

# WHO GLOBAL SURVEY: caesarean delivery in hypertensive disorders of pregnancy

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**OBJECTIVE:** to assess if women with hypertensive disorders of pregnancy have higher rates of caesarean deliveries than normotensive women

# METHODS

- 8 countries: Argentina, Brazil, Cuba, Ecuador, Mexico, Nicaragua, Paraguay and Peru
- 23 geographic areas
- 120 hospitals randomly selected

# METHODS

- Form for all women admitted to deliver during 3 months
- Data collection from 1 September 2004 to 30 March 2005



**IDENTIFICATION**

- a) Country code
- b) Province code
- c) Health facility code
- d) Study Subject number

**PERSONAL DATA OF THE WOMAN**

- 1. Marital status 
  - 1 = Single
  - 2 = Separated/divorced
  - 3 = Married/cohabitating
  - 4 = Widowed/other
- 2. Age in years
- 3. Total number of years attended school
- 4. Weight at last antenatal visit (kg)
- 5. Height of the woman (cm)

**REPRODUCTIVE HISTORY**

- 6. Number of pregnancies INCLUDING current pregnancy
- 7. Number of previous births EXCLUDING current delivery
- 8. Last baby birthweight (g)
- 9. Outcome of immediately previous pregnancy 
  - 1 = Abortion/miscarriage
  - 2 = Neonatal death
  - 3 = Stillbirth
  - 4 = Baby alive at discharge
- Q. 10 to 12, please reply 1= No 2= Yes
- 10. Vesico-vaginal/recto-vaginal fistula
- 11. Previous surgery on uterus and cervix (Myomectomy, removal of septum, cone biopsy, caesarean section, cervical cerclage)
- 12. Caesarean section at last pregnancy

**CURRENT PREGNANCY**

- Q. 13 and 14, Please reply 1= No 2= Yes
- 13. Has the subject been diagnosed as HIV positive?
- 14. During pregnancy or in labour, did the mother have any of the following conditions?
  - a) Prelabour rupture of membranes
  - b) Pregnancy induced hypertension
  - c) Chronic hypertension
  - d) Pre-eclampsia
  - e) Eclampsia
  - f) Cardiac/ Renal diseases
  - g) Chronic respiratory conditions
  - h) Uterine height low for gestational age
  - i) Diabetes mellitus
  - j) Malaria
  - k) Sickle cell anaemia
  - l) Severe anaemia (Hb < 7g/l)
  - m) Vaginal bleeding in 2nd half of pregnancy
  - n) Pyelonephritis or urinary infection
  - o) Any genital ulcer disease
  - p) Condyloma Acuminata
  - q) Other medical conditions
  - r) Any condition suggesting HIV/AIDS
- 15. Total number of antenatal visits

**LABOUR AND DELIVERY**

- 16. Was the patient referred for delivery? 
  - 1= No
  - 2= Yes
- 17. If she was referred from where or by whom? 
  - 1= Secondary/District Level
  - 2= Primary Health Care
  - 3= Community Midwife
  - 4= TBA
  - 5= Other
- 18. Total number of neonates delivered.
- 19. Onset of labour 
  - 1 = Spontaneous
  - 2 = Induced
  - 3 = No labour
- If Q.19 = (1 or 3), please go to Q22.
- 20. Indications for induction of labour. Please reply 1 = No 2 = Yes
  - a) Fetal death
  - b) Intrauterine growth retardation
  - c) Fetal distress
  - d) Multiple pregnancy
  - e) Prelabour rupture of membranes
  - f) Chorioamnionitis
  - g) Vaginal bleeding
  - h) Pre-eclampsia/eclampsia
  - i) Post term, more than 42 weeks
  - j) Elective induction
  - k) Maternal request
  - l) Any other pregnancy complication
  - m) Any other maternal medical complication
- 21. Method of induction. Please reply 1= No 2= Yes
  - a) Oxytocin
  - b) Misoprostol
  - c) Other prostaglandin
  - d) Sweeping membranes
  - e) Artificial rupture of membranes/amniotomy
  - f) Mechanical e.g. Laminaria
  - g) Nipple stimulation
- 22. Please indicate who attended the delivery/or performed caesarean section / laparotomy 
  - 1 = OBGYN specialist
  - 2 = Resident MD in training
  - 3 = General surgeon
  - 4 = General practitioner
  - 5 = Nurse
  - 6 = Midwife
  - 7 = Any paramedic
  - 8 = Medical student
- 23. Anaesthesia/analgesia during labour 
  - 1 = Epidural
  - 2 = Spinal
  - 3 = Injectable analgesic
  - 4 = No analgesia/anaesthesia
  - 5 = Alternative Method
- 24. Type of anaesthesia/ analgesia during delivery or caesarean section 
  - 1 = General
  - 2 = Epidural
  - 3 = Spinal
  - 4 = Local
  - 5 = No Anaesthesia
- 25. Please indicate who gave anaesthesia during delivery or Caesarean section. 
  - 1 = Anaesthesiologist
  - 2 = Obstetrician General practitioner
  - 3 = Resident MD in training
  - 4 = Paramedic/Nurse Anaesthetist
  - 5 = Nurse/midwife
  - 6 = Anaesthetist technician
  - 7 = Other



**MATERNAL OUTCOME**

- Q. 26 to 34, Please reply** 1= No 2= Yes
26. Did the patient receive any antibiotic treatment?
27. If Q 26 = 2, when were the antibiotics given?
- a) Antenatally
- b) At admission to labour ward
- c) During or immediately after vaginal delivery
- d) Prophylactic before caesarean section
- e) Immediately after caesarean section
- f) At any other time postnatally
28. Was any uterotonic for the treatment of postpartum haemorrhage used?
29. Did the patient receive blood transfusion?
30. What was the indication for blood transfusion?
- a) Anaemia during pregnancy
- b) Antepartum haemorrhage
- c) Intrapartum haemorrhage
- d) Postpartum haemorrhage
31. Third or fourth degree perineal laceration
32. Hysterectomy
33. Post partum fistula (RVF/VVF)
34. Admission of the patient to Intensive/ Special care unit
35. If Q 34 = 2, write total number of days spent at the Intensive / Special care unit (8 = 8 days or more)
36. Maternal status at discharge from hospital or at the 8th day post partum.
- 1 = Alive 3 = Alive but referred to higher level of care or ICU in same hospital
- 2 = Dead
37. Date of maternal discharge from the hospital or transfer or death
- |     |       |      |
|-----|-------|------|
| Day | Month | Year |
|     |       |      |

**NEONATAL DATA**

38. If multiple birth, birth order (1st, 2nd, 3rd etc.)
39. Date of delivery
- |     |       |      |
|-----|-------|------|
| Day | Month | Year |
|     |       |      |
40. Best obstetric estimate of gestational age at delivery (in completed weeks)
41. Fetal presentation at delivery
- 1 = Cephalic 2 = Breech 3 = Other
42. Final mode of/ assistance for delivery
- 1 = Spontaneous 6 = Intrapartum C- Section
- 2 = Forceps extraction 7 = Assisted breech or breech extraction
- 3 = Vacuum extraction
- 4 = Elective C-Section 8 = Internal version and extraction
- 5 = Emergency C- Section, no labour 9 = Laprotomy for ruptured uterus
- 10 = Spatula
43. Status at birth
- 1 = Alive 2 = Fresh stillbirth 3 = Macerated stillbirth
44. Apgar score at 5 minutes
45. Birthweight (g)
46. Head circumference (cm)
47. Infant sex ( 1 = Female 2 = Male)
48. Any congenital malformation? 1= No 2 = Yes

**CAESAREAN SECTION**

49. If caesarean section, please select the indications below
- 1 = No 2 = Yes
- a) Intrauterine growth retardation
- b) Fetal distress
- c) Pre-eclampsia/Eclampsia
- d) Post term, more than 42 weeks
- e) 3rd trimester vaginal bleeding
- f) Cephalopelvic disproportion/dystocia/failure to progress/failed vacuum extraction or forceps
- g) Multiple pregnancy
- h) Suspected/imminent uterine rupture
- i) Postmortem caesarean section
- j) Breech or other malpresentation
- k) Previous caesarean section
- l) Failed induction
- m) Tubal ligation/sterilization
- n) Maternal request
- o) HIV
- p) Genital Herpes/ extensive condyloma
- q) Any other pregnancy complication
- r) Any other fetal indication
- s) Any other maternal medical complication
- t) Previously repaired vesico- vaginal or recto- vaginal fistula

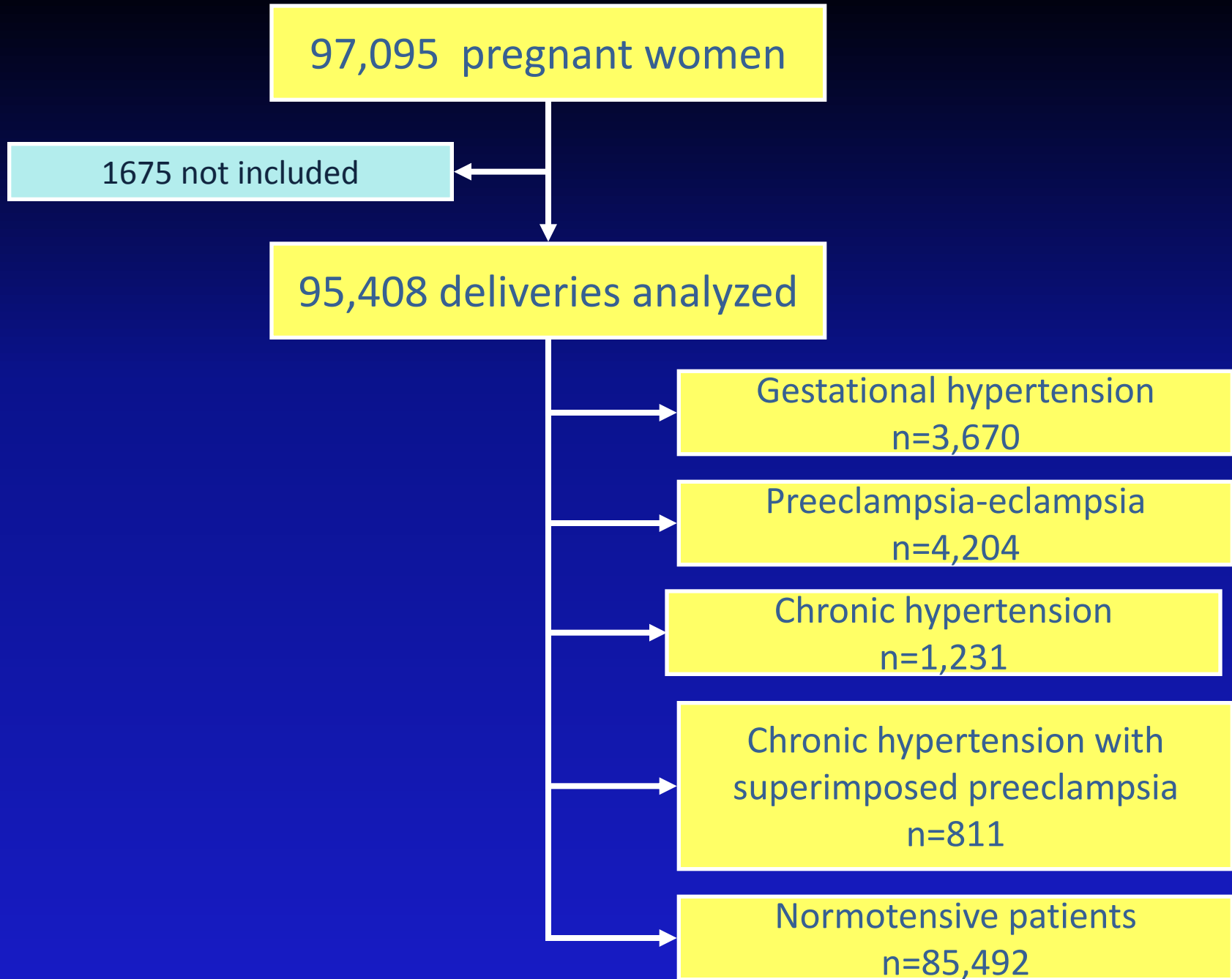
**NEONATAL OUTCOME**

50. Admission of the newborn to Intensive/ Special care unit
- 1= No 2= Yes
51. If Q 50 = 2, write total number of days spent at the Intensive/ Special care unit ( upto 7 completed days)
52. Newborn status at discharge from the hospital or at the 7th day postpartum
- 1 = Alive and well
- 2 = Alive with obstetric trauma
- 3 = Alive but referred to a higher level or special care unit
- 4 = Dead within 24 hours of birth
- 5 = Dead after 24 hours of birth
53. When was breastfeeding started?
- 1 = Immediately after birth
- 2 = Between 1 hour and 24 hours after birth
- 3 = After first day
- 4 = Breastfeeding not initiated before discharge or at 7 completed days after delivery.
54. Date of neonatal discharge from the hospital.
- |     |       |      |
|-----|-------|------|
| Day | Month | Year |
|     |       |      |

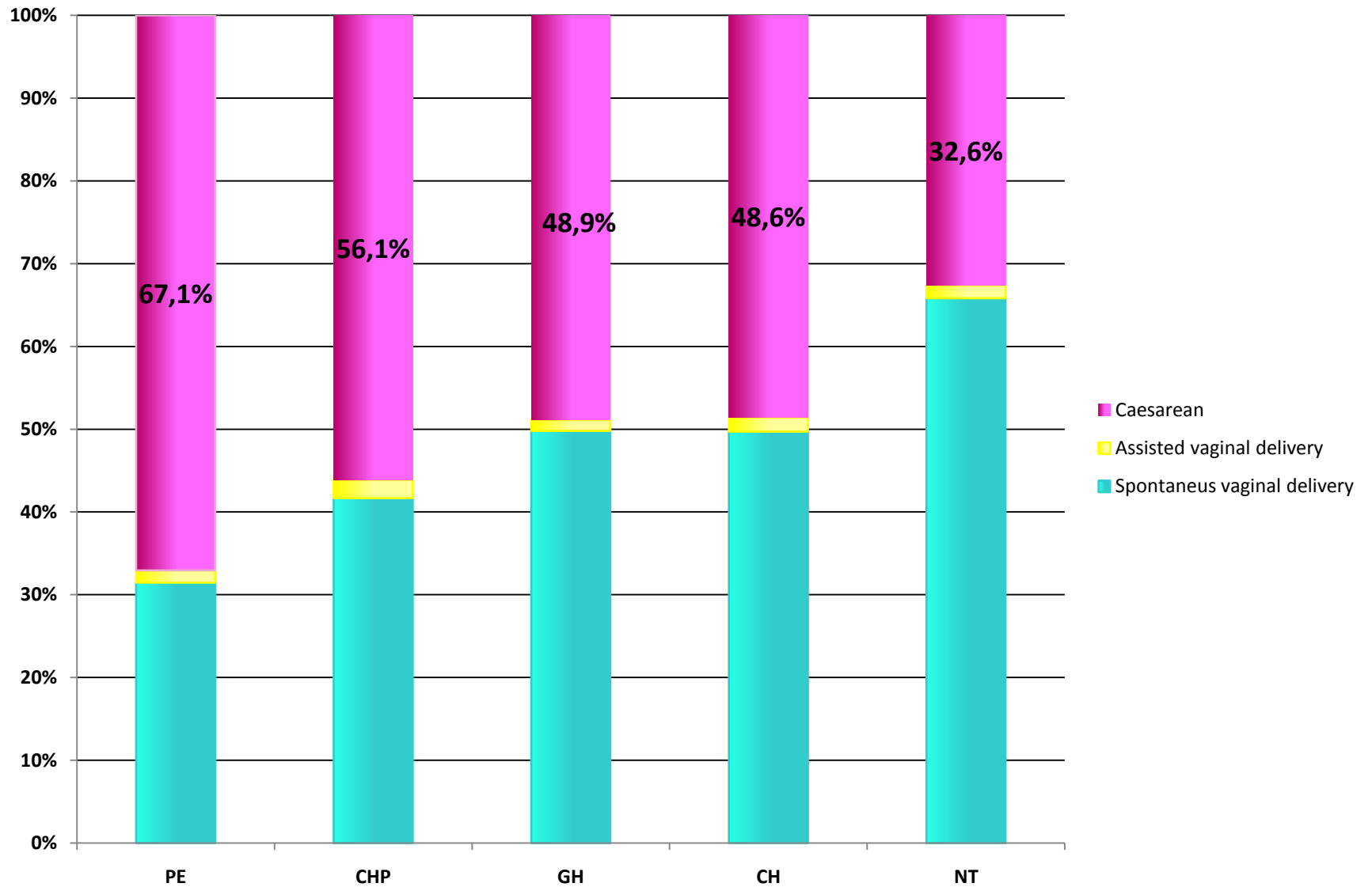
Data Collector's Code

Data Collector's Signature \_\_\_\_\_

Date \_\_\_\_\_

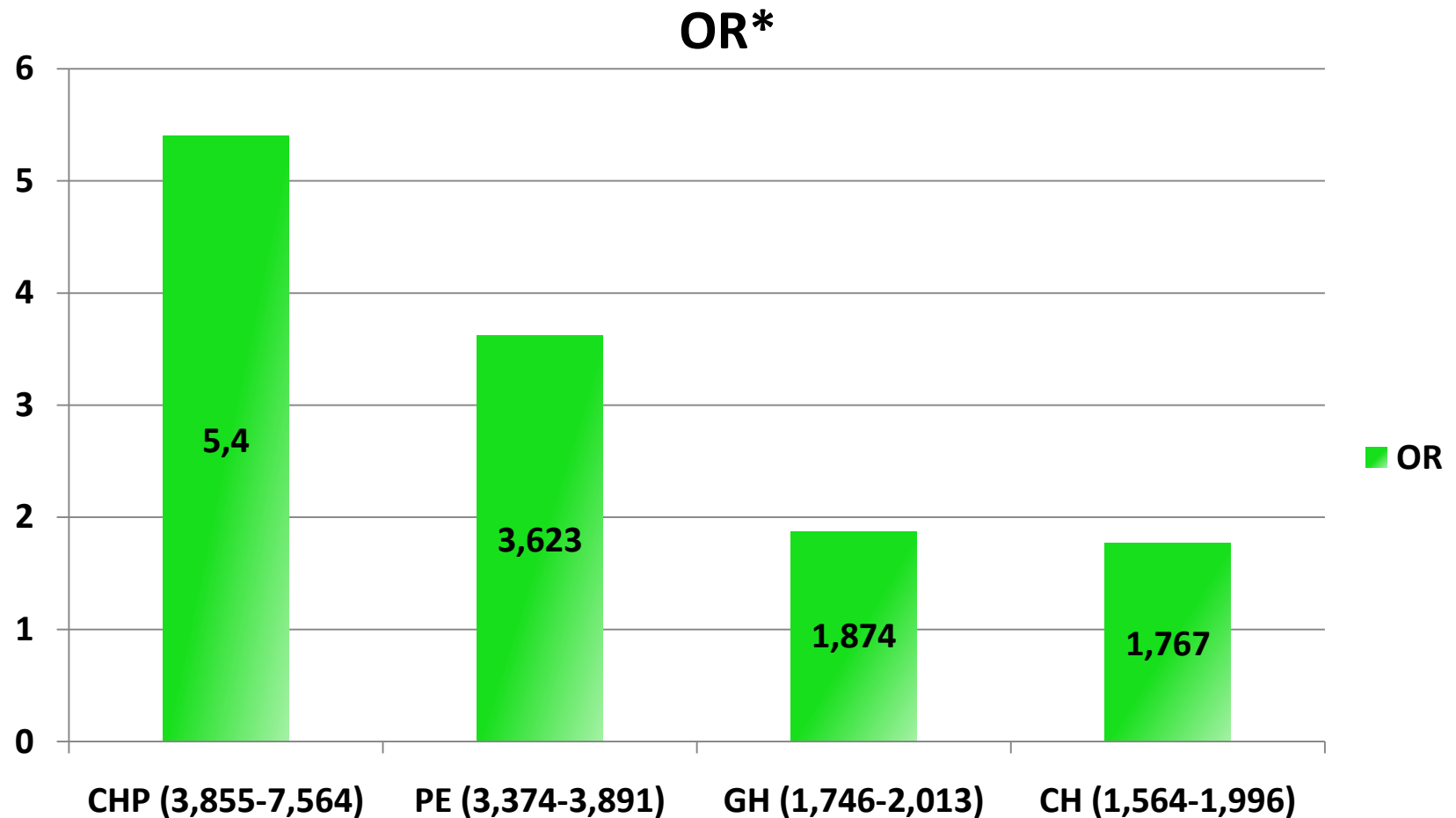


# RESULTS





# RESULTS



\*OR adjusted for country, marital status, education, primigravity, twins, death in previous pregnancy, antenatal care, renal and cardiac disease, diabetes, anaemia, admission to ICU, stay at hospital >7 days, maternal death, neonatal death, preterm, weight >1000, weight >2500, 7 days or more in NICU

**CONCLUSION:** hypertensive disorders of pregnancy are a risk factor for caesarean delivery in Latin American countries.

Particularly in women with preeclampsia, eclampsia and chronic hypertension with superimposed preeclampsia.

Women with hypertensive disorders of pregnancy should be assisted in centers with the facilities to perform a caesarean if it is necessary.



THANK YOU