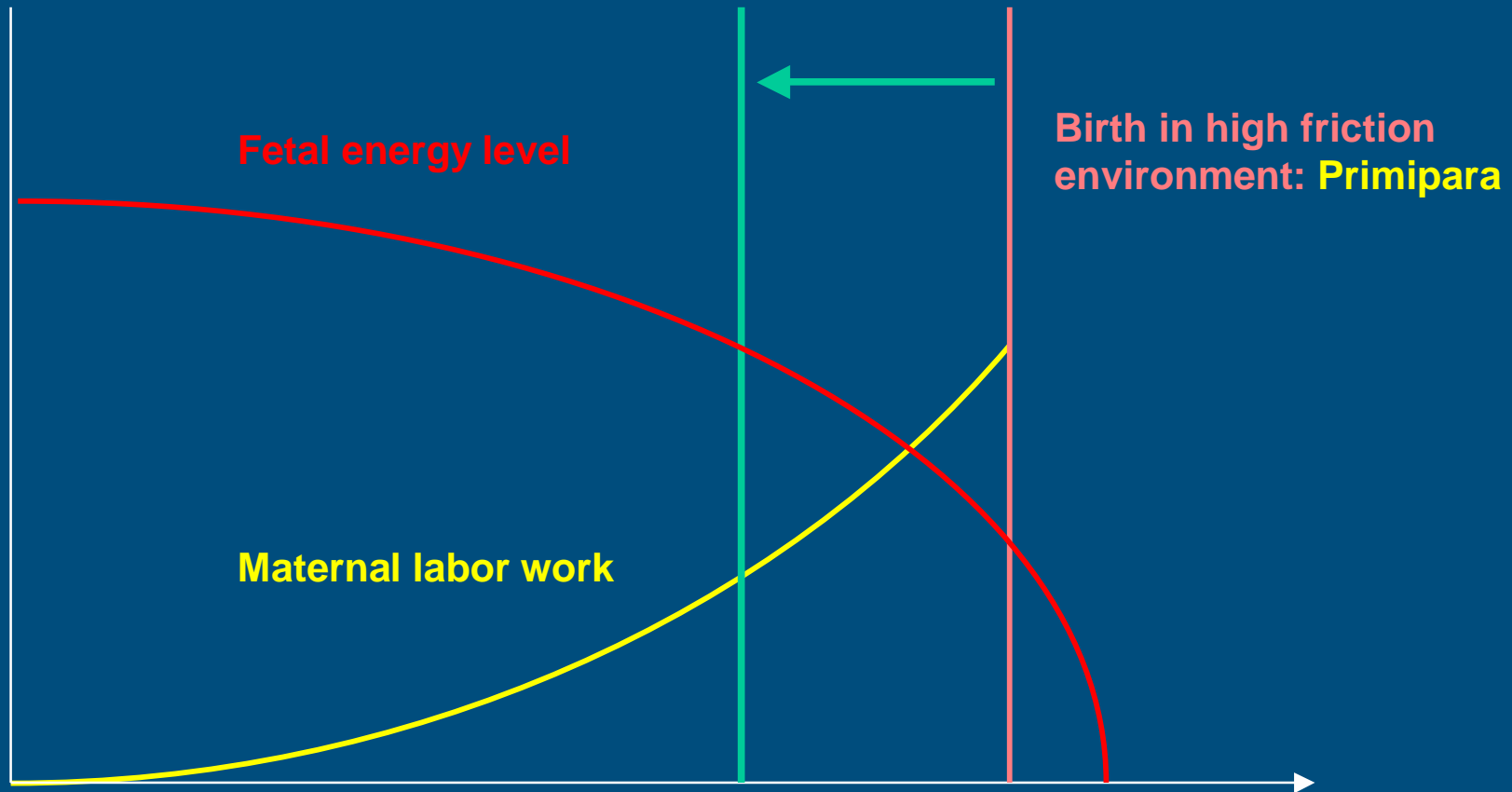
“ Not the extension force of the birth canal but the resulting friction force between maternal and fetal tissue is the main opposing force in vaginal childbirth. As a consequence it is possible to facilitate delivery by the application of Obstetric Surfactants to mimic and augment the natural function of vernix caseosa at term.”

Schaub Andreas F., Labor facilitation by a lubricant, Switzerland, January 2002



Friction: leads to delivery time shift

Birth in low friction environment: **Multipara**



Friction: the discriminator in birth outcomes



The HCB Parity Adjusted Outcome Study

- period: 1993 until 2003
- Switzerland
- Source: 352'215 deliveries, ASF nationwide statistics
- Included very low risk deliveries: 188'339
 - Primipara: 82'003
 - Multipara: 103'106 (2 to 4)
 - Grandpara: 3230 (> 4)

Friction: the discriminator in birth outcomes

The HCB Parity Adjusted Outcome Study

Inclusion criteria: singleton deliveries in vertex presentation at term ($GA \geq 37 + 0$)

Exclusion criteria: previous c-section, maternal diseases, pregnancy complications, fetal malformations,

Discriminating factor: friction (parity / birth weight (4000g))

Statistics:

CHI-Square Test, $p < 0.05$

1 A vs 1 B (1 A = Primi & Child $> 4000g$ / 1 B = Primi & Child $< 4000g$)

2 A vs 2 B (2 A = Multi & Child $> 4000g$ / 2 B = Multi & Child $< 4000g$)

Primi (1 tot) vs Multi (2 tot)



Newborn cerebral damage: not fully understood

BMJ 2000;320:1626 (17 June)

News

Claim that events before birth cause cerebral palsy is disputed

Mark Silvert , *BMJ*

The theory that cerebral palsy is caused by events during pregnancy rather than at birth was attacked at a conference last week. Lawyers and doctors at the Action for Victims of Medical Accidents' annual conference in Birmingham claimed that the hypothesis, which was outlined in a consensus statement in the *BMJ* last year (1999;319:1054-9), was founded on inadequate evidence and literature.

They admitted that most neurodevelopmental problems in children were not secondary to perinatal hypoxic-ischaemic damage but insisted that an important minority were. Current figures show that there are 2000 cases of cerebral palsy a year, with rates of 2-2.5 per 1000 children born.

Friction: lowers probability of vaginal delivery

 S: = P < 0.001



in percentage

N = 188'339

1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

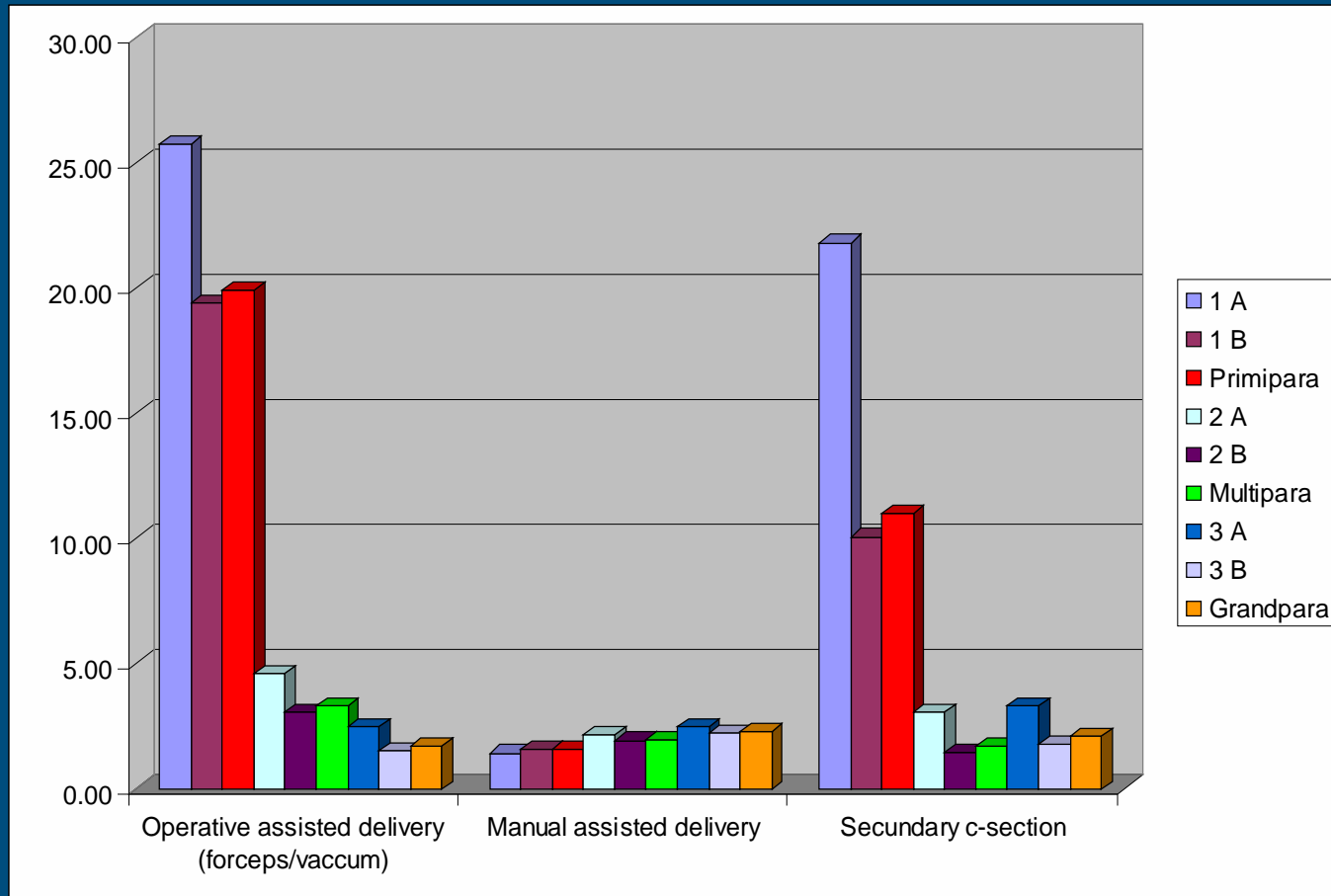
Friction: increases intervention rates



S := P < 0.001

in percentage

N = 188'339



1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

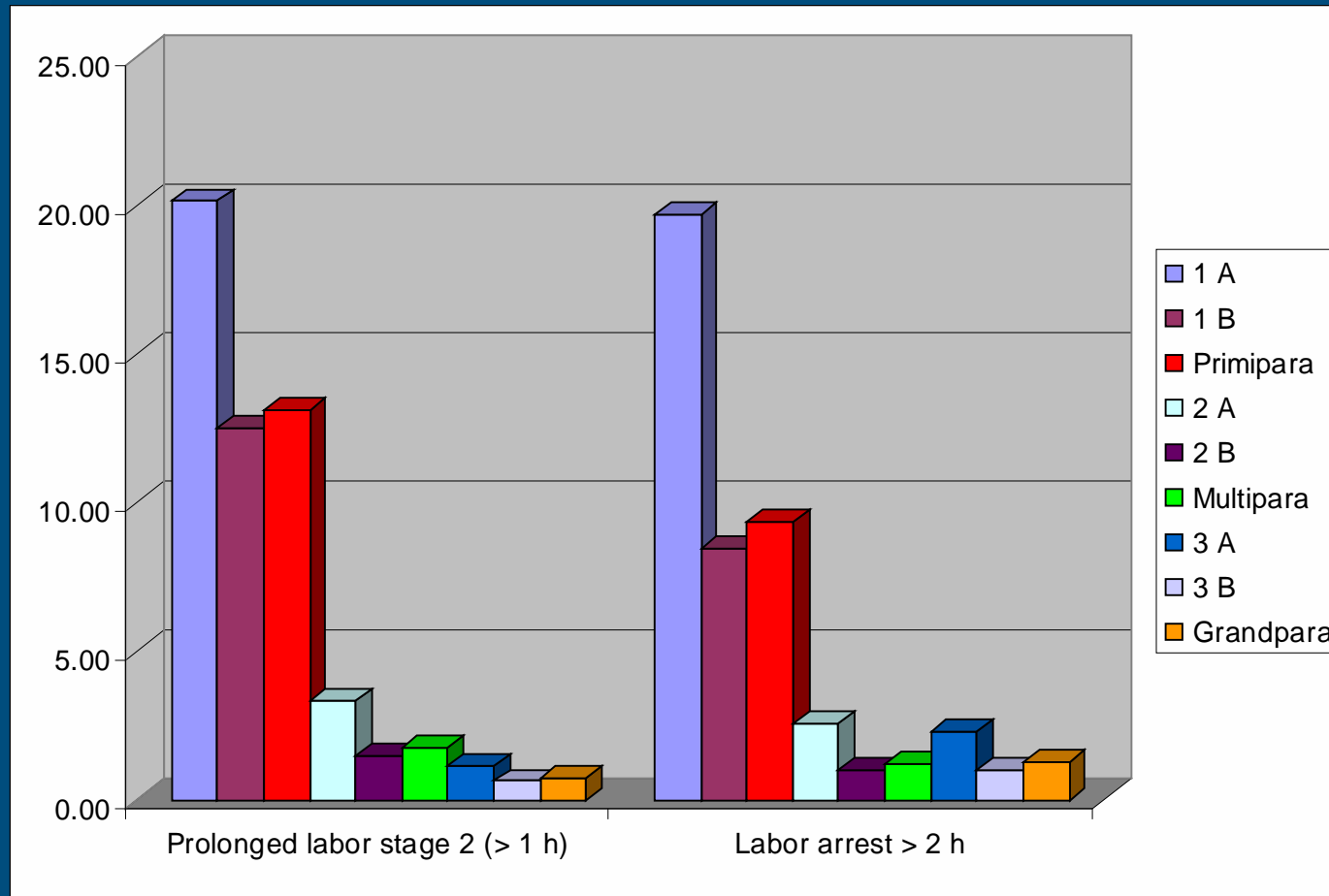
Friction: leads to labor arrest



S: = P < 0.001

in percentage

N = 188'339



1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g

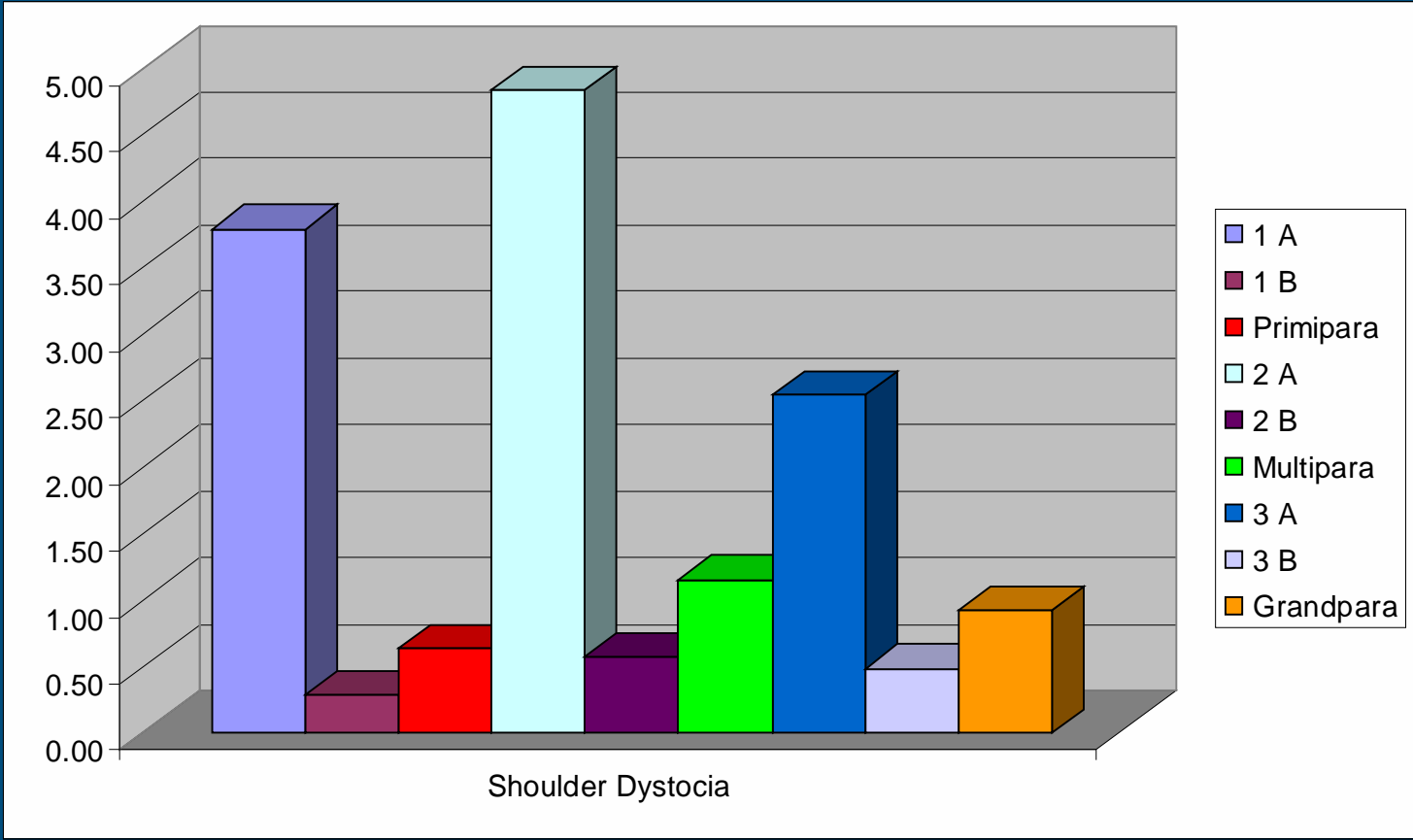


Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

Friction: leads to delivery disorders

 S: = P < 0.001



in percentage

N = 188'339

1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

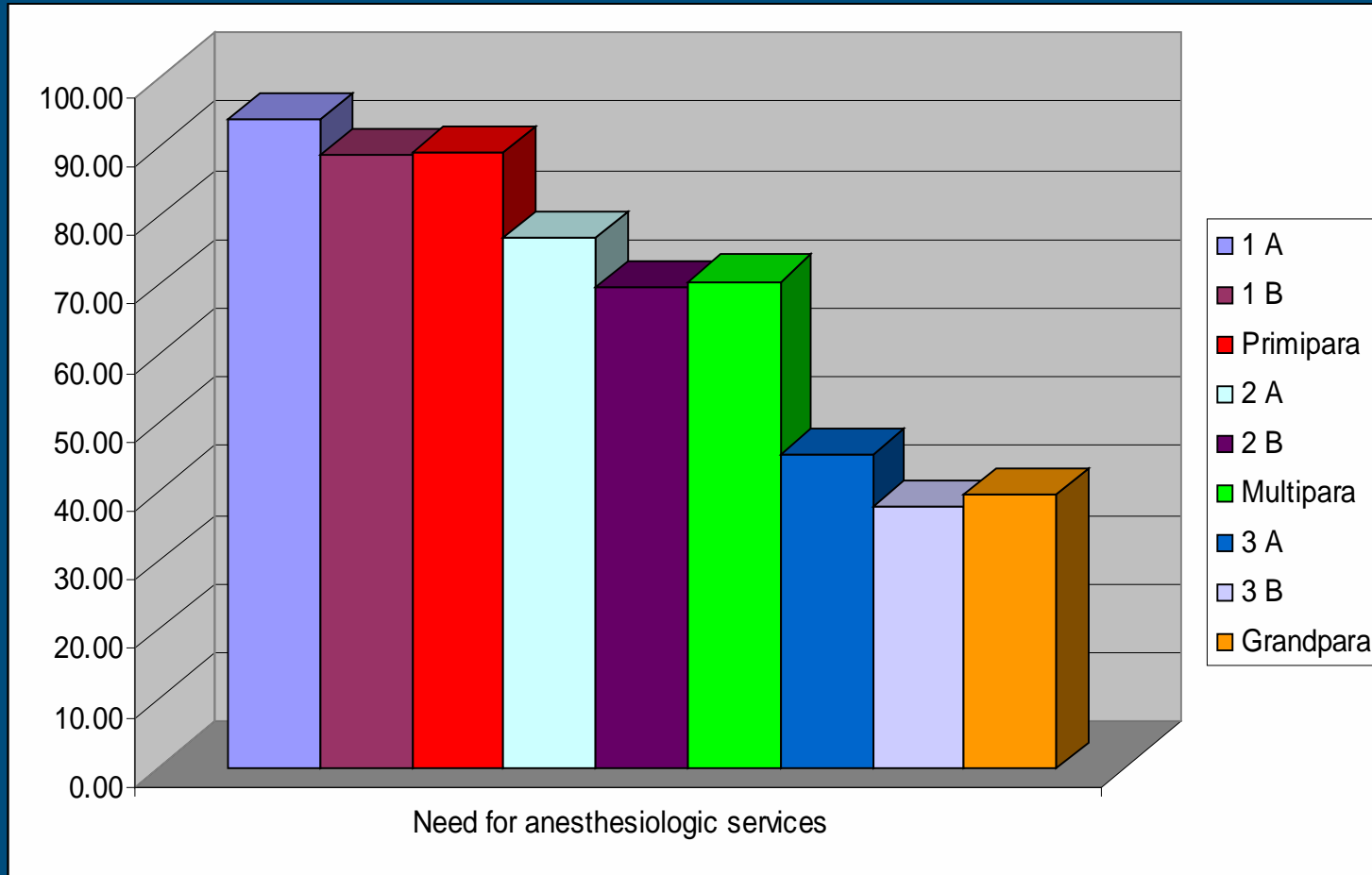
Friction: is painful



S: = P < 0.001

in percentage

N = 188'339



1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



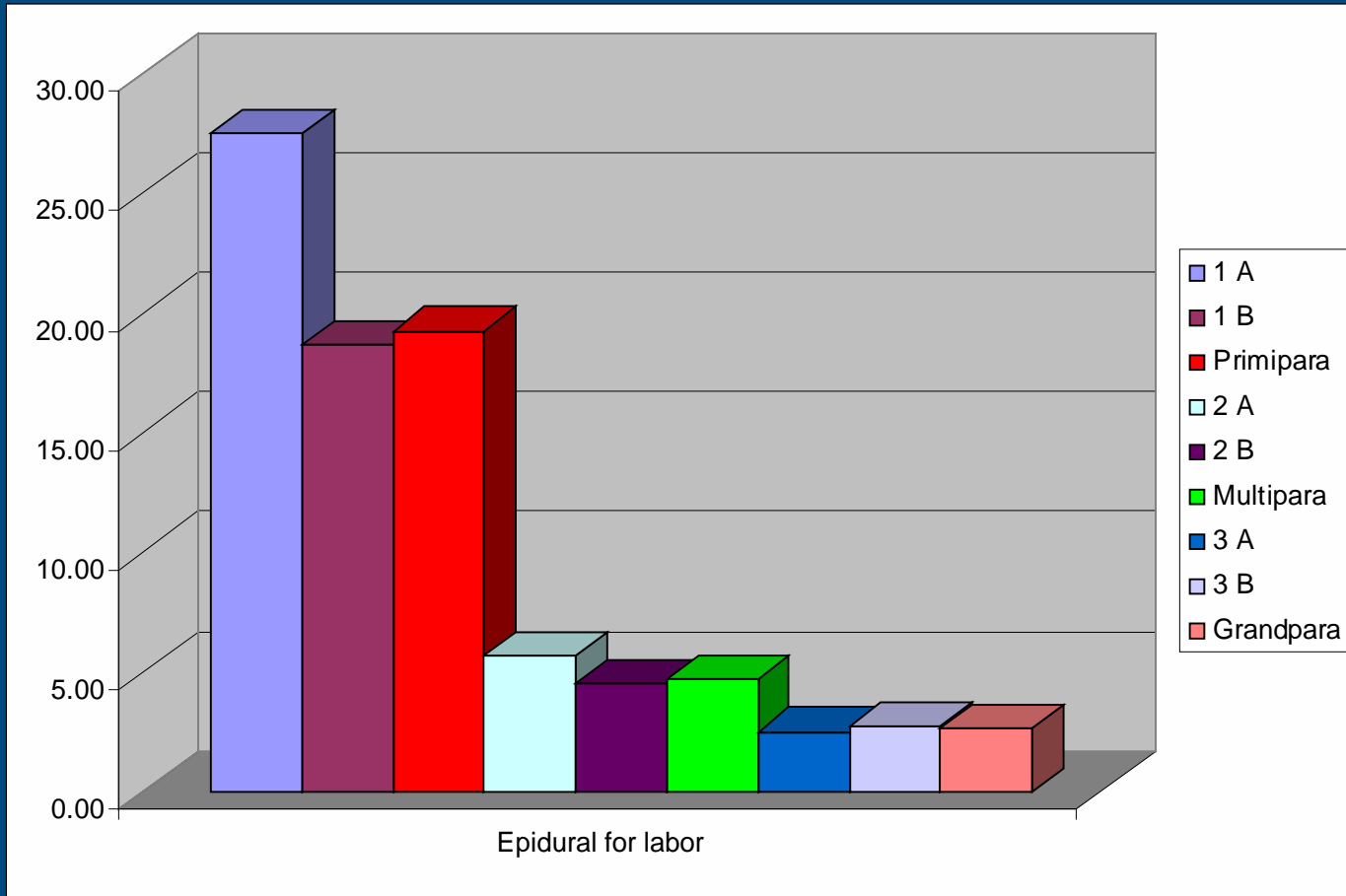
Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

Friction: increases pain services needs



S: = P < 0.001



in percentage

N = 188'339

1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

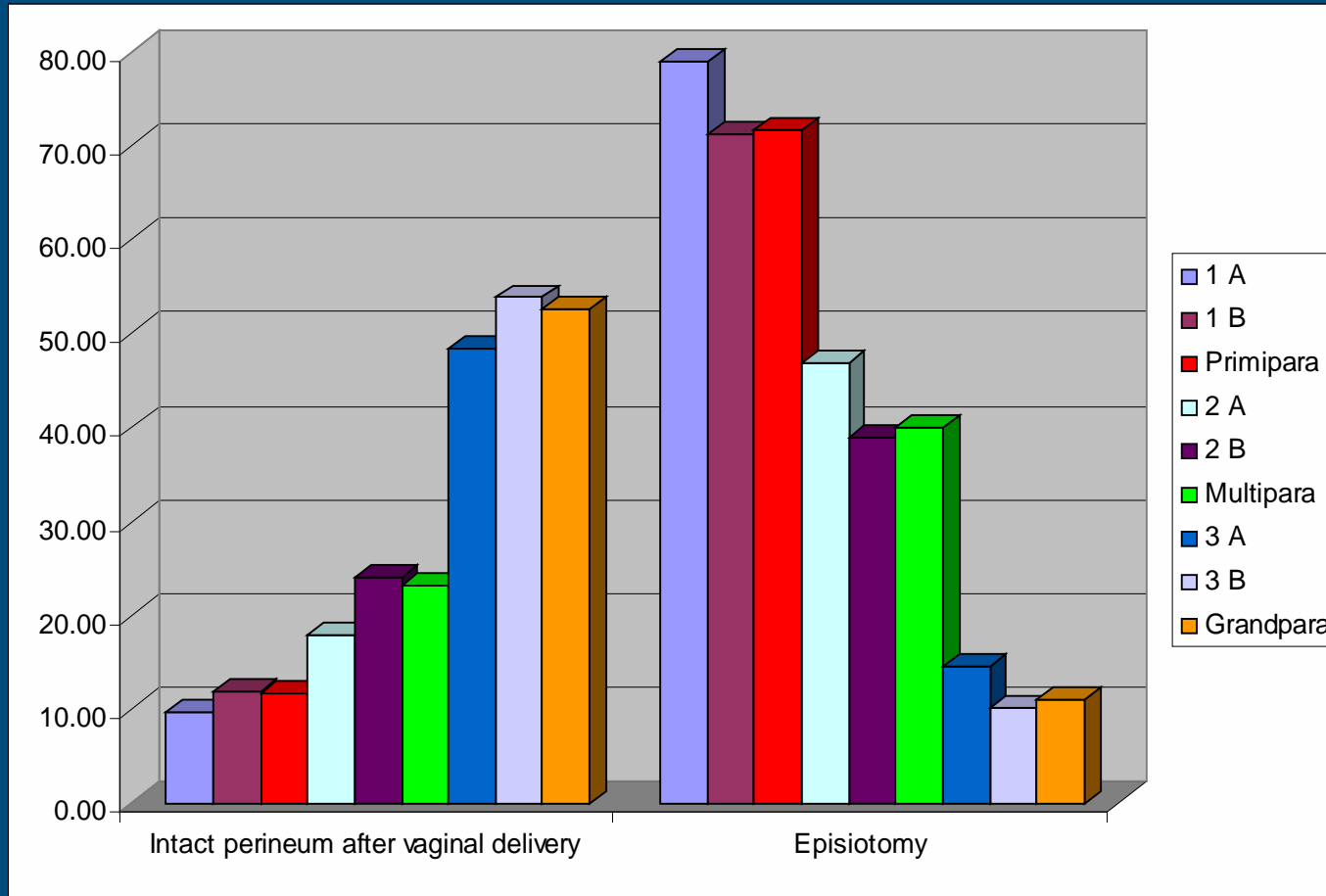
Friction: causes pelvic floor damages



S: = P < 0.001

in percentage

N = 188'339



1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

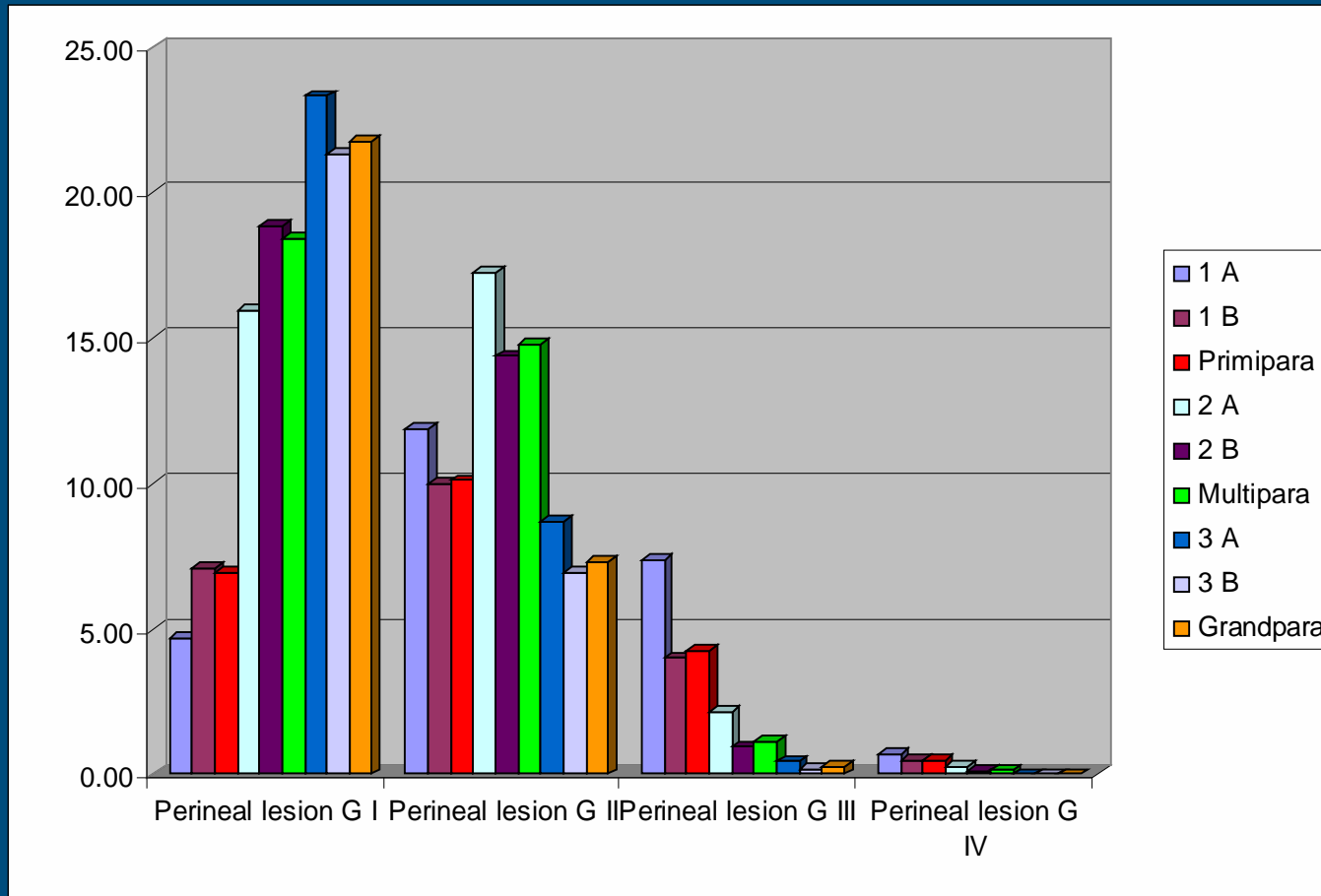
Friction: causes pelvic floor damages



S: = P < 0.001

in percentage

N = 188'339



1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



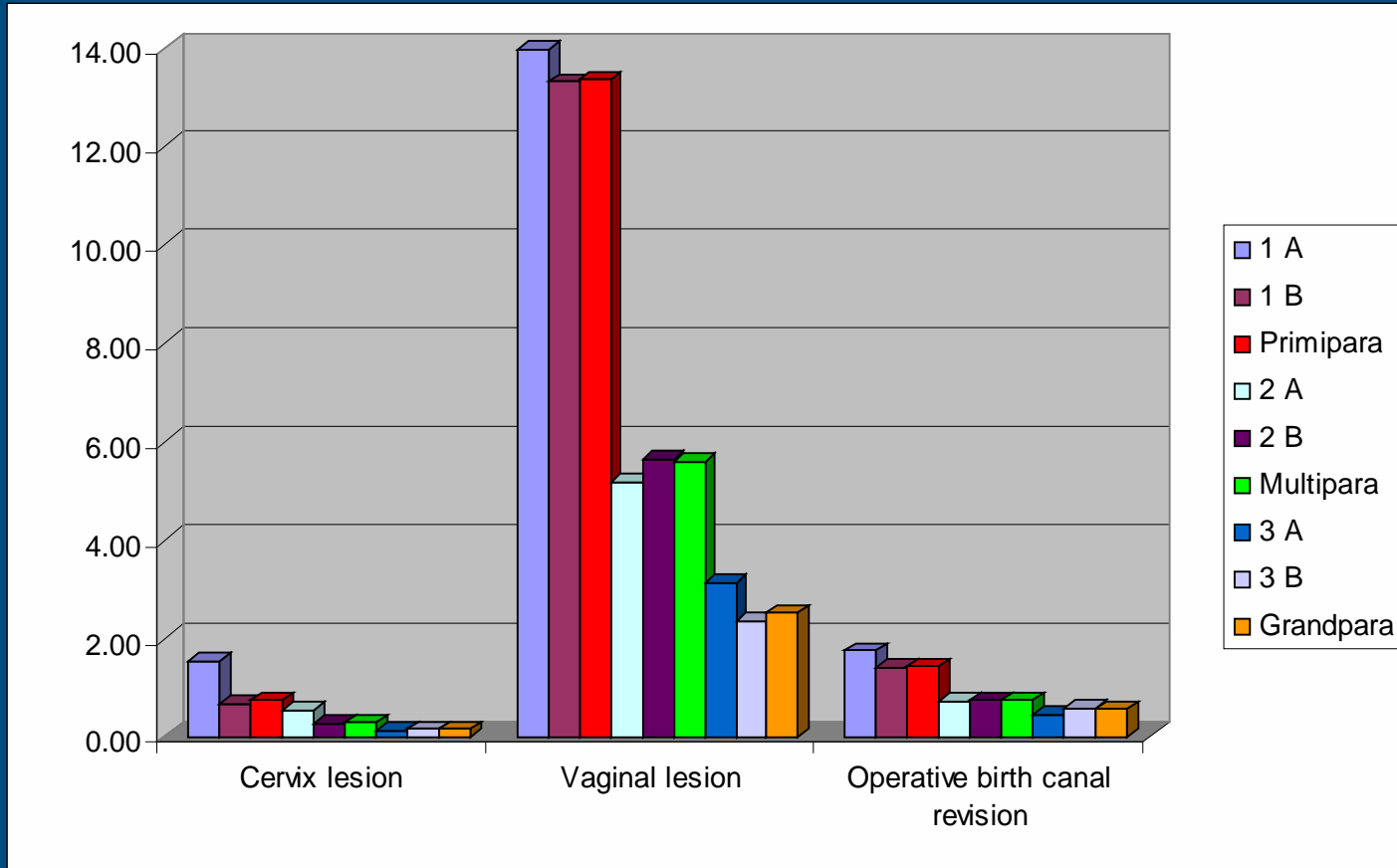
Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

Friction: causes birth canal damages



S: = P < 0.001



in percentage

N = 188'339

1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



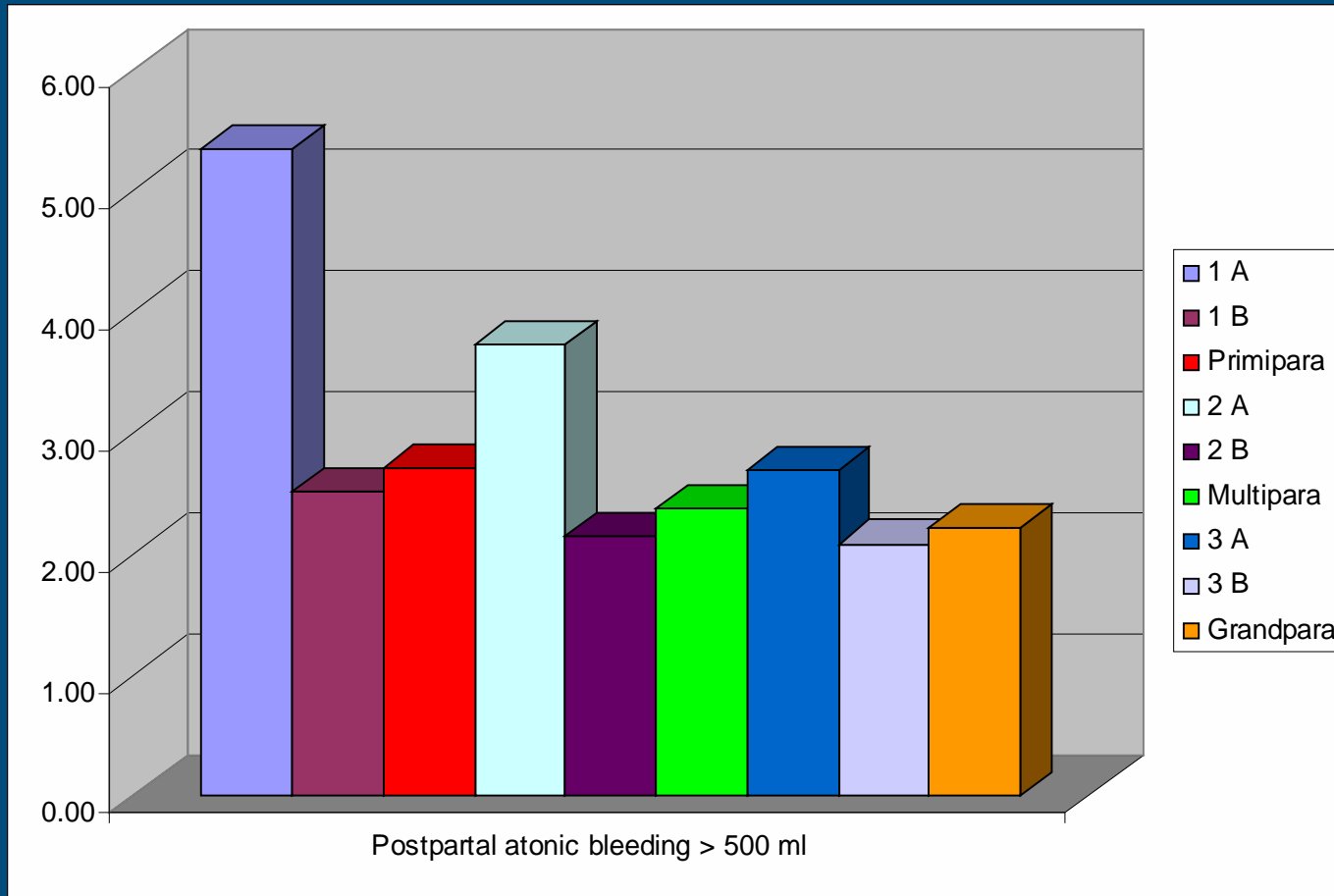
Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

Friction: leads to atonic bleeding



S: = P < 0.001



in percentage

N = 188'339

1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

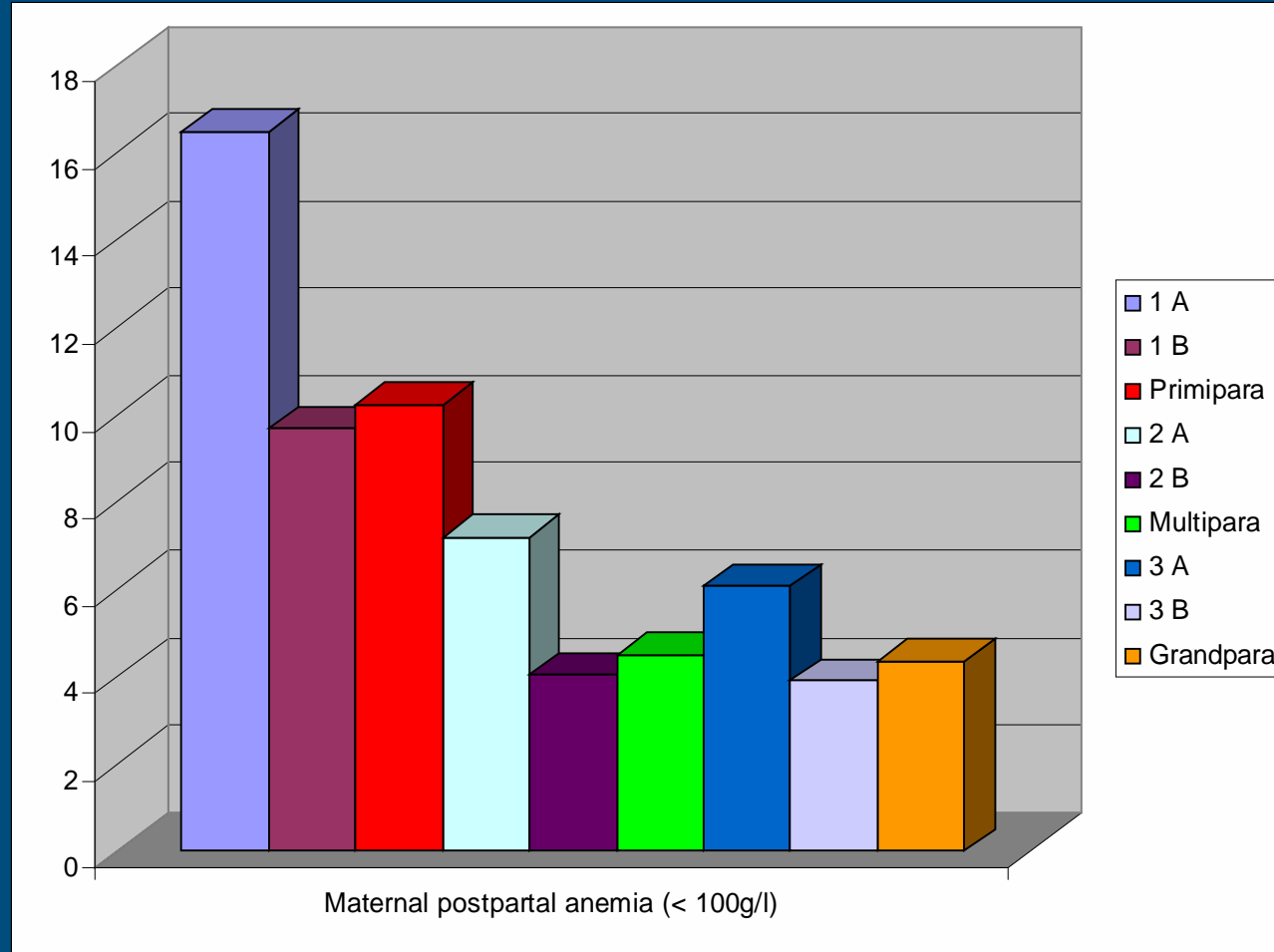
Friction: leads to postpartal anemia



S: = P < 0.001

in percentage

N = 188'339



1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

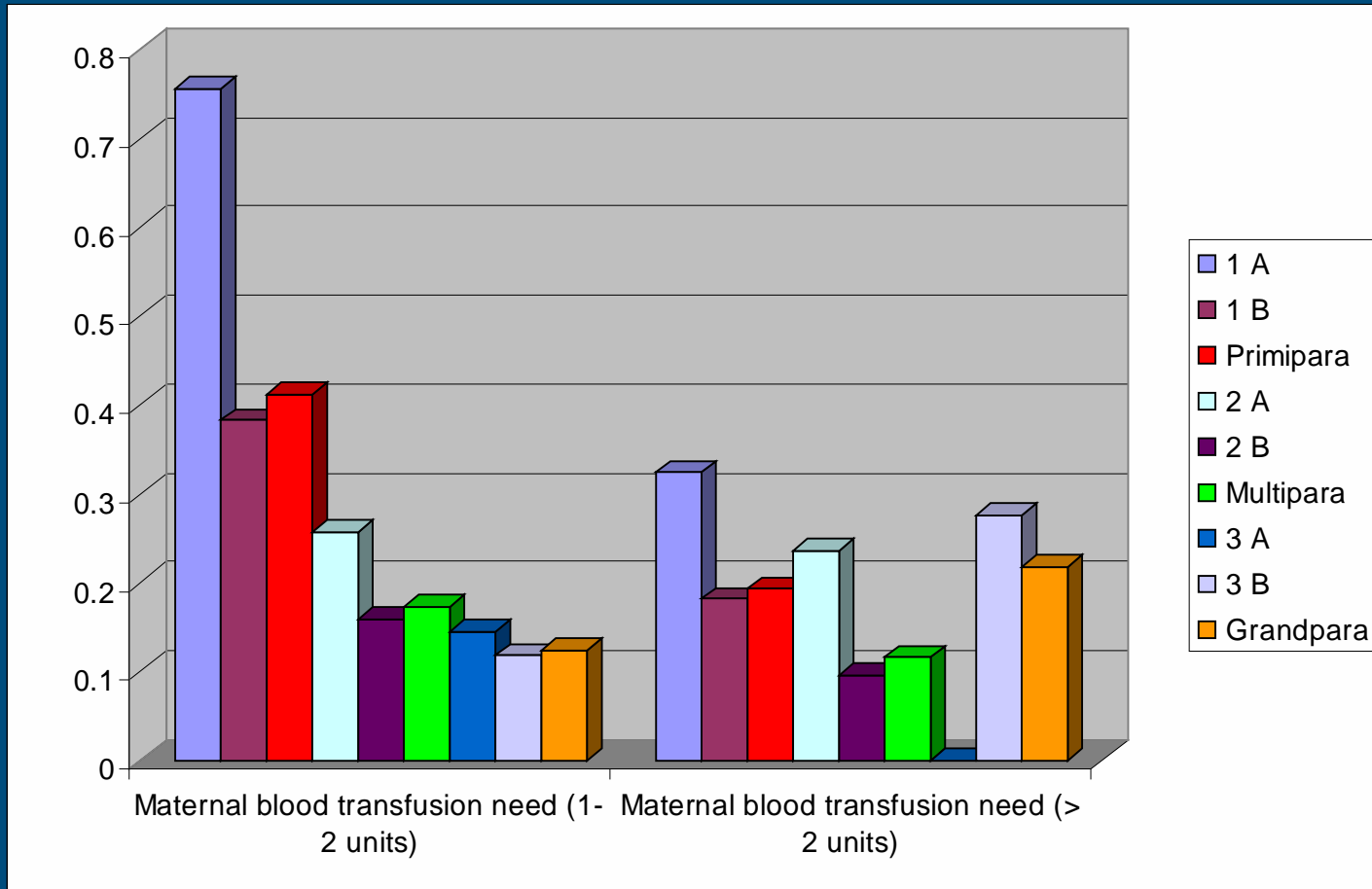
Friction: leads to critical blood loss



S: = P < 0.001

in percentage

N = 188'339



1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

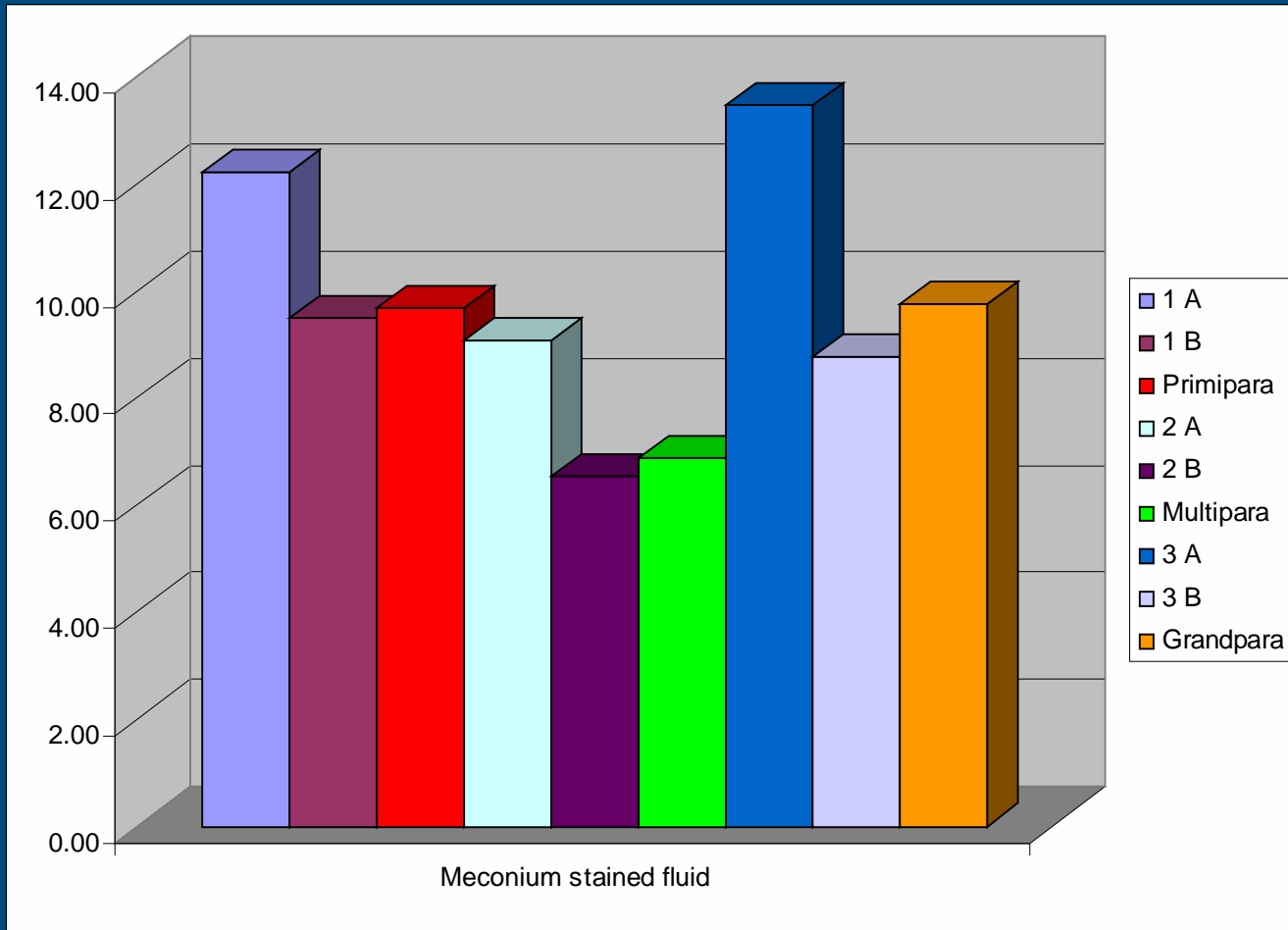
Friction: leads to fetal distress



S: = P < 0.001

in percentage

N = 188'339



1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g

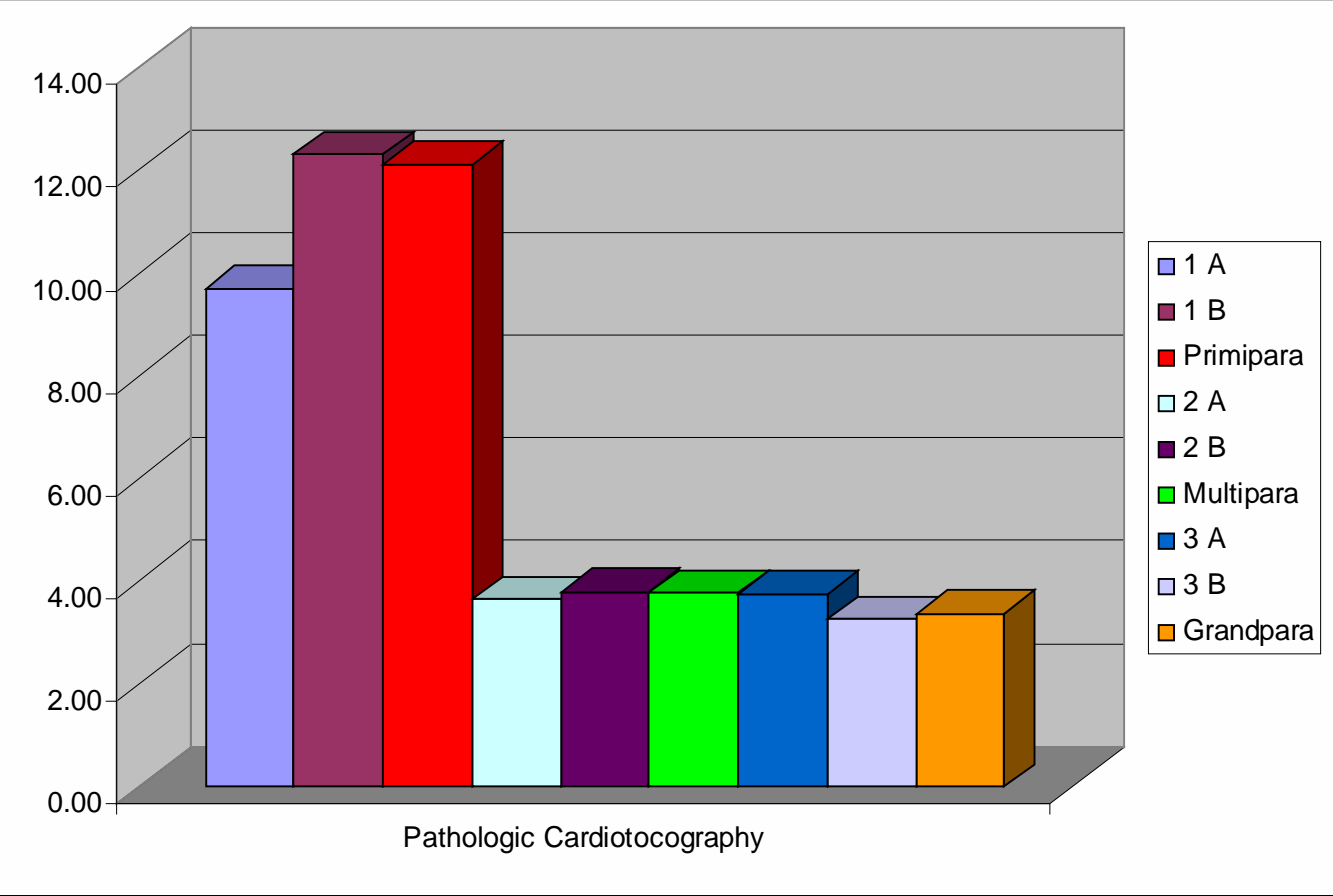


Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

Friction: leads to fetal distress

 $S := P < 0.001$



in percentage

N = 188'339

1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

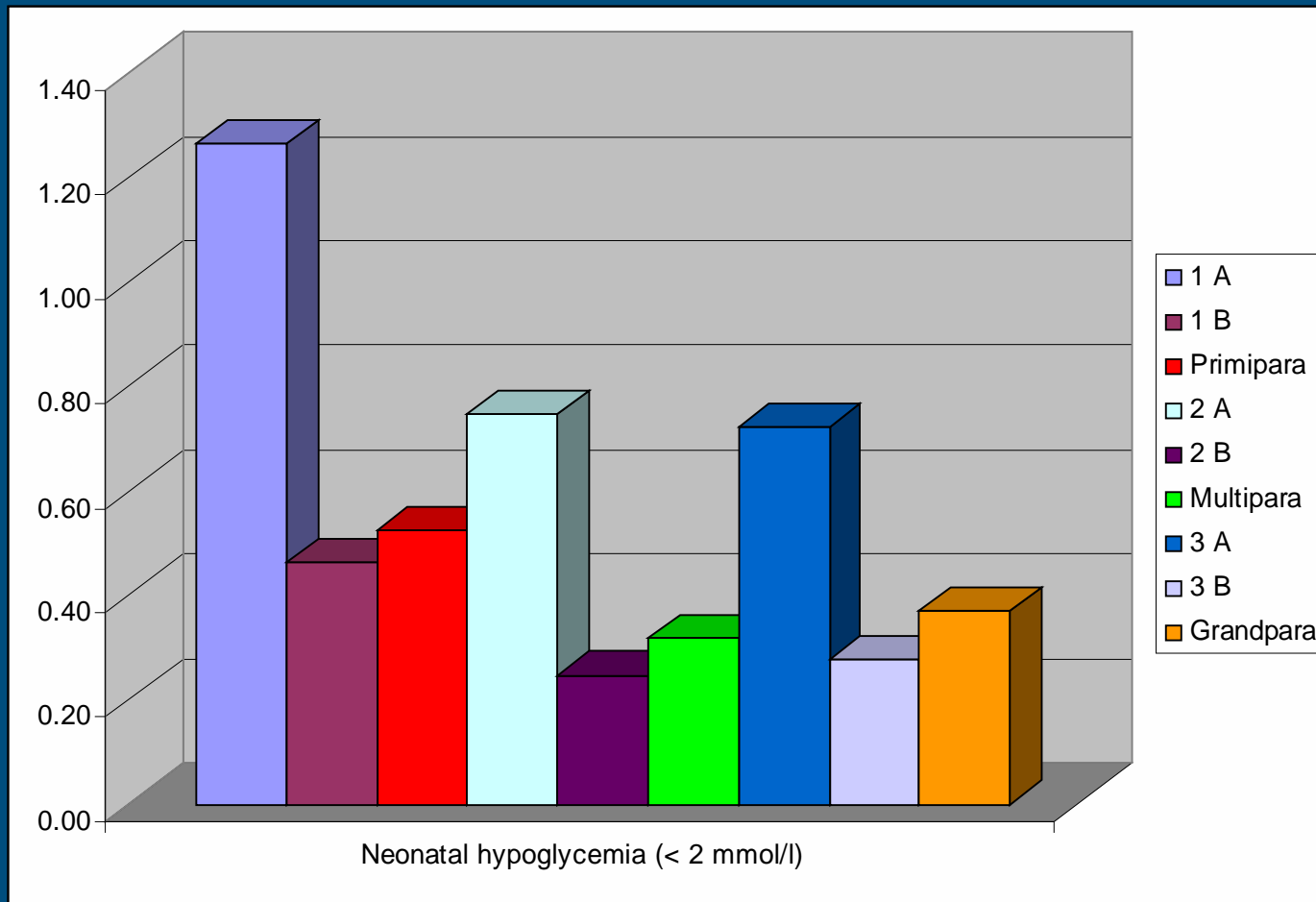
Friction: leads to newborn stress



S: = P < 0.001

in percentage

N = 188'339



1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

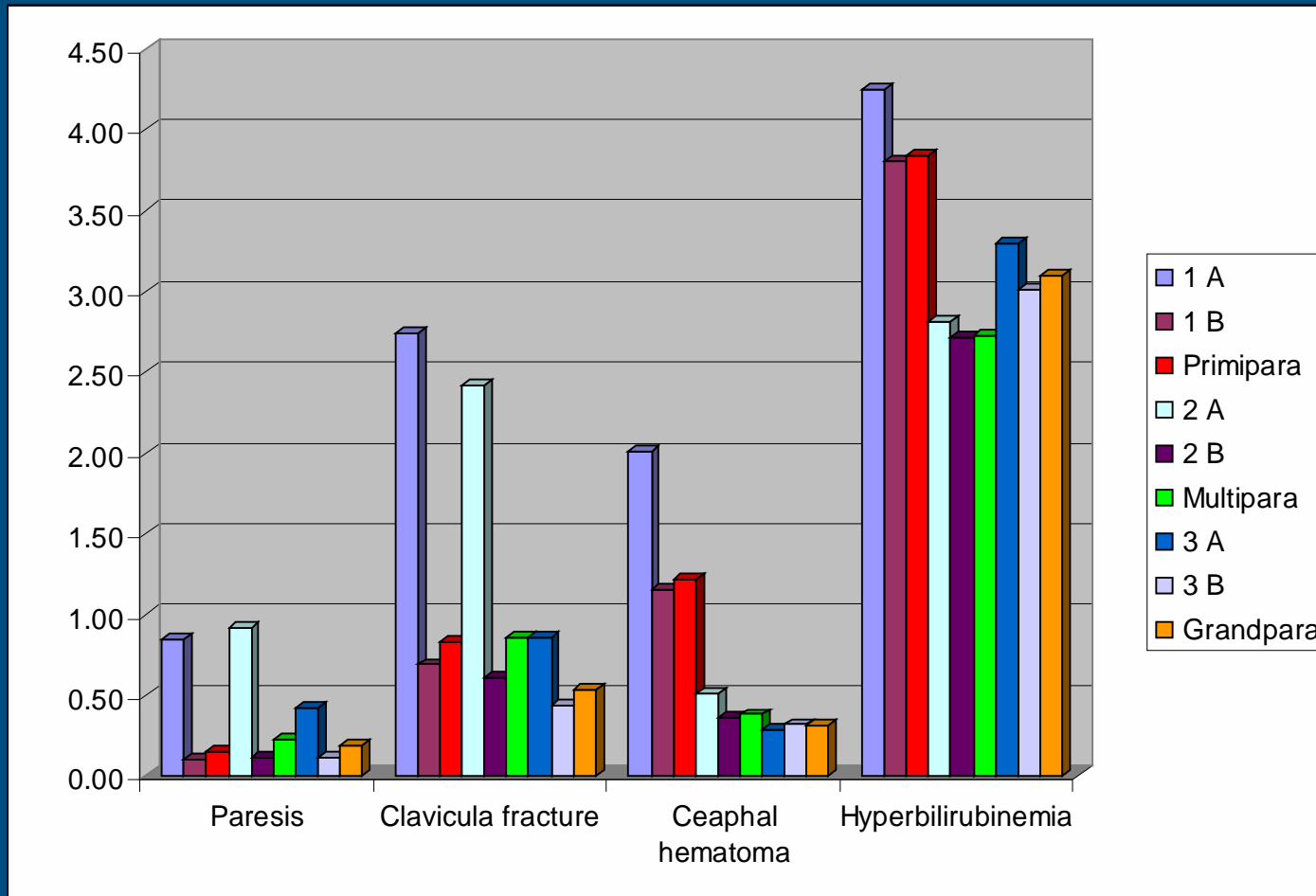
Friction: leads to newborn trauma



S: = P < 0.001

in percentage

N = 188'339



1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



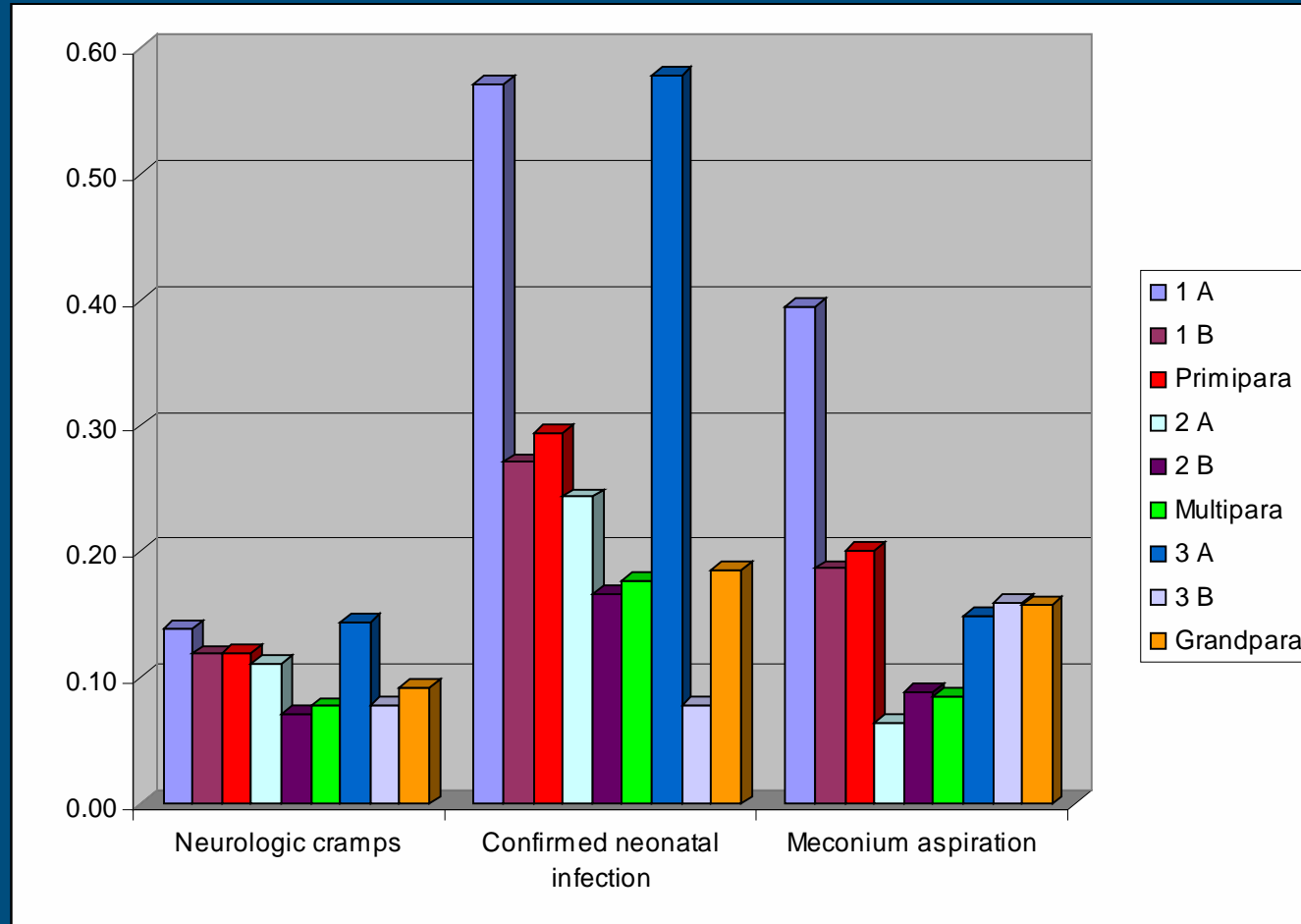
Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

Friction: leads to severe newborn complications



S: = P < 0.001



in percentage

N = 188'339

1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

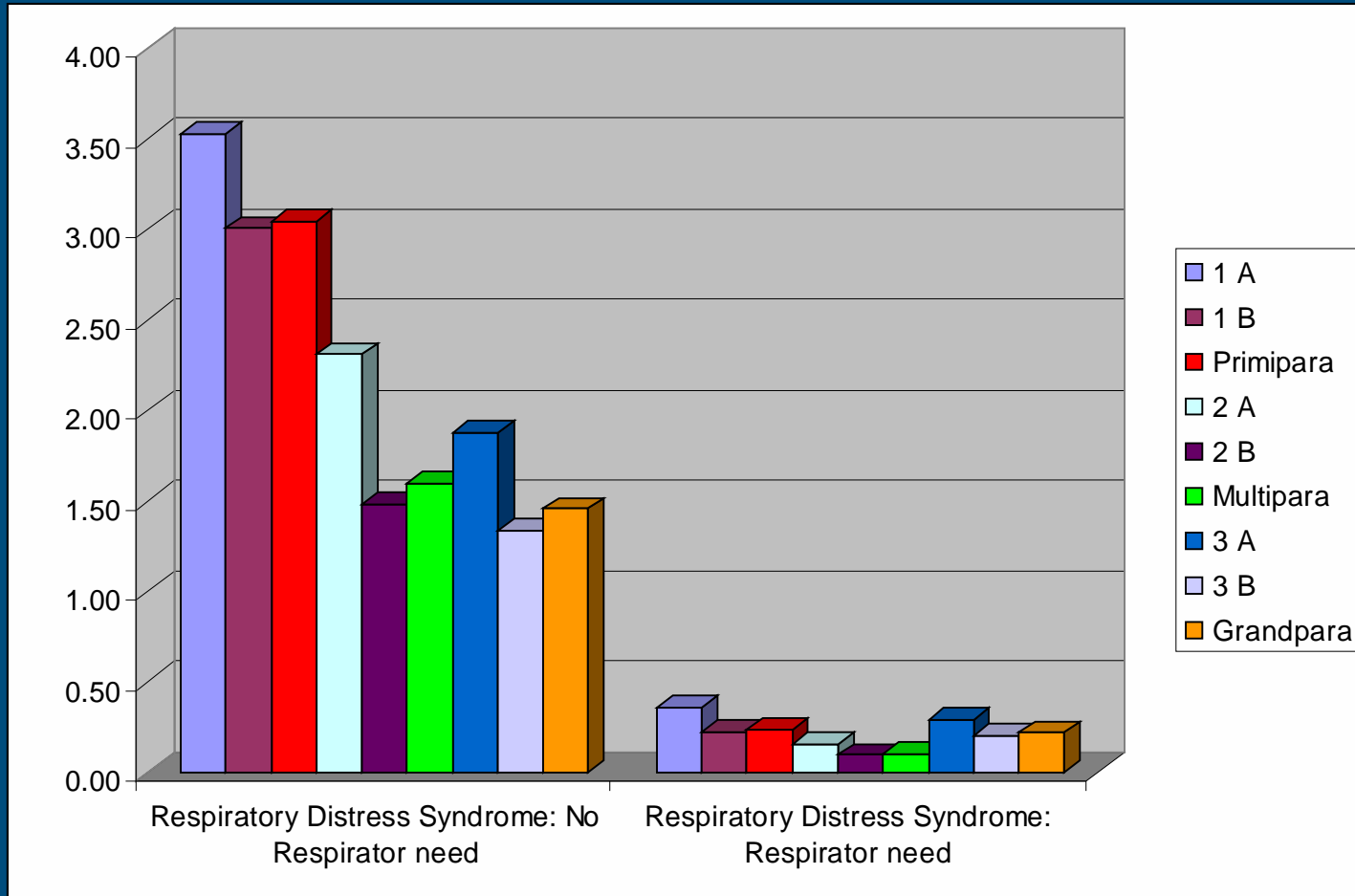
Friction: causes perinatal complications



S: = P < 0.001

in percentage

N = 188'339



1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



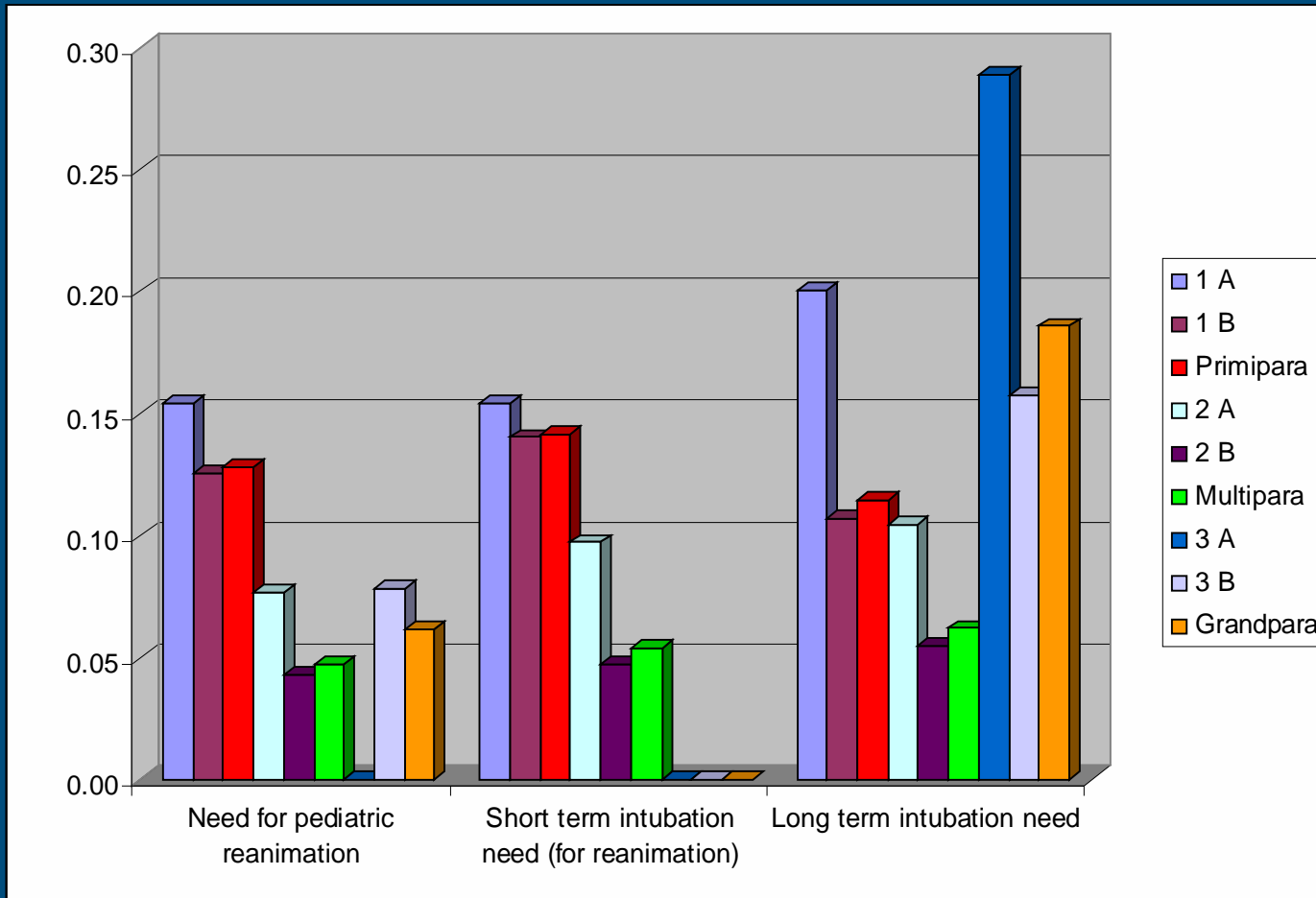
Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

Friction: increases perinatal treatment rates



S: = P < 0.001



in percentage

N = 188'339

1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

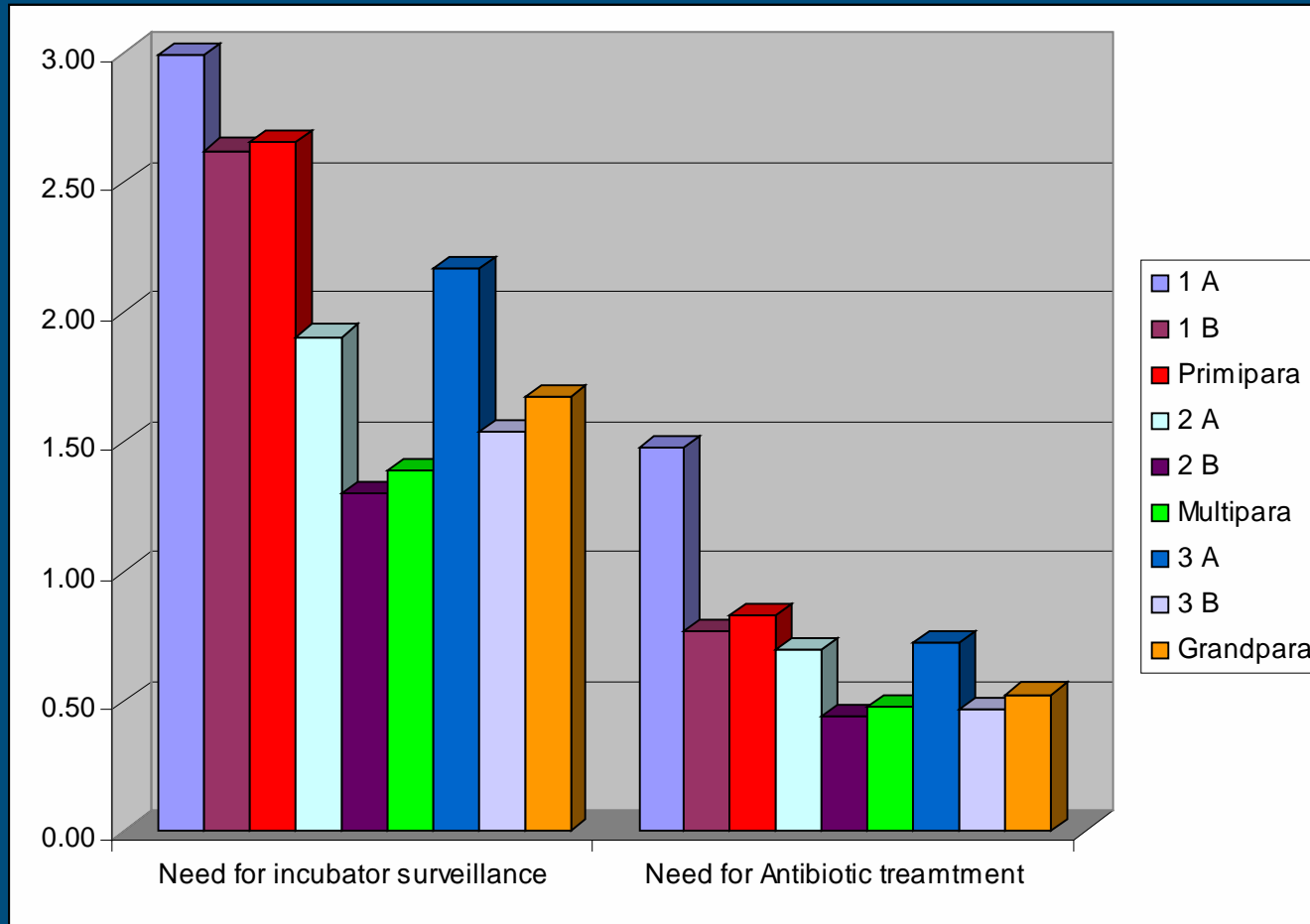
Friction: increases newborn treatment rates



S: = P < 0.001

in percentage

N = 188'339



1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



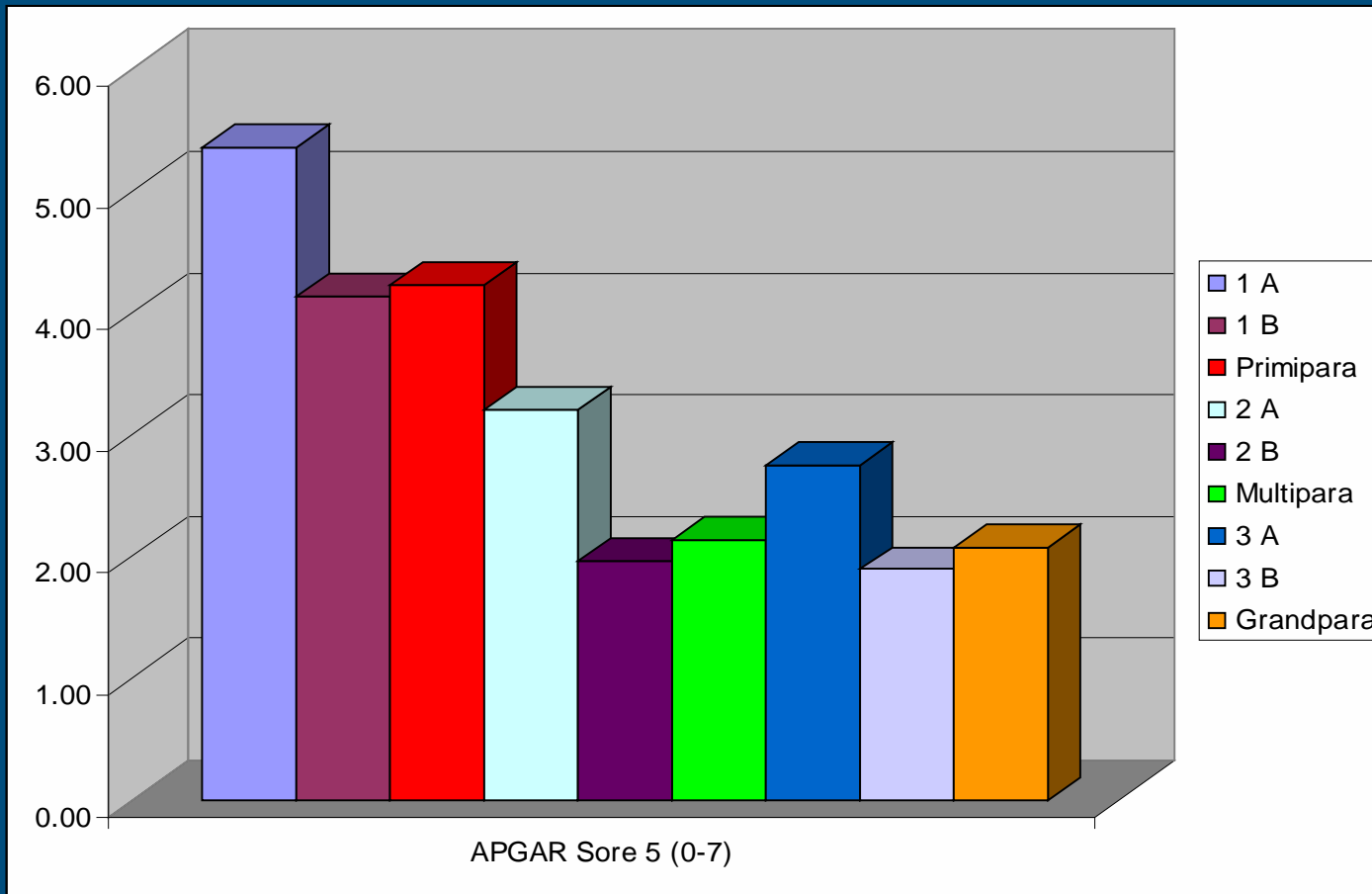
Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

Friction: reduces newborn outcome



S: = P < 0.001



in percentage

N = 188'339

1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



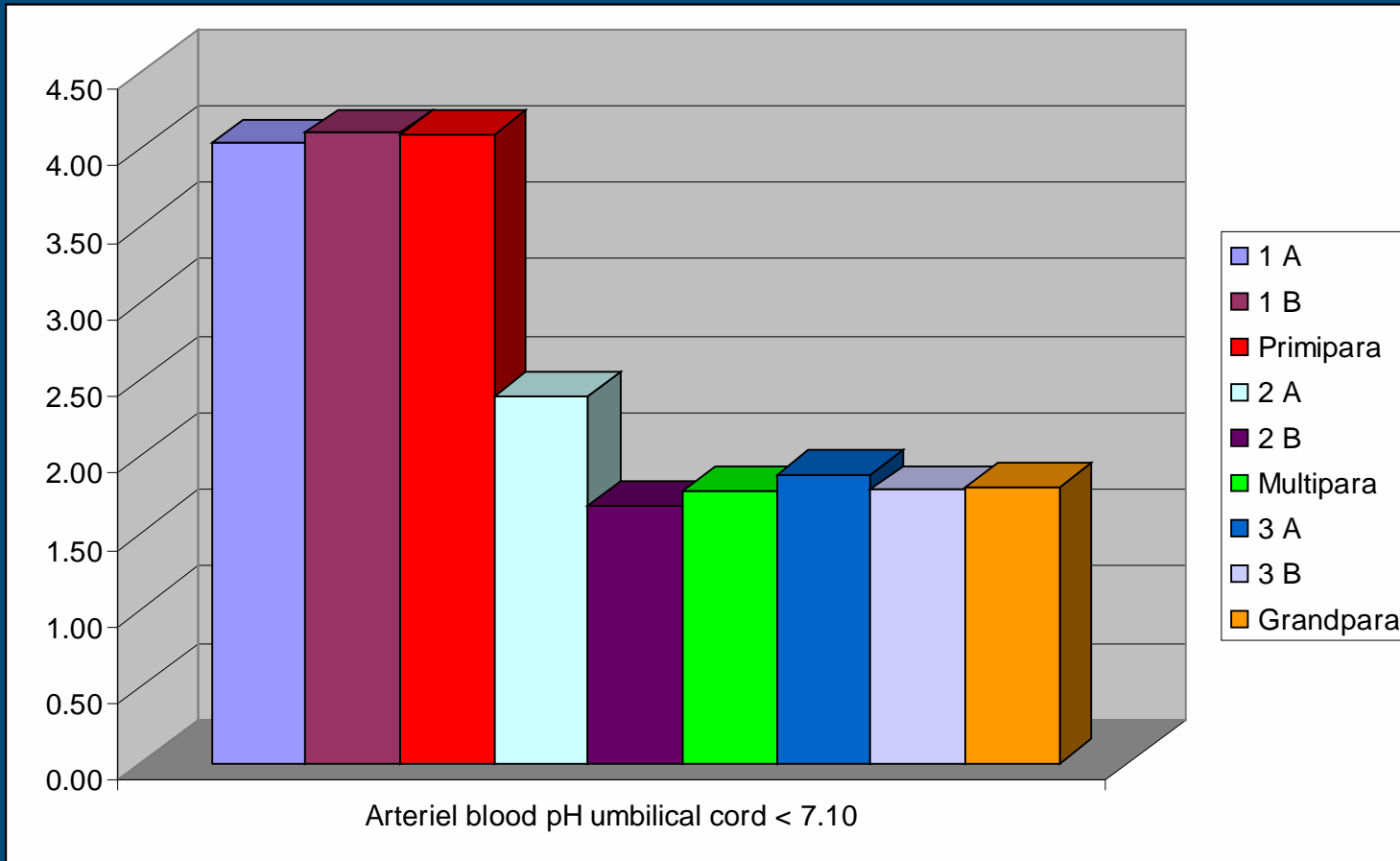
Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

Friction: reduces newborn outcome



S: = P < 0.001



in percentage

N = 188'339

1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

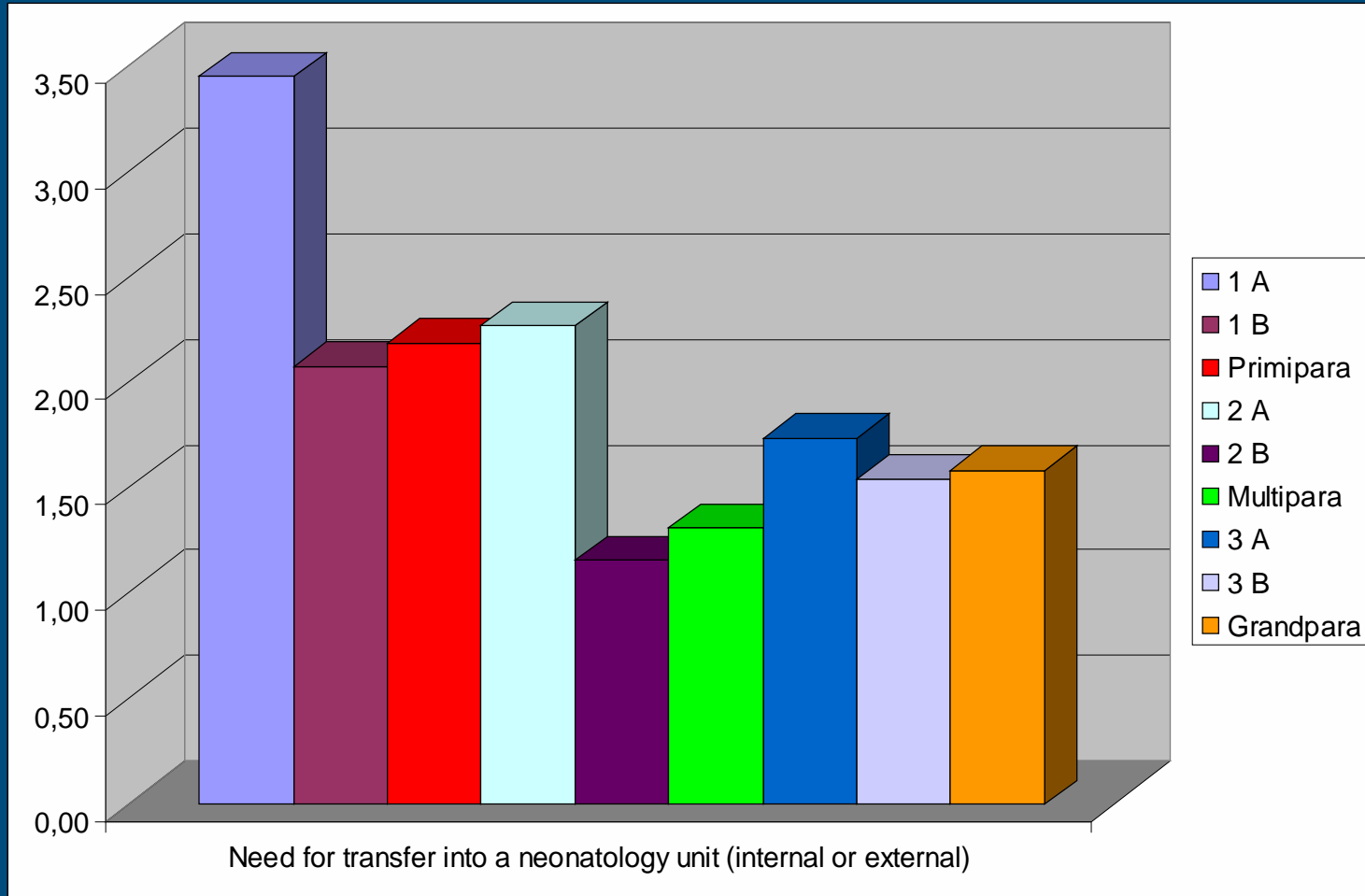
Friction: increases costs



S: = P < 0.001

in percentage

N = 188'339



1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

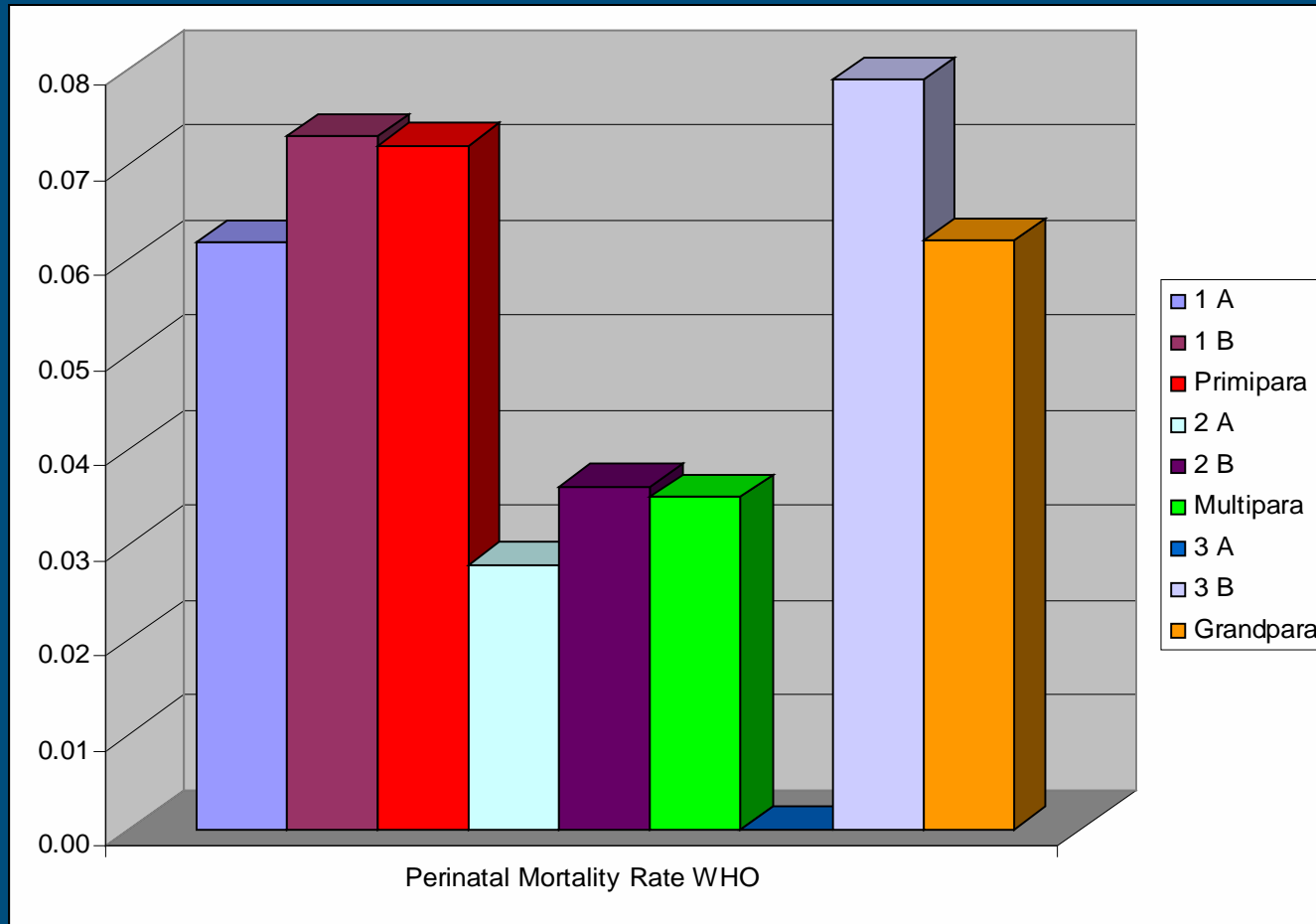
Friction: increases perinatal mortality rates



S: = P < 0.001

in percentage

N = 188'339



1 A: Primipara & > 4000 g

2 A: Multipara & > 4000 g

3 A: Multipara & > 4000 g

1 B: Primipara & < 4000 g

2 B: Multipara & < 4000 g

3 B: Multipara & < 4000 g



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending

Happy Child Birth, a global impact initiative



Happy Child Birth™
The revolution in Obstetrics

Confidential
Patent pending