

Review Of Postnatal Maternal Readmissions in a District General Hospital (United Kingdom)

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Introduction

Maternal readmission after childbirth is considered an indicator of maternal morbidity and quality of care provided by a hospital. This adversely impacts the mother – infant bonding but also increases the cost of maternity care. According to National and Maternity and Perinatal Audit Clinical report 2022, postnatal readmission rates were higher following a caesarean birth compared with a vaginal birth in both England (4.3% vs 2.9%) and Wales (4.7% vs 3.3%).

Objective

We aim to study all cases of postnatal maternal readmission over a specified period to understand common indications and identify changes in practice that may decrease the chances of readmission, especially among those having a caesarean birth.

To ascertain the number of women readmitted to hospital within 30 days of delivery

To identify the reasons for readmission to hospital

To describe the outcomes of readmission – investigations, medication, management and length of hospital stay

To Identify any risk factors for readmissions

Identify preventive measures which could have been put in place at the time of discharge

Identify changes in practice that may decrease the chance of readmission.

Design and Methodology

Retrospective study conducted as an audit in a district general hospital in the UK.

The audit covered twelve months between September 2023–September 2024, including all women readmitted within 30 days of delivery.

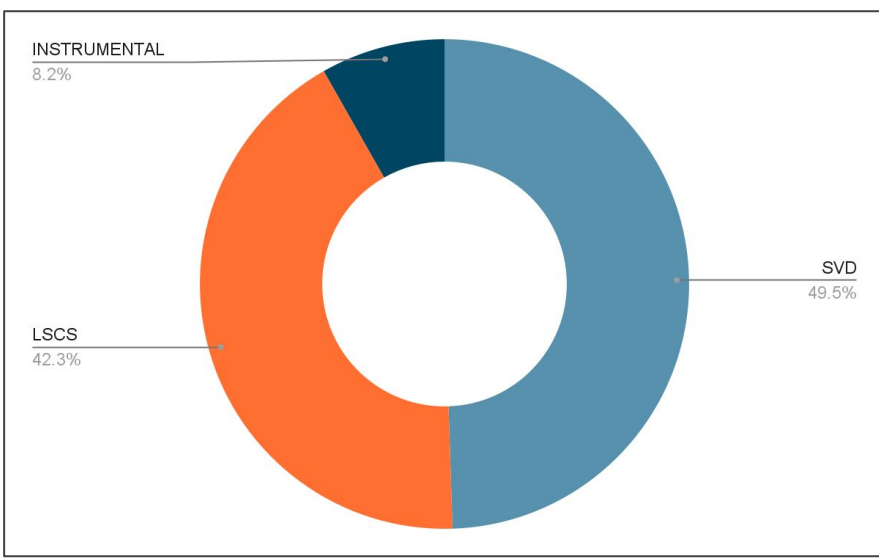
Data included age, BMI, parity, antenatal risk factors(preeclampsia/pregnancy induced hypertension (PET/PIH), gestational diabetes, smoking), and comorbidities (essential hypertension, diabetes mellitus, asthma and hypothyroidism), referral source, reasons for readmission, investigations, and management. Data also covered delivery details such as intrapartum complications, mode of delivery(spontaneous, assisted, caesarean-section), estimated blood loss and postoperative complications.

Data checked if intraoperative antibiotics were given or if PICO dressings were used for patients with BMI ≥ 35 . In cases of intrapartum/postpartum pyrexia, data reflects whether IV antibiotics were administered and if patients were discharged on oral antibiotics. Lastly, data tracks antenatal and intrapartum antihypertensives, postpartum continuation and discharge on antihypertensives.

Results

There were a total of **2870** deliveries in the year analysed, the proportion based in mode of delivery is as below.

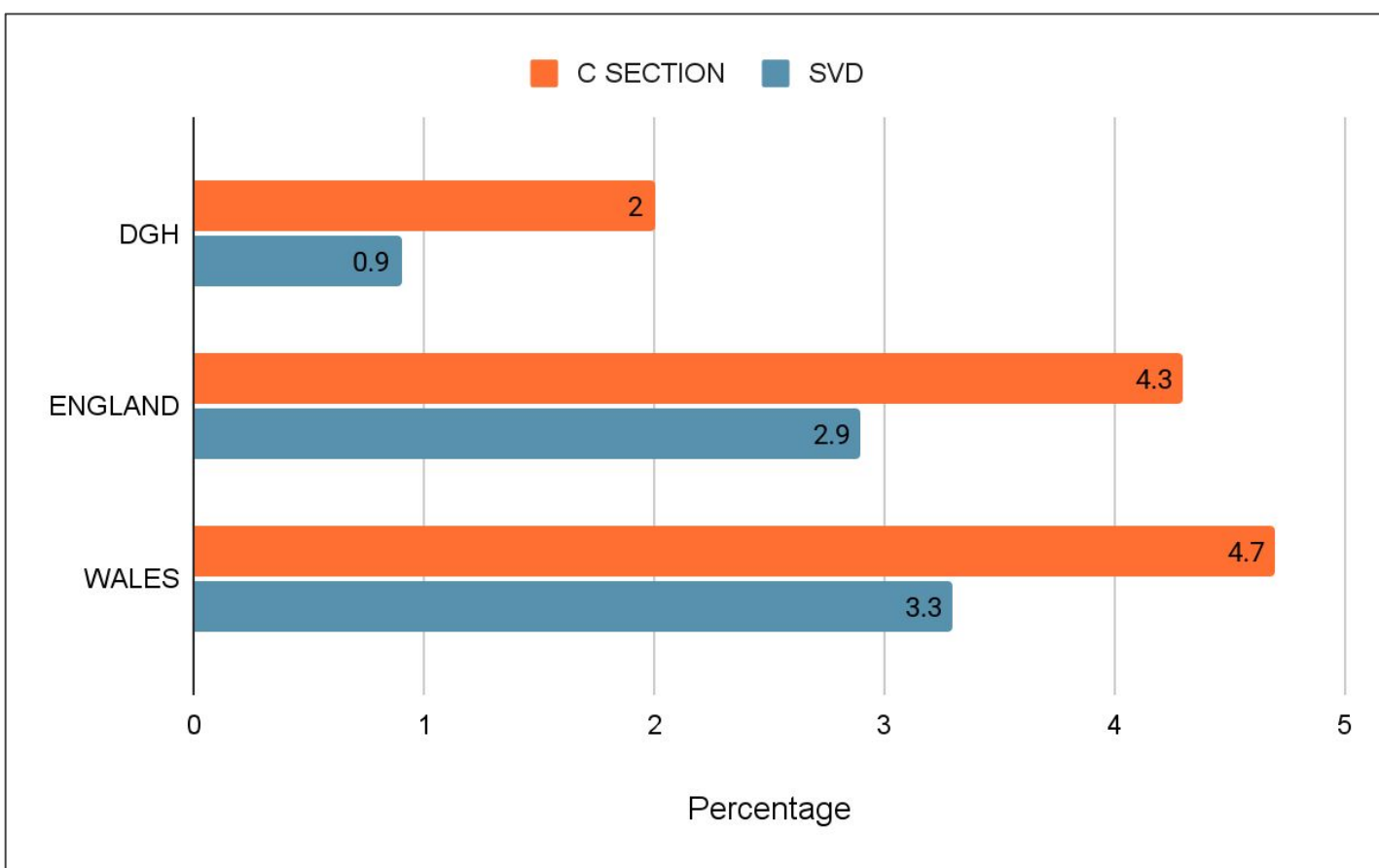
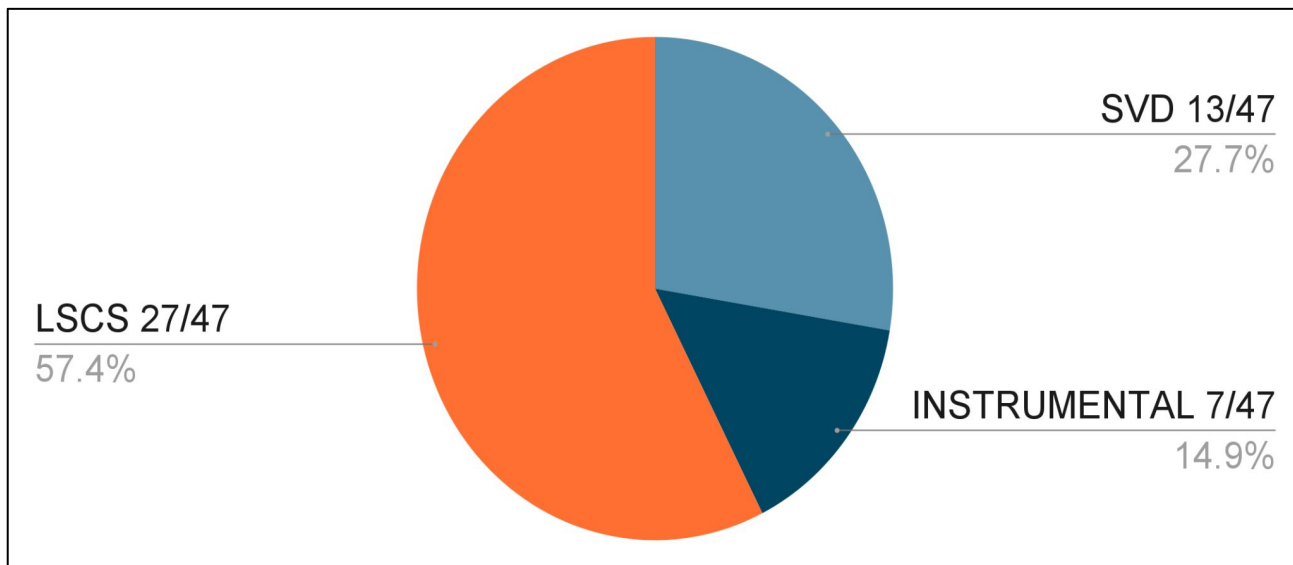
SVD	1420
INSTRUMENTAL	236
LSCS	1214
TOTAL	2870



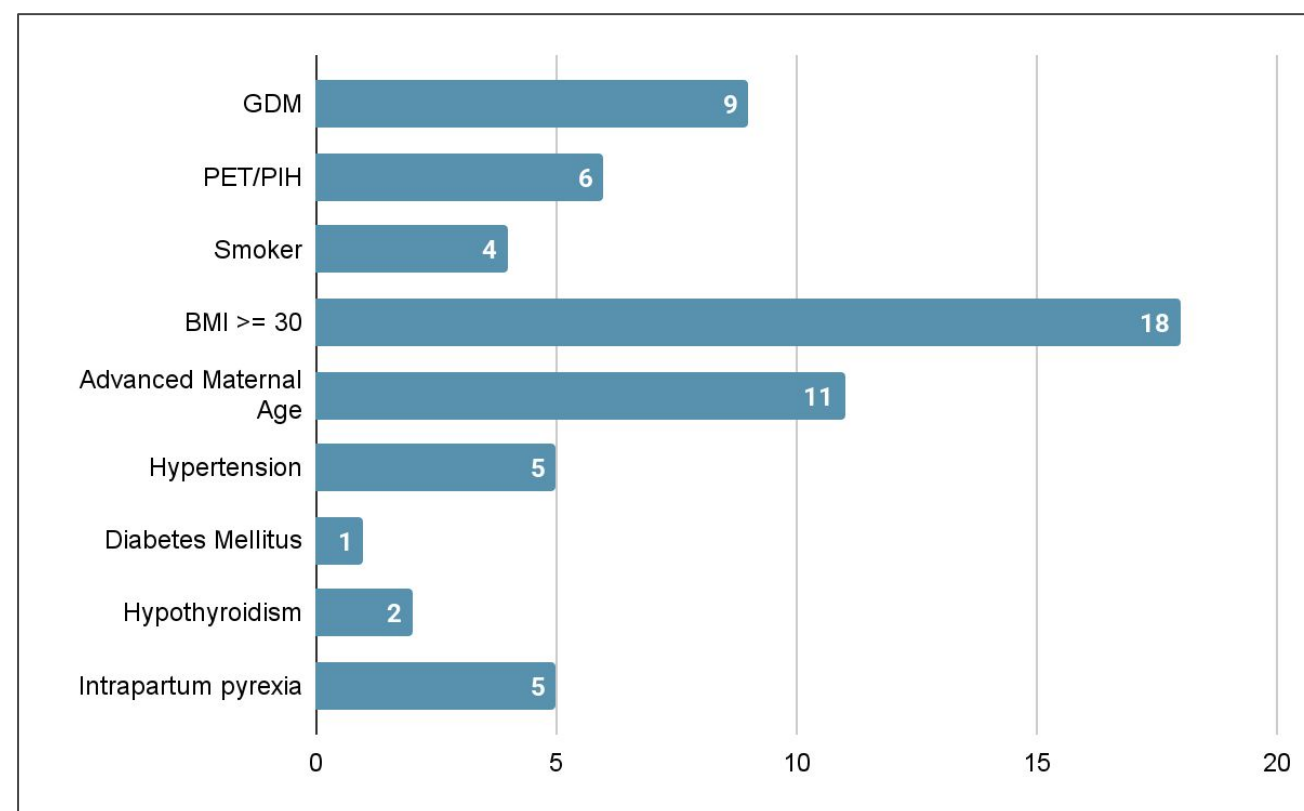
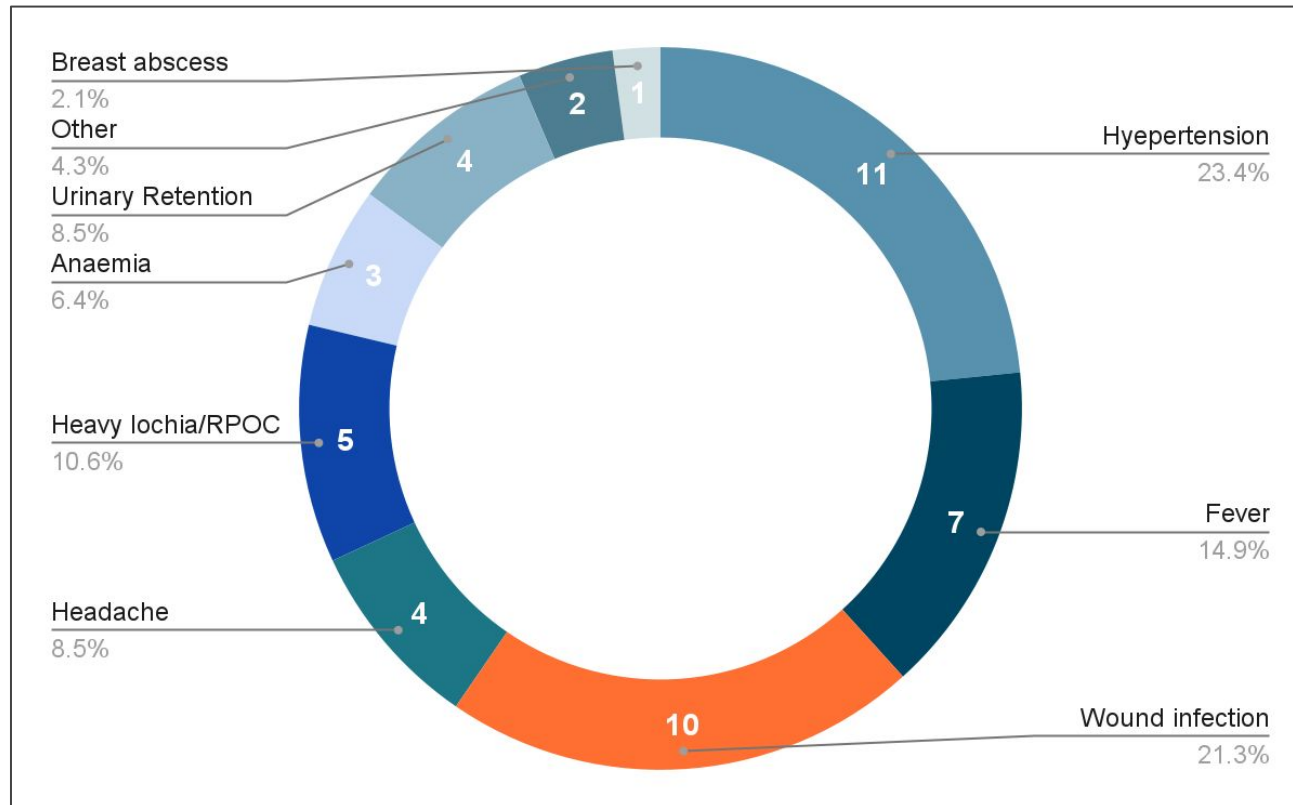
Total number of readmissions within 30 days of delivery identified : **51**
Of these **4 were excluded** as they were admitted for reasons concerning the baby.

Final total number of readmissions : 47

As illustrated in the figure, 57.4% (27/47) of the readmissions occurred following caesarean section, 27.7% (13/47) followed spontaneous vaginal delivery (SVD), and 14.9% (7/47) occurred after instrumental delivery.



Reasons of admission were analysed. Most common causes were hypertension (11/47), fever (7/47) and wound infection (10/47). Other reasons included headache (4/47), heavy lochia/RPOC (5/47), anaemia (3/47), urinary retention (4/47), breast abscess (1/47) and other miscellaneous causes (2/47).



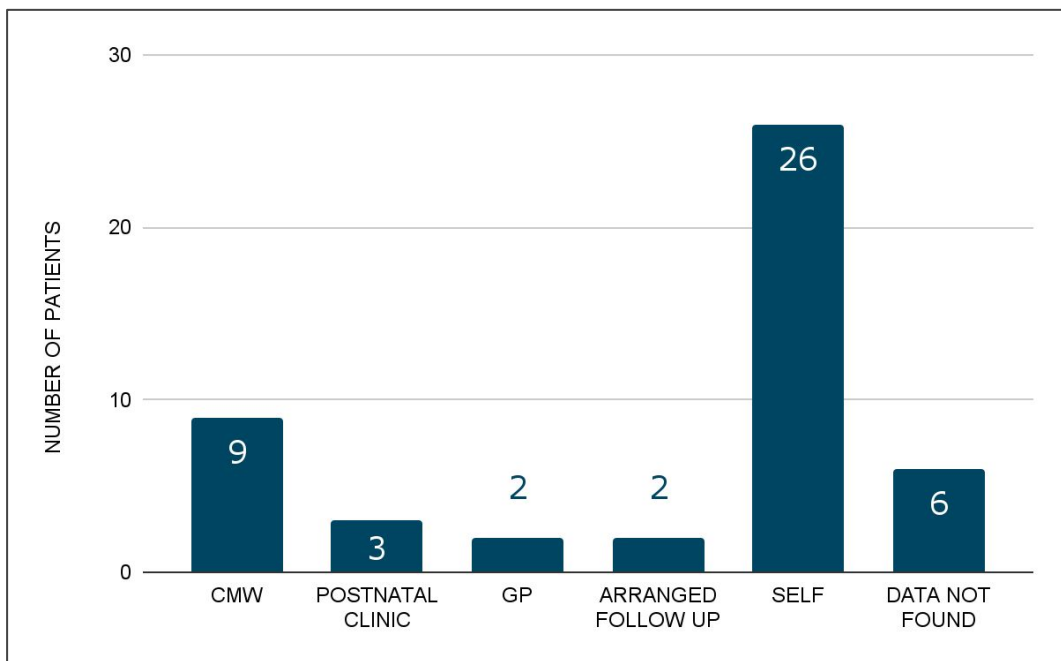
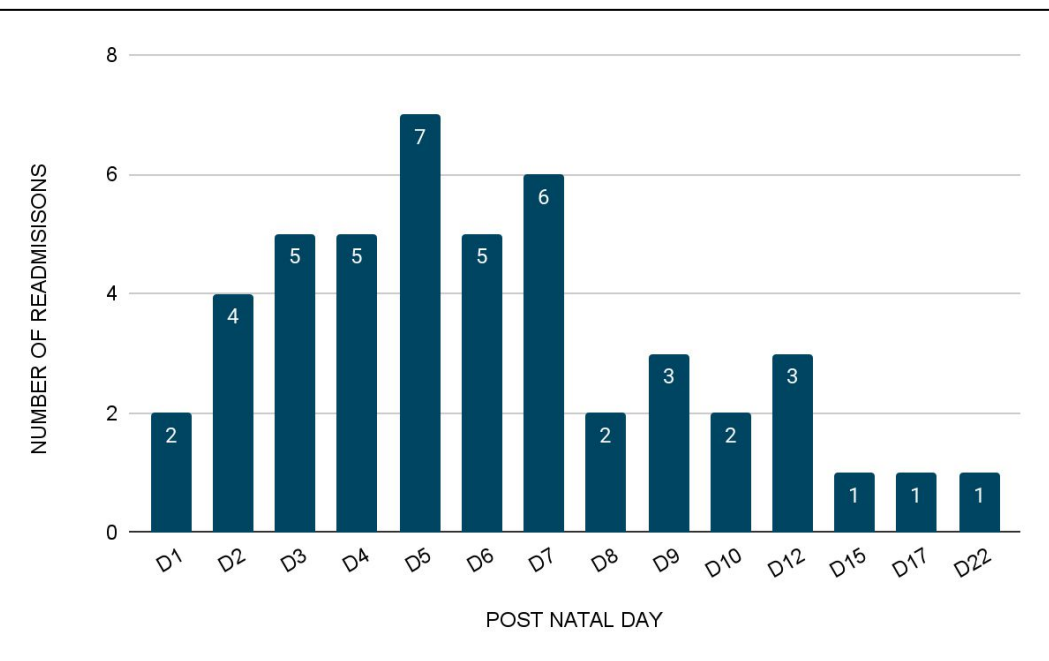
We looked at risk factors including comorbidities and antenatal risk factors present in patients who were readmitted. As seen in the figure one of the most common risk factors were high BMI (18/47), Advanced maternal age (11/47), GDM (9/47), PET/PIH (9/47).

Mean Age : **31.04 Years** with Standard Deviations: **+/- 5.3**

Minimum age: **22 Years** Maximum age: **43 Years**

Presenting complaint	Number of Patients	Investigations	Management
Hypertension Headache	+/- 11	- PET bloods (all but 1) - CT Venogram (1) - Urine PCR (1) - No investigations (1)	All prescribed oral antihypertensives on readmission.
Headache	4	- PET bloods (1) - No investigations (2) - CTPA, CTAP, blood cultures (1 with photophobia & O ₂ requirement)	- 3 received epidural blood patch - 1 patient had antihypertensive. - 1 had IV antibiotics
Wound infection	10	- Bloods (all) - Wound swabs (8) - Blood cultures (3) - USS abdomen (1) - CTAP (1)	- All received antibiotics - 1 underwent surgical exploration
Fever	7	- Bloods (all) - Wound swabs (1) - Blood cultures (6) - CT KUB (1) CTAP (1) - HVS (5), Throat Swab (3) - Urine MC&S (5) - USS Abdomen (1)	- All received antibiotics
RPOC/Heavy Lochia	5	- RPOC (3): USS pelvis, bloods - Lochia (2): Bloods including septic screen, USS pelvis (1)	- RPOC: IV antibiotics + medical/surgical management - Lochia: IV antibiotics
Urinary Retention	4	- Urine MC&S - Bladder scans	Foley catheter insertion (all)
Anaemia	3	- Bloods (all)	All received 2 units RBC transfusion
Breast Abscess	1	- Septic screen, HVS - USS breast	USS-guided aspiration + IV antibiotics

Majority of readmissions were **within 1 week of discharge** and 26/47 of these were self referrals. Community midwives and postnatal clinics together referred 12/47 of these admissions majority of which were for hypertension or headache or both.



There was no clear documentation in operation notes in majority of patients undergoing C section with regards to type of dressing used.

All C section and instrumental deliveries and cases of intrapartum pyrexia received IV antibiotics.

Conclusions

70% women with wound infections had BMI ≥ 30 .

Where applicable 100% of patients had intraoperative antibiotic prophylaxis or antibiotics as inpatients and were discharged on oral antibiotics.

Of the 12 patients readmitted with suspected PET/PIH, 5 were newly diagnosed, whereas 7 had a history of PIH/PET/HTN antenatally/intrapartum, 2 of whom were not discharged on antihypertensives.

Recommendation

Risk of readmission is higher for women with raised BMI and patients undergoing C-section. Routine use of betadine wash and PICO dressing during c-section for women with BMI ≥ 30 may help mitigate these readmissions. Optimising antihypertensives and prescribing appropriate antibiotics at time of discharge along with enhanced postnatal follow up in cases of PET/PIH and pyrexia respectively and routine consultant input during decision making may help reduce risk of readmission.

References

1. Lydon-Rochelle M, Holt VL, Martin DP, Easterling TR. Association between method of delivery and maternal rehospitalization. Jama.2000 May 10;283(18):2411-6.