

Secular Trends in Postpartum Haemorrhage Rates in Public Obstetric Units in Hong Kong

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Introduction

- Postpartum hemorrhage (PPH) accounts for up to 35% of all maternal mortalities worldwide.
- A progressively increasing incidence of PPH has been reported in many developed countries in recent decades, including Hong Kong.
- This rising trend in PPH has been ascribed to various risk factors, such as increase in maternal age, increasing rate of induction of labour and caesarean sections.

Research article

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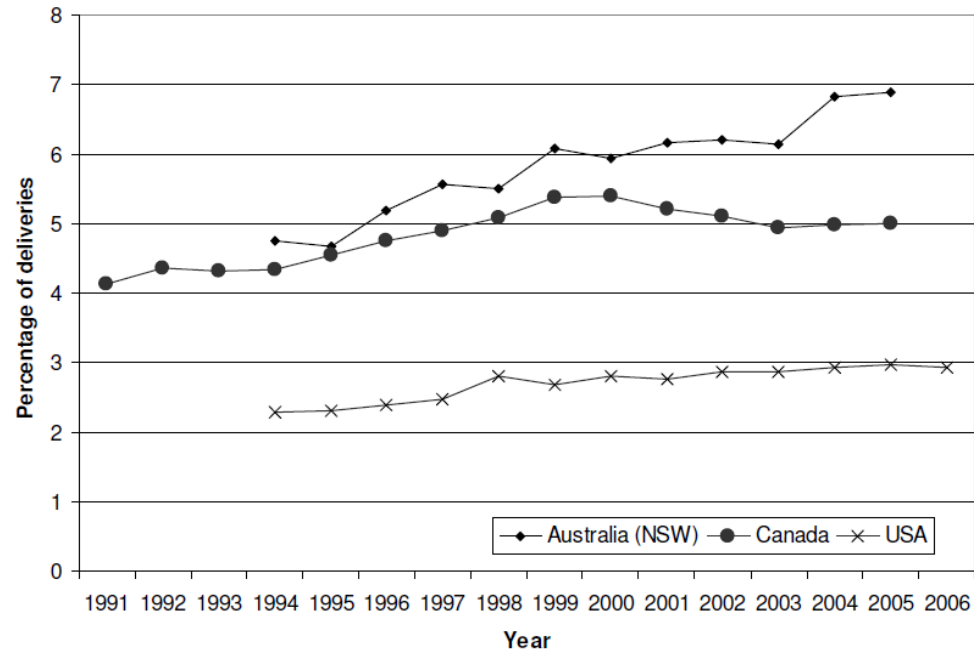
Trends in postpartum hemorrhage in high resource countries: a review and recommendations from the International Postpartum Hemorrhage Collaborative Group

Marian Knight^{*1}, William M Callaghan², Cynthia Berg², Sophie Alexander³, Marie-Helene Bouvier-Colle⁴, Jane B Ford⁵, KS Joseph^{6,11}, Gwyneth Lewis^{1,7}, Robert M Liston⁸, Christine L Roberts⁵, Jeremy Oats⁹ and James Walker¹⁰

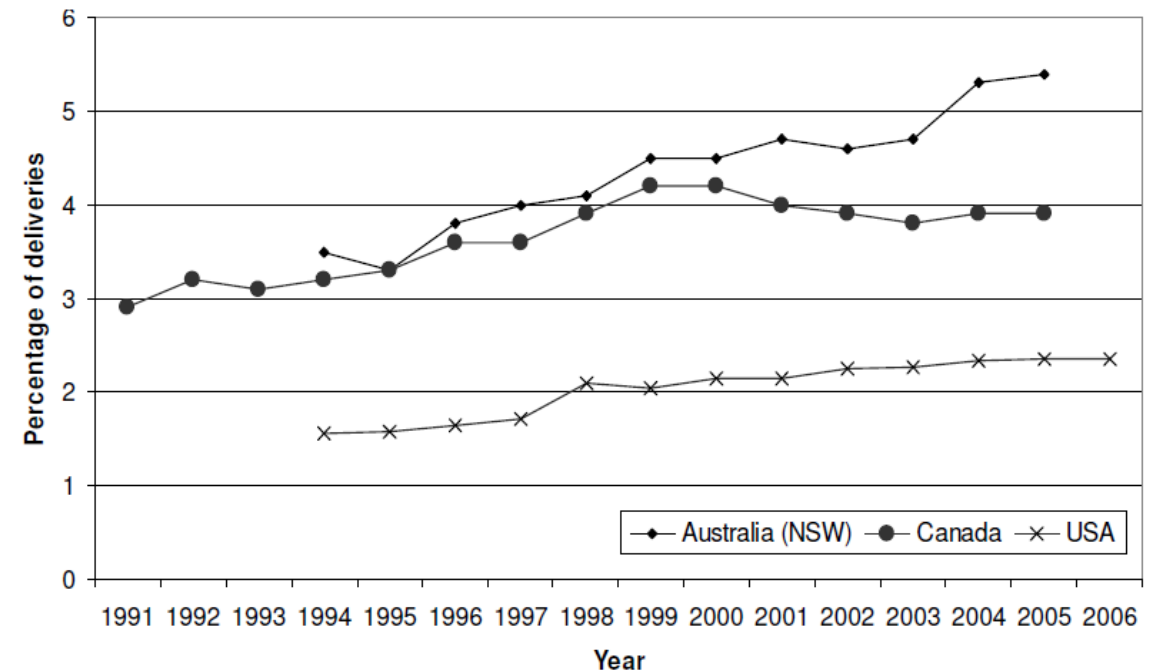
BMC Pregnancy and Childbirth 2009, **9**:55 doi:10.1186/1471-2393-9-55

a)

All PPH



Atonic PPH



b)

Ever-increasing incidence of postpartum haemorrhage in Hong Kong: a perspective

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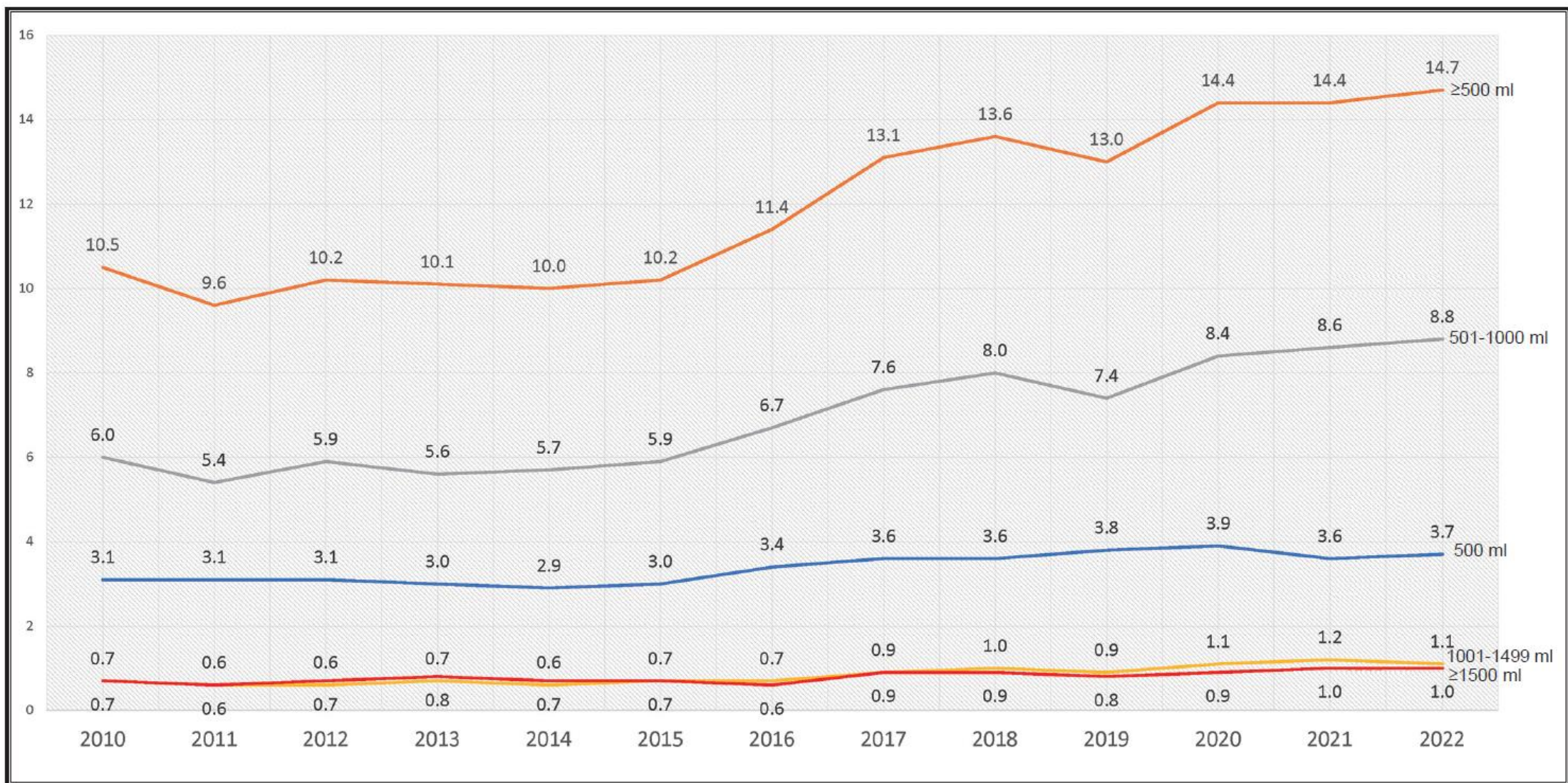


Figure 1. Incidences of postpartum haemorrhage (as percentages of maternity cases) in public hospitals from 2010 to 2022

Objective

- In view of the increase in PPH over HA, PPH concern group is set up to review the incidence, cause and risk factors for PPH in all obstetric units under hospital authority.

Methodology

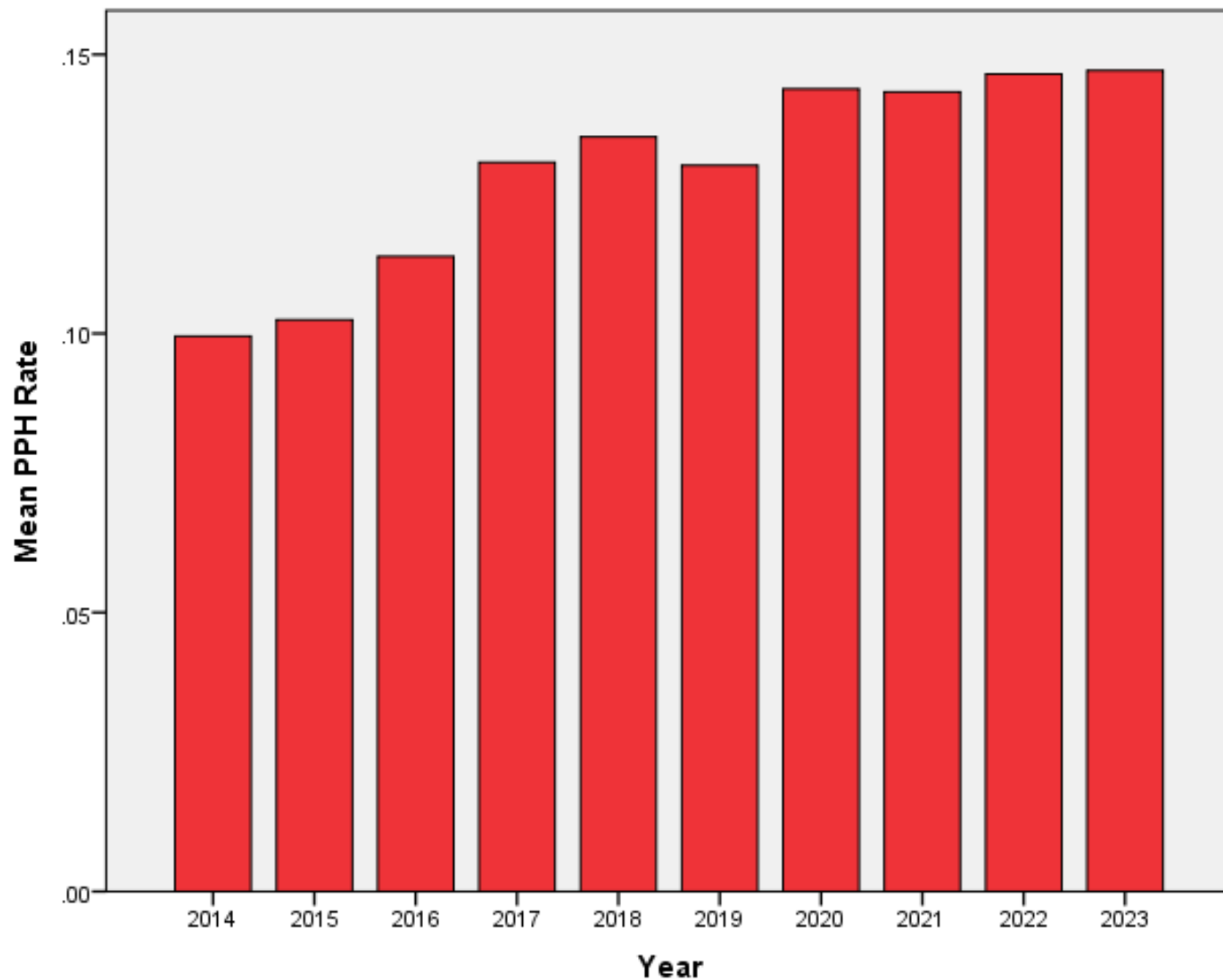
- Retrospective cohort
- 2014-2023
- All women with PPH in all obstetric units under HA (KWH, PYNEH, PWH, PMH, QEH, QMH, TMH, UCH)
- Retrieved from CDARS
- Risk factors and clinical details were reviewed

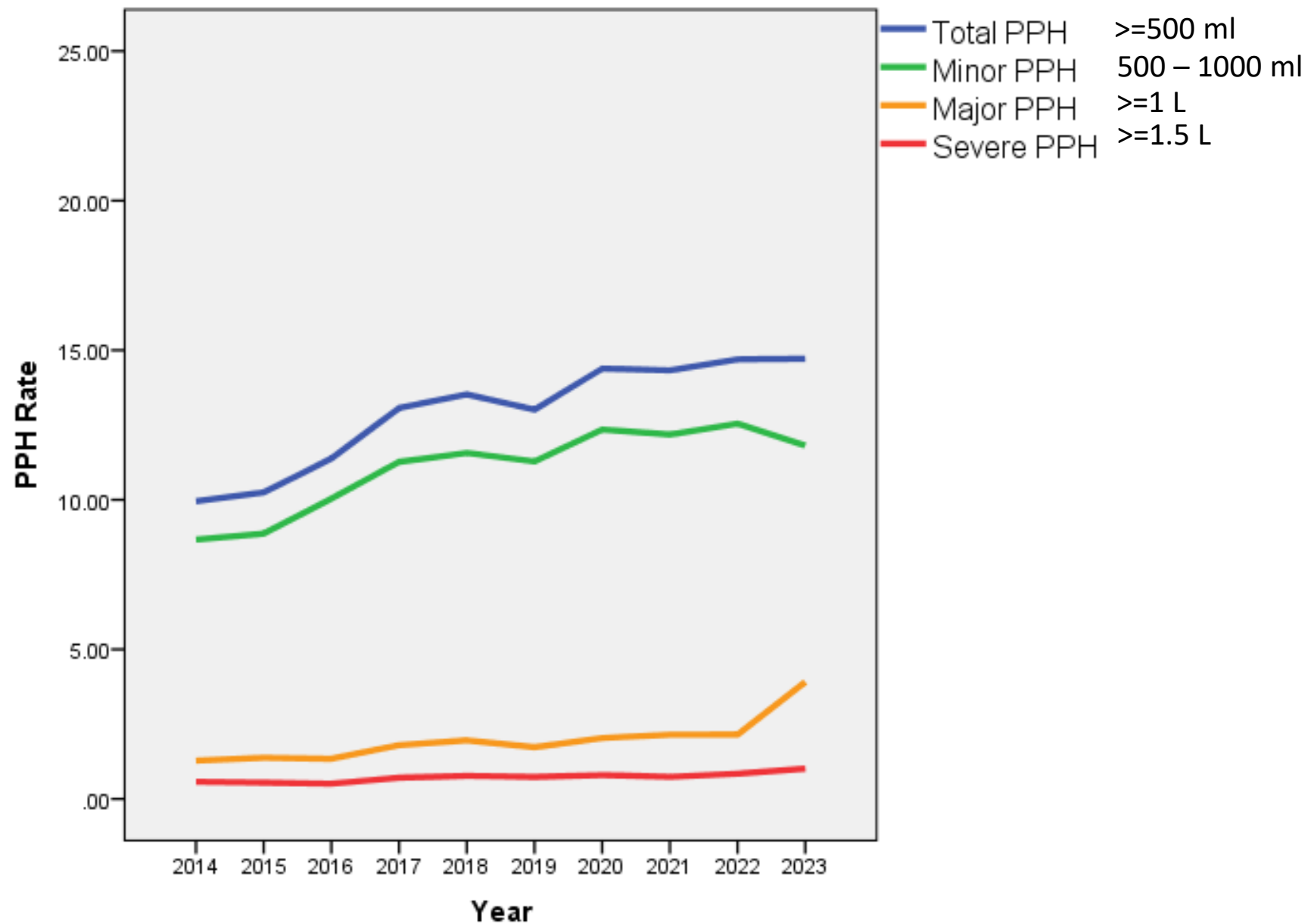
Result and outcome

- Total number of maternities 314,389
- Overall PPH rate (≥ 500 ml) : 12.6%
- Major PPH rate (≥ 1 L): 1.77% (n=5570)
- Severe PPH rate (≥ 1.5 L): 0.69% (n=2180)
- Peripartum hysterectomy rate: 0.06% (n=180)
- Maternal mortality rate: 5.4 per 100,000 (n=17)

Total PPH rates

Overall PPH rates increased from 10% to 14.7%

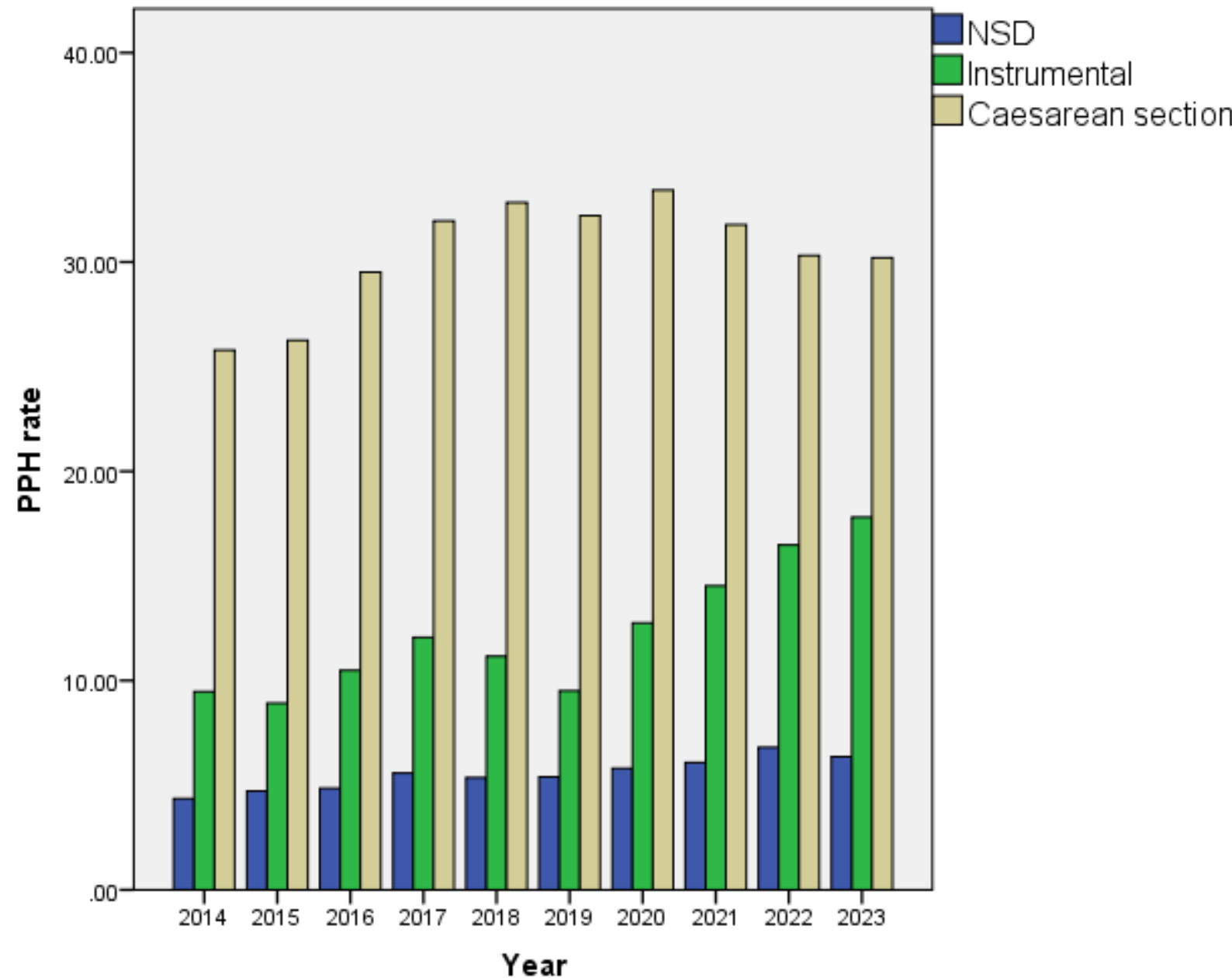


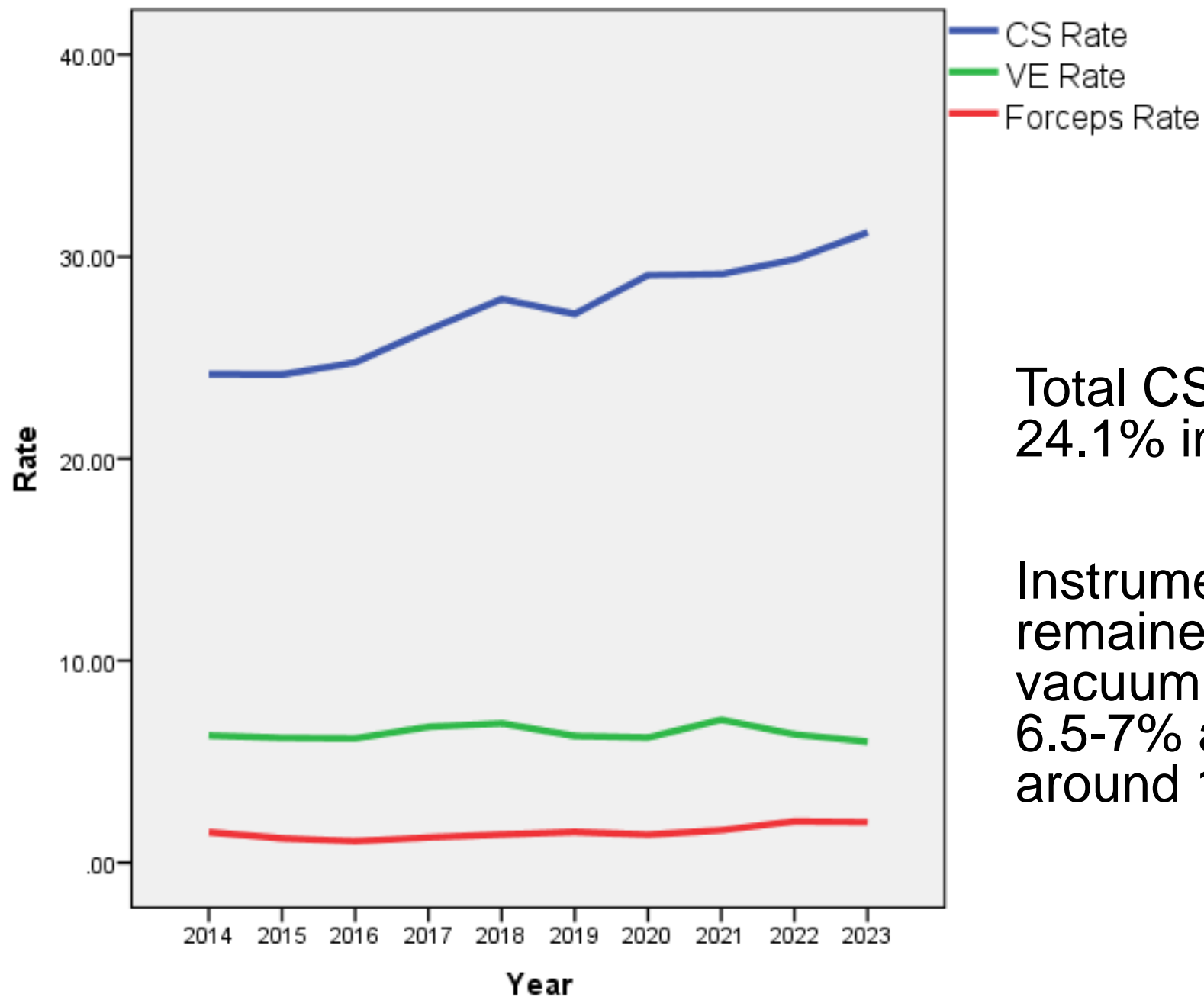


The increase in PPH rates is mostly contributed by the increase in minor PPH. The rates of major and severe PPH is only mildly raised.

PPH rates and mode of delivery

Caesarean section has highest PPH rate but significant increase in overall PPH rates is observed with all modes of delivery



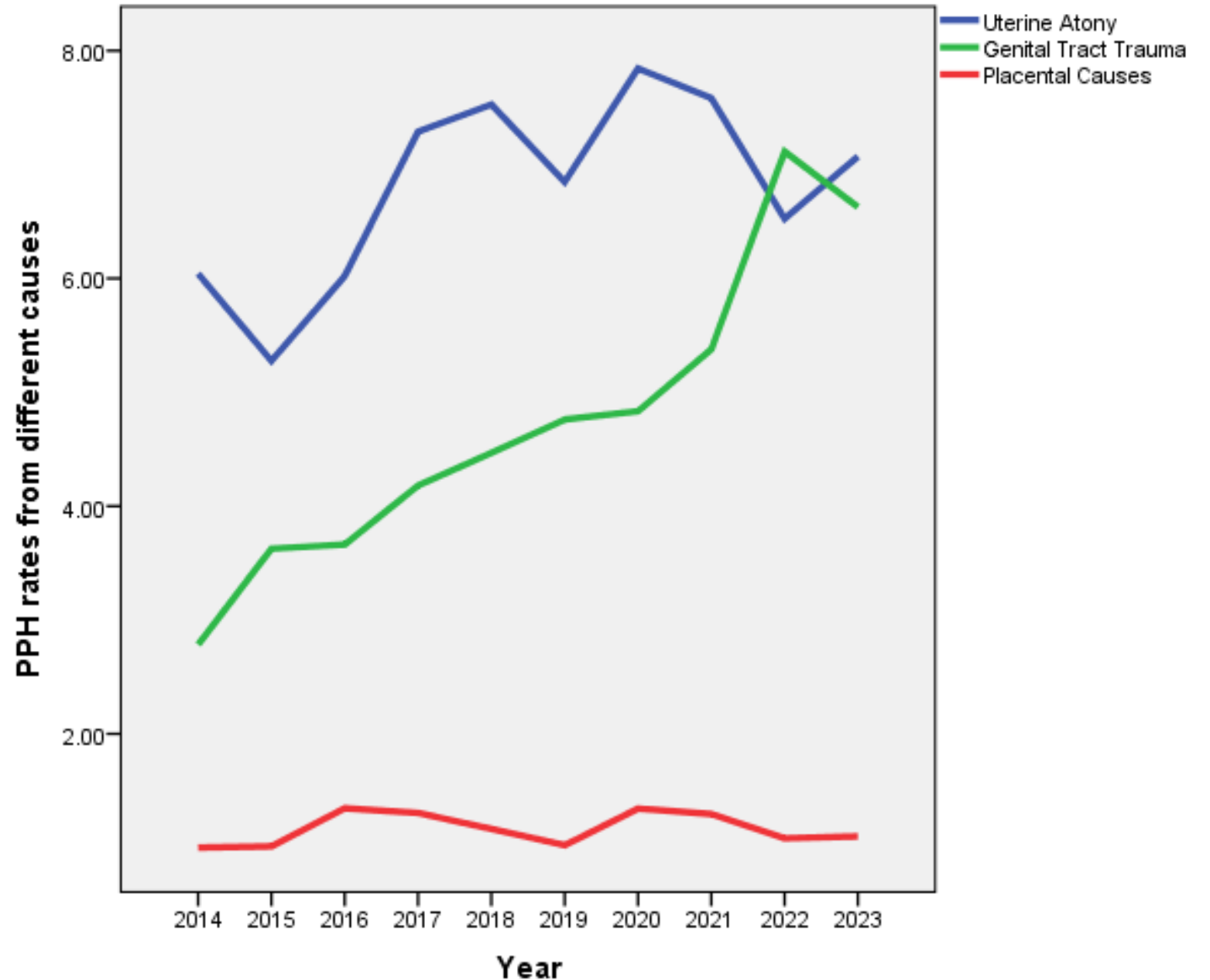


Total CS rate has risen from 24.1% in 2014 to 31.2% 2023

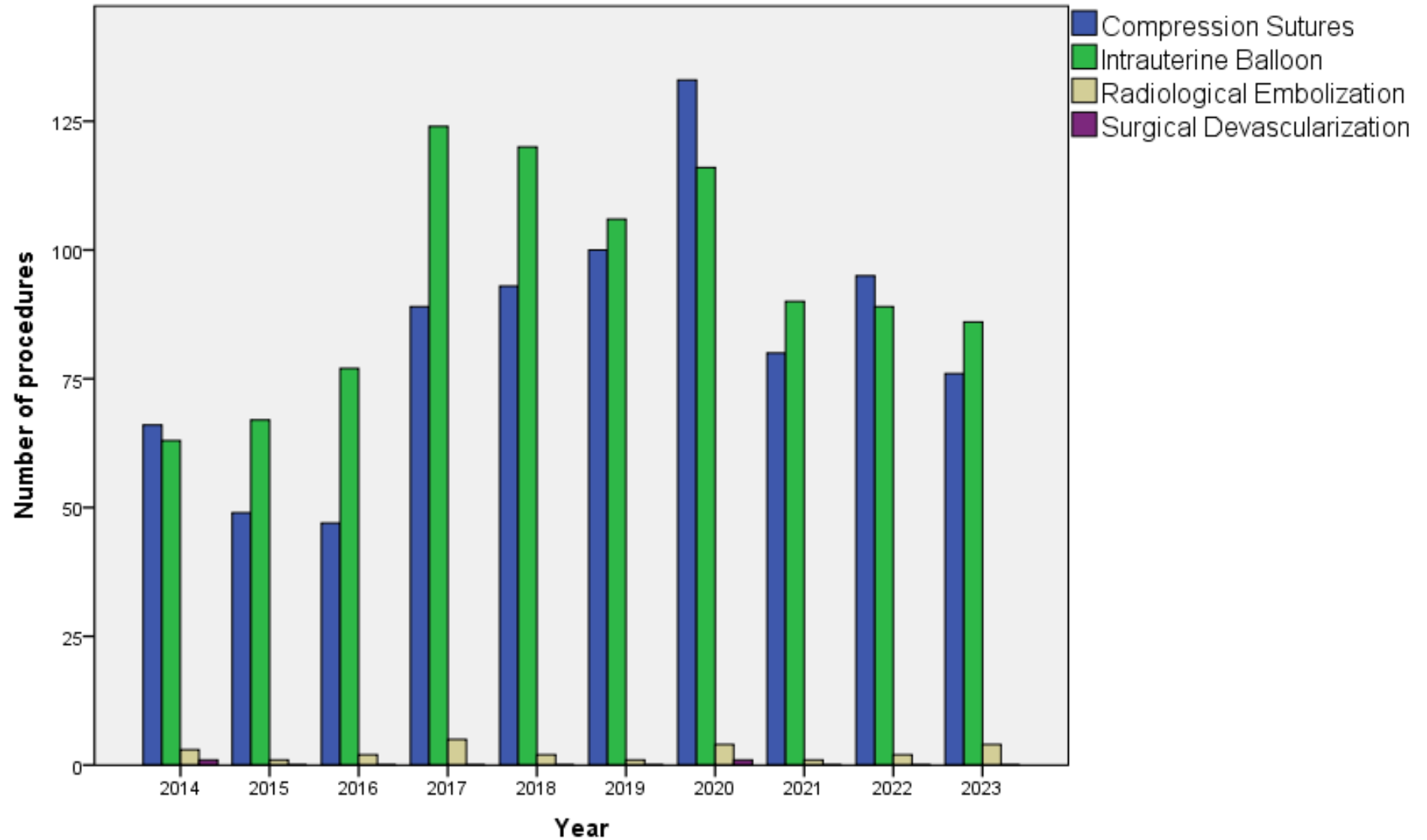
Instrumental delivery rates have remained relatively constant with vacuum extraction at around 6.5-7% and forceps delivery at around 1.5 to 2%

PPH rates according to cause of PPH

Significant increases in PPH rates seen due to uterine atony and genital trauma. The PPH rates from praevia appears constant

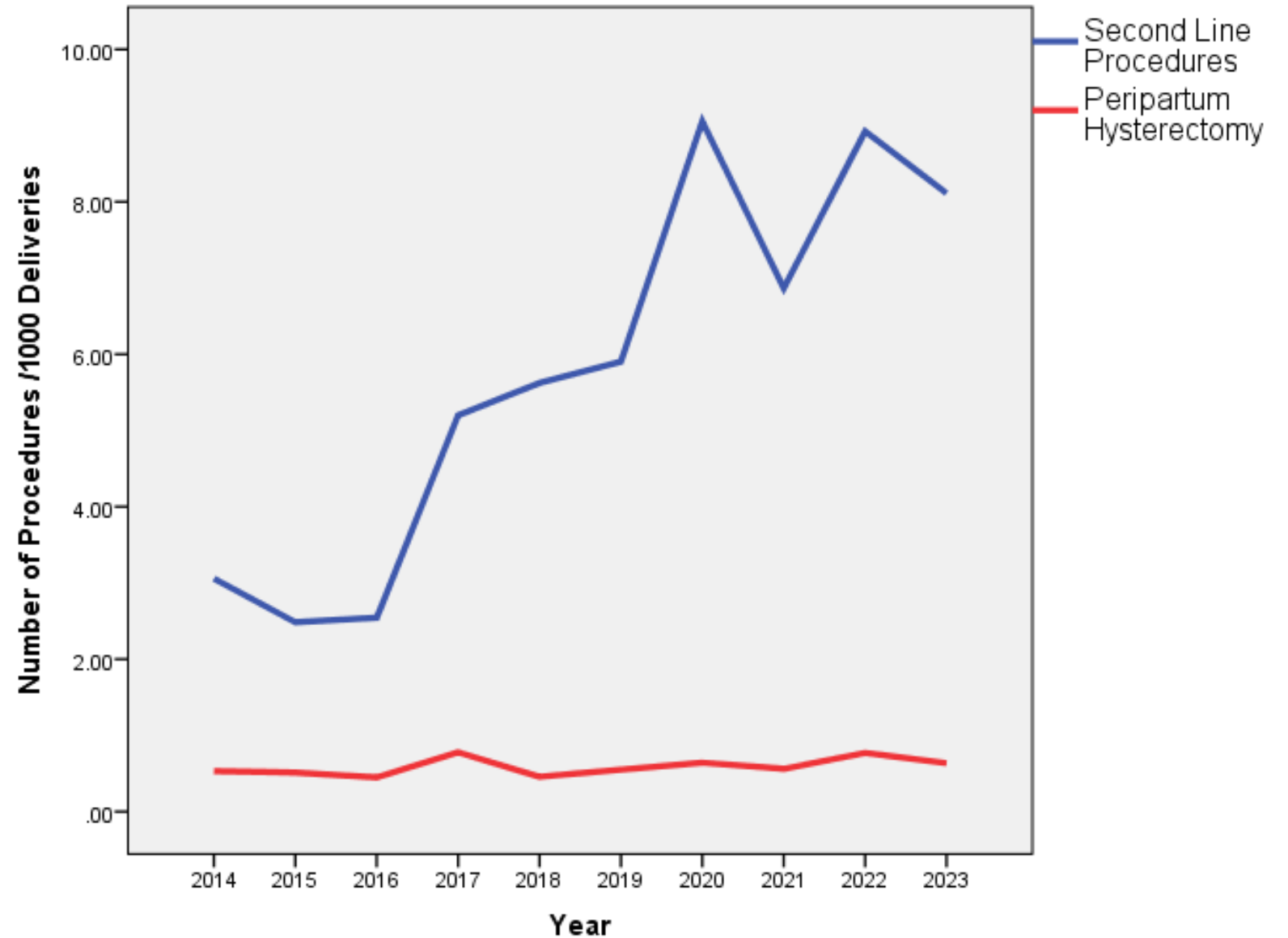


Second Line Surgical Procedures



Second Line surgical Procedures Vs Hysterectomy rates (per 1000 deliveries)

While the number of
second line procedures has
been increasing,
peripartum hysterectomy
rates remain constant



Logistic regression – significant risk factors associated with all PPH ($\geq 500\text{ml}$)

Risk factor	B	SE	P-value	Odds ratio	95% CI
Caesarean section	1.696	0.013	<0.0001	5.45	5.31- 5.59
Antepartum Haemorrhage	0.713	0.024	<0.0001	2.04	1.95 -2.14
Multiple pregnancy	0.678	0.030	<0.0001	1.969	1.86-2.08
Advanced Age > 35	0.226	0.012	<0.0001	1.25	1.22-1.28
Antenatal anaemia	0.203	0.024	<0.0001	1.23	1.17 -1.29
Previous CS	0.163	0.017	<0.0001	1.17	1.14-1.22
Nulliparity	0.149	0.014	<0.0001	1.192	1.16-1.23
Induction of labour	0.103	0.013	<0.0001	1.11	1.08-1.14
Diabetic disorders in pregnancy	0.067	0.016	<0.0001	1.07	1.04-1.10

Summary

- There is a demonstrable and significant increase in PPH rates across HA during the study period.
- The increase in PPH rates is consistent regardless of the mode of delivery, with the greatest increase in the rates of minor PPH (blood loss between 500 - 1000 ml).
- The increase in PPH rates are mainly contributed by uterine atony and genital tract trauma

- There is an increasing utilization of second line surgical procedures for management of PPH and the peripartum hysterectomy remained stable
- Caesarean delivery is the most significant risk factor for PPH and its incidence is increasing.

Planned actions

- 1) Use of carbetocin to all caesarean sections (evidence-based) in all units & monitor the incidence of PPH, mainly targeting at the minor PPH (500 to 1,000 ml)
- 2) Early & liberal use of 2nd line measures, mainly targeting for the major & severe PPH (>1,000 ml)
- 3) Training to improve the repair of genital tract trauma after normal vaginal delivery or instrumental deliveries
- 4) Investigate the incidence of rising CS rate

Acknowledgements

PPH concern group members

- ▶ Dr WC Leung Dr Jack Wong
- ▶ Dr WK To
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- ▶ Prof Liona Poon Dr Natalie Wong
- ▶ Dr KW Cheung Dr Mimi Seto
- ▶ Dr Florrie Yu Dr Baron Tse
- ▶ Dr TK Lo
- ▶ Dr Diana Lee

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the left and right sides of the frame, creating a modern, layered effect. The central area is a plain white background.

Thank you