PL.01 CARE DURING THE THIRD STAGE OF LABOUR: A POSTAL SURVEY OF OBSTETRICIANS AND MIDWIVES IN THE UK

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Background: Active management is use of a prophylactic uterotonic drug, cord clamping and controlled cord traction. Uterotonic drugs reduce the risk of postpartum haemorrhage, but the effects of other components remain unclear. Optimum timing for cord clamping is particularly controversial, with National Institute for Health and Clinical Excellence (NICE) offering different recommendations to World Health Organization (WHO), ICM and Federation Internationale de Gynecologie Obstetrique (FIGO).
Methods: Postal questionnaire of 2230 fellows and members of the Royal College of Obstetricians and Gynaecologists (RCOG) and 2400 members of the Royal College of Midwives (RCM) in the UK. The questionnaire asked about current practice and views of care during the third stage.
Results: RCOG: 1176 (53%) responded of whom 911 were conducting births: 94% (852/911) ''always or usually'' use active management: 66% (602/911) give the uterotonic with the anterior shoulder, 78% (714/911) use intramuscular syntometrine; cord clamping within 20 seconds by 73% (669/991) for term births and 56% (513/911) for preterm births; 94% (854/911) use controlled cord traction.
RCM: 1445 (61%) responded of whom 1125 were conducting births: 71% (804/1125)) ''always or usually'' use active management: 33% (369/1125) give the uterotonic with the anterior shoulder, 86% (968/1125) use intramuscular syntometrine; cord clamping within 20 seconds by 40% (447/1125) for term births and by 54% (604/1125) for preterm births; 94% (1050/1125) use controlled cord traction.

More than 80% of both groups thought more evidence from randomised trials needed, timing of cord clamping was the most popular question.
Conclusions: Initial data suggest most obstetricians and midwives report using active management during the third stage. Choice of uterotonic is not supported by evidence. There is uncertainty about when to clamp the cord.

PL.02 INHERITED PREDISPOSITION TO SPONTANEOUS PRETERM BIRTH

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Objective: To assess inherited predisposition to preterm delivery.
Methods: Aberdeen Maternity and Neonatal Databank records and stores information on all deliveries occurring in Aberdeen from 1950. In a retrospective cohort study, intergenerational data on deliveries in mother-daughter pairs were analysed using multilevel logistic regression. Results are shown as adjusted odds ratio (OR) and 95% CI.
Exposed cohort: All daughters who were born preterm or had mothers who had preterm deliveries (24 weeks to 37 weeks).
Unexposed cohort: All daughters who were born at term (> 37 weeks) or had mothers without any preterm deliveries.
Primary outcome: Daughters' preterm delivery
Results: A total of 22 343 pregnancies occurring in 13 845 daughters born to 11 576 mothers were identified. Daughters who were born preterm themselves had significantly higher odds of delivering preterm babies (OR, 1.43; 95% CI, 1.09 to 1.88). Other predictors of preterm delivery in daughters were age below 19 years (OR, 1.46; 95% CI, 1.25 to 1.70) and above 30 years (OR1.39; 95% CI, 1.02 to 1.90), lower socio-economic status (OR, 1.18; 95% CI, 1.01 to 1.38), smoking more than 10 cigarettes/day (OR, 1.44; 95% CI, 1.25 to 1.66), body mass index less than 19 (OR, 1.47; 95% CI, 1.24 to 1.75), previous preterm delivery (OR, 3.82; 95% CI, 2.76 to 5.29) and previous miscarriage (OR, 1.39; 95% CI, 1.23 to 1.57). Risk of preterm delivery was not increased in daughters whose mothers had a history of preterm delivery.
Conclusion: Women, who are born preterm themselves, are more likely to deliver preterm, but this is no more likely if their siblings were born preterm.

PL.03 THE EFFECT OF INCREASING UTERINE STRETCH AND PROGESTERONE ON CONTRACTILE PROPERTIES OF MYOMETRIUM IN MULTIPLE PREGNANCY

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In twin pregnancies, the myometrium is more distended, so that the uterus can accommodate an extra fetus. We have investigated contractile properties of myometrium from singleton and twin pregnancies when subjected to increasing levels of mechanical stretch, and how progesterone affects contractility in twin pregnancy.

Myometrial biopsies from singleton (n = 6) and twin (n = 6) pregnancies were obtained from women undergoing elective Caesarean section. Longitudinal strips were dissected, attached to a tension transducer, stretched to 1.5 times their resting length and superfused with a physiological salt solution, until spontaneous contractile activity occurred. After depolarisation with a high potassium salt solution, strips were stretched to 50% of maximal tension, allowed to contract again, followed by another stretch and another period of contractions. After each stretch, peak amplitude of contractions was measured.

Sequential stretches in the singleton group lead to a significant reduction in peak amplitude ($p = 0.04$), whereas no change occurred in the twin group. A negative relationship was observed between neonatal birth weight and change in peak amplitude after stretch.

Given the current debate on efficacy of progesterone in twin pregnancy, we exposed five biopsies from term twin pregnancy and two from preterm twin pregnancy, to increasing concentrations of progesterone (1 nM to 100 nM). In each case, contractile activity decreased in a dose dependant manner.

It is hypothesised that the twin pregnancy undergoes greater mechanoadaption due to increased stretch, giving rise to a broader plateau in the length-tension curve in twin pregnancy. We have also shown that progesterone can decrease contractility in twin pregnancy.

PL.04 MYOMETRIUM FROM POST-DATES PREGNANCY SHOWS REDUCED SPONTANEOUS CONTRACTILITY IN VITRO

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Introduction: Although post-date pregnancies are common, the reasons for pregnancy prolongation are unknown. The onset of labour requires activation of the contractile apparatus of the myometrium. We examined spontaneous phasic activity (contractibility) myometrium under controlled *in vitro* conditions, from women having Caesarean section (CS) at different gestational ages.
Methods: Pregnancies were dated by a booking ultrasound scan (approximately 12 weeks). Myometrial biopsies were obtained from labouring (n = 33) and non-labouring (n = 72) women during CS. Longitudinal muscle strips were dissected and attached to a tension transducer. Contractile activity (median force amplitude, duration, frequency of contraction and integral force over 20 min) was

compared between samples from control (37 weeks to 40 weeks) and prolonged pregnancies (>40 weeks). Mann-Whitney tests ($p<0.05$) were used to test statistical significance.
Results: Both labouring and non-labouring myometrium from prolonged pregnancies showed reduced contraction force amplitude and duration compared to controls; however, frequency of contraction was increased. Integral force (20 min) was significantly reduced in labouring prolonged pregnancies ($p = 0.36$). Non-labouring groups showed a similar but non-significant trend. There was no difference in maternal age or body mass index between groups. No correlation between baby birth weight and contractile activity was observed.
Conclusion: Preliminary data indicate that myometria from women continuing their pregnancy beyond 40 weeks gestation show reduced spontaneous phasic activity *in vitro* compared to controls. Our previous studies show that myometrial contractility *in vitro* is impaired when tissue cholesterol is elevated. We are currently investigating cholesterol content of uteri from prolonged pregnancies.

PL.05 HELPING THE HELPERS: DEBRIEFING FOLLOWING ADVERSE EVENTS – PROSPECTIVE SURVEY

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Most medical professionals will experience a major adverse event in their careers, which may leave a significant psychological impact. Current training, does not prepare individuals to handle the aftermath of a stressful event. Other high-risk industries, e.g. aviation, have in place, a critical incident stress management process as part of their incident reporting protocol.
Aim: To evaluate how medical staff is supported following adverse events.
Methods: A questionnaire, based on critical incident stress management, was used to evaluate individual experiences of staff, following adverse incidents.
Results: There were 100 responses to the questionnaire circulated amongst doctors and midwives.95% was involved in adverse events. Following an adverse event, 5.6% of doctors and 9.4% midwives were offered "time off" (x^2, $p = 0.04$); 30% of staff admitted to finding it difficult to work afterwards whereas 63% managed to continue. 9.4% midwives and 2.8% doctors received support of some sort (x^2, $p = 0.025$), while 87% were not offered any. 73% stated family as their main support. 17.2% acknowledged a formalised peer support system. 41% felt adequately supported by their line mangers. Long term memories of the incident troubled 63%. 44% worried about peers' opinion afterwards. Only 28% have received training to support patients and staff, following an adverse event.
Conclusions: Our study shows that there is no effective system in place to support medical staff, following adverse events. Introduction of critical incident stress management should be an integral part of incident reporting process.

PL.06 BABIES BORN AT THE THRESHOLD OF VIABILITY: WILL PAEDIATRICIANS BE PRESENT WITH MIDWIVES AT DELIVERIES OF 22 WEEK GESTATION INFANTS?

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Background: Decisions about the resuscitation of babies born at the threshold of viability are challenging. The Nursing and Midwifery Council (NMC) circular implies that midwives are legally bound to institute resuscitation when babies are born alive at any gestation and do not "die shortly after birth in any event".[1] Paediatricians may not be present at deliveries less than 23 weeks gestation where midwives initiate resuscitation.
Aim: To determine whether paediatricians think they should attend deliveries of 22 week gestation infants and their awareness of the NMC circular.
Methods: A paper and web-based questionnaire was sent to one consultant and one middle grade paediatrician within each of 63 neonatal units in south-east England. Responses to a scenario of an imminent delivery of a 22 week infant and knowledge of the NMC circular were determined.
Results: Response rate was 90%. For a delivery at 22 weeks, 51% of respondents chose "Not called to delivery, regardless of condition at birth"; 24% "Called, regardless of condition at birth"; 19% "Called if baby has a detectable heartbeat at birth and shows other signs of life such as breathing and tone"; 6% "Called if baby has a detectable heartbeat at birth". 12% had read the NMC circular.
Conclusions: Half of paediatricians surveyed would not be present at 22 week deliveries and only 12% had read the circular. This is a potential area of conflict which could give rise to difficulties in communication. Greater paediatric presence and awareness is likely to benefit shared decision-making.

1. **Nursing and Midwifery Council**. *The care of babies born at the threshold of viability* 2007. http://www.nmcuk.org/

PL.07 DECISION-MAKING IN INSTRUMENTAL DELIVERY: WHEN, WHERE AND WHICH INSTRUMENT

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Background: Selection of the correct mode of delivery, instrument and the correct place for operative vaginal delivery is learnt experientially in the clinical setting. A trainee learns the decision-making skills from the expert obstetricians. However, the expert may not always be able to articulate all the factors evaluated whilst making the selection.
Objective: To identify the decision-making process involved in selecting the optimum mode of delivery, instrument and place for operative births in relation to the clinical findings.
Methods: 10 obstetricians and eight midwives were identified as experts in conducting or supporting operative vaginal deliveries. Semi-structured interviews were carried out using routine clinical scenarios. The experts were also video-recorded conducting deliveries in a simulation setting. The interviews and video recordings were transcribed verbatim and analysed using thematic coding. The anonymised data were independently coded by three researchers and then compared for consistency of interpretation. The experts reviewed the coded interview and video data for respondent validation and clarification. The themes that emerged were used to identify the decision making process when selecting the instrumental delivery.
Results: The final decision-making list highlights the various decision points to consider when deciding to do an instrumental delivery. We identified clinical factors that experts take into consideration when selecting where the delivery should take place and the factors affecting the choice of instrument.
Conclusion: This detailed illustration of the decision-making process could aid trainees understanding of the selection of optimum venue and instrument for assisted vaginal delivery.

PL.08 NON-TECHNICAL SKILLS FOR OBSTETRICIANS CONDUCTING OPERATIVE VAGINAL DELIVERIES

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Introduction: Non-technical skills are cognitive and social skills required in an operational task. These skills have been identified and taught in surgical domain with positive feedback. Obstetrics poses a

unique situation where the client is awake and the care is provided jointly by an obstetrician and a midwife.
Objective: To define the non-technical skills of an operative vaginal delivery to facilitate transfer of skills from expert obstetricians to trainee obstetricians.
Methods: 10 obstetricians and eight midwives in two centres (St. Michael's Hospital Bristol and Ninewell's Hospital, Dundee) were identified as experts in operative vaginal deliveries. Semi-structured interviews were carried out in order to identify key non-technical skills using routine clinical scenarios. The experts were also video-recorded conducting operative vaginal deliveries in a simulation and clinical setting. The interviews and video recordings were transcribed verbatim and analysed using thematic coding. The anonymised data were individually coded by three researchers and then compared for consistency of interpretation. The experts reviewed the coded interview and video data for respondent validation. The themes that emerged following the coding were used to formulate taxonomy of skills.
Results: The final taxonomy included detailed non-technical skills required for conducting an operative vaginal delivery. These skills were classified into following categories: situational awareness, decision making, task management, team work and communication, professional relationships with the woman, maintaining professional behaviour and cross-monitoring performance.
Conclusion: This explicitly defined skills taxonomy could aid trainees' understanding of the non-technical skills to be considered in conducting an operative vaginal delivery.

PL.09 EVALUATION OF THE PERFORMANCE OF A MODIFIED OBSTETRIC EARLY WARNING SCORE

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Saving Mothers Lives recommended that modified obstetric early warning scores (MOEWS) should be used to identify ill obstetric patients. Our aim was to evaluate the potential performance of MOEWS before its introduction onto the postnatal ward of a busy hospital.

We collected data from a consecutive series of 400 postnatal women. Observation charts and case notes were scrutinised to establish whether any observations would have triggered MOEWS, had it been in use. A record was also made of events that actually triggered urgent medical review, whether or not they would have been identified by MOEWS.

In this series, midwives requested urgent review of 35 women. Of these, 14 would have been identified by MOEWS and changed management would have been recommended in just eight of these 14. For the remaining 21, 14 had management altered by the attending doctors but these alterations were minor in all but two cases. Of the 365 women who required no urgent review, 14 would have been triggered by MOEWS but none of these would have required changed management.

These data indicate that with MOEWS, urgent medical review will be requested for 7% of postnatal women but under a third of these will require changed management after review. MOEWS will fail to trigger review for an additional 5% of postnatal women for whom the midwife feels review is necessary. In these cases, major management changes are rarely required. The study indicates that MOEWS is a highly sensitive but poorly specific screen for serious maternal postnatal morbidity.

PL.10 SUB-OPTIMAL CARE IN PERINEAL REPAIRS AND RETAINED PLACENTA

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Objectives: To assess delays in perineal repairs and retained placenta in the unit and improve care by reducing unnecessary delays.

Background: The delay in repair of perineal tears and delivery of placenta can result in significant morbidity and mortality. The 7th Confidential Enquiries into Maternal and Child Health (CEMACH) report found "sub-standard care" as the cause in 58% of direct deaths due to haemorrhage.
Material and Methods: Retrospective audit of 75 case notes including 45 notes of 3rd/4th degree perineal tears and 30 notes of retained placenta delivered in 2007. The departmental consensus of surgical intervention within 60 min after the decision to commence procedure was used as standard against which the actual times were compared. 56% of perineal tear and 36% of retained placenta cases had a delay of more than 1 h from the decision to commence surgical procedure. Furthermore, no genuine reason for delay was documented in 65% cases of perineal tears and 64% cases of retained placenta.
Conclusions: There was an obvious need to set up a system which would curtail unnecessary delays and hence sub-optimal care in the unit. We introduced a concept of "Quarter clock count" (QCC). This implies that after 1 h from the decision to commence surgical procedure, patient enters into Quarter clock count and delivering midwife documents the reason for delay every 15 min. The delays are further controlled by highlighting the decision for theatre in red colour on labour ward board and informing the consultant after delay extends beyond 60 min, to facilitate opening of second theatre.

PL.11 MIDWIFE-LED VS OTHER MODELS OF CARE FOR CHILDBEARING WOMEN: IMPLICATIONS OF FINDINGS FROM A COCHRANE META-ANALYSIS MID

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Midwives are primary providers of care for childbearing women around the world but there has been a lack of synthesised information on differences in morbidity and mortality, effectiveness and psychosocial outcomes between midwife-led and other models of care.

The primary objective of this review was to compare midwife-led models of care with other models of care for childbearing women and their infants. Secondary: to determine whether the effects of midwife-led care were influenced by differing levels of continuity, varying levels of obstetrical risk and practice setting. In midwife-led care, the midwife was the woman's lead professional, with consultations with medical staff as required. The review summarised 11 trials involving 12 276 women. All trials involved team or caseload midwifery, women classified as low or mixed risk and care provided in community and hospital settings.

Women who received midwife-led care were *less* likely to experience antenatal hospitalisation, regional analgesia, episiotomy and instrumental delivery, and *more* likely to experience spontaneous vaginal birth, no intrapartum analgesia/anaesthesia, feel in control during labour and childbirth and be attended at birth by a known midwife. In addition, women who received midwife-led care were *less* likely to experience fetal loss <24 weeks' gestation and their babies were more likely to have a shorter stay. There were no statistically significant differences between groups for total fetal loss/neonatal death >24 weeks. Policy makers wanting to achieve clinically important improvements in outcomes should consider how the organisation of maternity services can be reviewed to support midwife-led models of care.

PL.12 WITHDRAWN

PL.13 AUDIT ON LABOUR RISK CARE PATHWAY IN RELATION TO MATERNAL AND FETAL OUTCOMES

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Introduction: The introduction of a labour pathway for low-risk women enabling cervical dilatation of 0.5 cm per hour first stage of

labour and a second stage of 2 h for primigravida and 1 h for multigravida.
Objective: To audit the feasibility of implementing a low-risk care pathway at five midwife-led units (MLU), reviewing its impact on fetal and maternal outcomes.
Methods: Prospective study involved two audits: a pilot was conducted at a busy MLU involving 187 women, followed by a further audit involving 796 women at five of the midwife-led units. 701 women remained on the care pathway. The sample represented low-risk women who had been effectively triage as being suitable for midwife-led care and the audit identified the following outcomes: labour, analgesia, perineal trauma and birth weight.
Results: The analysis indicated that low-risk women do progress at a slower rate then anticipated. Primigravida length of first stage was on average was 13 h and the second stage was 1 h 33 min/ multigravida 40 min. A few women did experience longer labours: one primigravida first stage: 24 h/multigravida: 21 h, but the results indicated maternal and fetal outcomes were not compromised. Conversely, it was the precipitate labours, which tended to adversely affect the Apgar score.
Conclusion: The introduction of the low-risk care pathway had a positive impact as there was a 3% reduction in the transfer rate and a 3.9% increase in the number of normal births.

PL.14 CLINICAL NEGLIGENCE SCHEME FOR TRUSTS. PILOT MATERNITY CLINICAL RISK MANAGEMENT STANDARDS: SHOULD WE BE REFINING OUR CLINICAL TRIGGERS?

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Background: Clinical negligence scheme for trusts (CNST)[1] requires that all maternity adverse outcomes are recorded on the trust's incident reporting system. In 2007, the cord pH triggering threshold was revised from <7.0, to <7.1.[1] Poor neonatal outcome correlates with pH's <7.0,[2] but is less well-established for a pH<7.1. We explored whether the new standard improved detection of adverse clinical incidents in our unit.
Methods: A retrospective review of all data on the maternity incident reporting system.
Results: 1035 incidents were reported between 01 Jnauary 2007 and 31 December 2007, compared to 875 for the same period in 2006. The largest increase was the number generated for pH<7.1; 103 in 2007 vs 30 in 2006 (an additional 61 cases). We identified 52 cases (from the 61) of term singleton pregnancies, with no other reporting triggers, where the baby weighed >2.5 kg and the 5 min APGAR score was above 6. In this group there were no admissions to Special Care Baby Unit (SCBU) and no neonatal deaths. After risk analysis, all 52 cases were coded as being of low, or very low, risk to the mother and of insignificant consequence to the trust.
Conclusion: Criteria for adverse incident reporting should be modified to exclude those babies with a pH of 7.0 to 7.1 where the birthweight was >2.5 Kg and the APGAR scores were normal. We estimate that up to 26 additional hours have been spent reviewing cases in which there has been no adverse outcome. We urge all units to publish their data to strengthen the evidence base for such thresholds.

1. **Maternity Clinical Risk Management Standards**. Clinical Negligence scheme for Trusts April 2006 (NHS Litigation Authority).
2. **Andres R,** *et al*. Association between umbilical blood gas parameters and neonatal morbidity and death in neonates with pathologic fetal academia. *Am J Obstet Gynecol* 1999 Oct;**181**(4):867–71.

PL.15 SUPPORTING NORMAL AND OPTIMAL BIRTH: AN ETHNOGRAPHIC STUDY

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Background: Caesarean births have risen to 32% in the US and 24% in the UK. The World Health Organization (WHO) states that childbirth interventions should be based on best evidence for the mother and infant. However, for women with social and medical complexity, it is unclear what the optimal level of intervention should be to achieve best outcomes. This presentation will address balancing the multifaceted dimensions of appropriate use of technology in birth care through video clips of interviews with health professionals and women.
Method: This qualitative ethnographic study was conducted in 2008 to explore two UK Trusts' efforts to optimise birth outcomes, particularly around normal birth. After ethical approval, we conducted videotaped interviews with health professionals (n = 35) and women (n = 28) selected to achieve maximum variation. Triangulated data included non-participant observation of maternity care and document review. Data were transcribed and analysed using Atlas.ti software.
Results: Both Trusts were supportive of normal birth. The use of clinical guidelines and informed choice was a consistent focus. Although many women felt they had continuity and choice in care, it was not available to all. Challenges to providing low technology care included staffing patterns, volume and variations in health professionals' approaches. Specific case analyses served as exemplars for the enactment of supportive and informed care during labour in hospital and at home.
Conclusions: Supporting women in normal birth was a goal for both Trusts, but was challenged by staffing and skill. Future research should focus on approaches that foster best practices across maternity settings.

PL.16 VAGINAL BIRTH AFTER CAESAREAN SECTION: HOW MUCH CHOICE DO WOMEN HAVE?

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Background: Vaginal birth after caesarean section (VBAC) is a controversial issue and it is an area where support for normal birth and risk are in a fine balance. Department of Health policy emphasises supporting women's choice and the National Health Services Self-improvement Toolkit advocates action to increase the likelihood of successful VBAC. This poster presentation will use quotes from health professionals describing their approaches toward VBAC in two NHS Trusts and women discussing their experiences of negotiating support for their choices.
Method: Data were drawn from a larger ethnographic exploration of optimal birth care and outcomes conducted following ethics approval. Interviews were conducted with women (n = 28) and health professionals (n = 35) selected to achieve maximum variation. Maternity care was observed using non-participant observation and document review was conducted. All data were transcribed and analysed thematically using Atlas ti. software.
Results: There was evidence of strong support for VBAC from health professionals but within defined boundaries. Women did not always feel that their individual choices were supported and they had to negotiate care with professionals. Women perceived health professionals as gatekeepers and found the emphasis on risk alienating. There was some evidence of conflicting views toward VBAC among and between professionals.
Conclusion: The mantra of choice is not always borne out in the individuals' experience, this study adds to the debate on choice in pregnancy and birth. It increases understanding of what matters to women who are planning a VBAC and raises questions about the best way to discuss risks and safety with women.

PL.17 MANAGEMENT AND DIAGNOSIS OF THREATENED PRETERM LABOUR – WHAT ARE WE ACTUALLY DOING?

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Making an accurate diagnosis of preterm labour (PTL) is notoriously challenging as clinical signs are non-specific and false positive diagnoses common. Both fetal fibronectin testing (FFN) and ultrasound (USS) cervical length assessment can aid the diagnosis; however, women with threatened PTL are often managed by junior medical staff who may not appreciate the difficulties surrounding diagnosis. We describe the diagnosis and management of suspected PTL in a large tertiary referral centre.

Methods: Prospective cohort study of all women receiving corticosteroids and/or tocolysis for the diagnosis of the suspected PTL, January to September 2008.

Results: 173 women (150 singletons, 23 twins) received antenatal corticosteroids because they were thought to be in PTL (2.9% of all women delivered in the same period). 66 women had PPROM (38%)–59 singletons and seven twins.

In the same period 21 babies (5.4%) were born before 34 weeks without a complete course of antenatal steroids.

Conclusion: The number of women given corticosteroids unnecessarily remains high due to the high false positive rate of diagnosis of PTL. Perhaps now is the time that senior input with cervical scanning and/or fibronectin is incorporated early in the care pathway to optimise care.

Abstract PL.17

	Singletons, intact membranes (n = 91)	Twins, intact membranes (n = 16)
Mean gestational age steroids prescribed	30.1 weeks (±3.6)	30.1 (±3.4)
Decision by SHO/midwife	24 (26%)	
Cervical scan	21 (23%)	2 (12%)
Fetal fibronectin	29 (32%)	6 (37%)
Tocolysis	31 (34%)	9 (56%)
Birth >34 weeks	69 (76%)	11 (69%)
Steroid to delivery interval >7 d	57 (63%)	7 (44%)

SHO, senior house officer.

PL.18 FETAL SIZE AND GROWTH VELOCITY IN THE PREDICTION OF SHOULDER DYSTOCIA IN A GLUCOSE IMPAIRED POPULATION

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Introduction: Shoulder dystocia is a largely unpredictable event although the risk increases with increasing birth weight. We wished to test the utility of the ultrasound parameters of fetal size and growth velocity in a subset of the largest fetuses by studying a glucose impaired population.

Methods: Estimated fetal weight (EFW) was calculated at two weekly intervals in the third trimester with the last EFW prior to delivery used in our analysis. Fetal growth velocity (FGV) was calculated from two estimates of fetal weight between 21 and 35 days apart. Receiver operating characteristic (ROC) curves were used to establish and compare the ability of EFW and FGV to predict shoulder dystocia.

Results: Mean standard deviation scores for FGV, EFW and birth weight were compared between shoulder dystocia cases (n = 4) and non-shoulder dystocia cases (n = 129): mean FGV Z score was 0.45 vs 0.94; mean EFW Z score was 1.65 vs 0.97; mean birth weight Z score was 0.78 vs 0.84. These parameters had no clinical utility in the prediction of shoulder dystocia in the glucose impaired population.

Conclusions: Although cases of shoulder dystocia are overrepresented in macrosomic fetuses, the majority of cases of shoulder dystocia occur in the non-macrosomic fetus. The most appropriate management strategy remains that all health care professionals attending deliveries are prepared for and are trained in the management of shoulder dystocia

PL.19 ANTENATAL EDUCATION FOR INSTRUMENTAL BIRTHS – DO MIDWIVES GIVE ADEQUATE INFORMATION?

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Background: One in four women in their first pregnancy will have an instrumental birth. Many of these women feel that they have been inadequately prepared during their antenatal education classes.

Aim: To investigate and compare the information given by community midwives through antenatal education about instrumental births.

Method: A postal questionnaire survey of all community midwives employed by one acute hospital trust.

Results: There was an excellent response rate, 39/42 (93%). The majority of midwives, 36/39 (92%), routinely gave information about instrumental births, 33/36 (92%), through formal teaching. Most, 37/39 (95%), explained the indications for instrumental birth and 24/39 (66%) described the procedure. Only 14/39 (36%) informed women of the likelihood of instrumental birth and less than half discussed significant neonatal and maternal complications. More midwives gave women information about ways to facilitate normal birth, 30/39 (77%) informed women about continuous support during labour and 35/39 (90%) the use of upright positions.

Conclusion: Whilst the majority of midwives gave information about instrumental births, the content of the information is not consistent, nor is it sufficient to inform consent.

Discussion: There is a need to develop a standardised curriculum about instrumental births to incorporate into antenatal education programmes. This will help women know how to reduce their risk of instrumental birth and to be better informed if they need one. Training and updates in the curriculum should be in place for midwives particularly those who have had no recent hospital experience.

PL.20 THE ROLE OF CERVICAL CYTOKINES IN PRETERM LABOUR

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Introduction: Spontaneous preterm birth (sPTB) (<37 weeks), accounts for 7% to 10% of births and is a major cause of perinatal mortality and morbidity. Chorioamnionitis is present in up to 40% of cases. The cervix acts as a barrier to ascending infection, potentially via cytokine production. There are conflicting reports of altered cervical interleukin (IL)-6, IL-8 and IL-1β in sPTB.

Hypothesis: Women with previous sPTB have altered pro-inflammatory cytokine levels at 23 weeks gestation compared to women without previous sPTB.

Methods: External cervical os fluid and cells (23 weeks' gestation) were collected using a cytobrush from 12 subjects (sPTB in last pregnancy) and 23 controls attending Newcastle or Liverpool antenatal Clinics. Cytobrush heads were washed in 13 ml sterile phosphate buffered saline, centrifuged and supernatant collected, aliquoted and stored at −80°C. Total protein was assayed and cytokines measured using FASTQuant Human II multiplex protein array. Results are expressed as mean ± SEM pg analyte/mg protein.

Results: There was a trend towards reduced IL-6 levels in subjects (n = 8/12; 76.699 ± 14.895) compared with controls (n = 11/23; 198.323 ± 54.781) (p = 0.08). IL-1β and IL-8 levels did not differ between subjects (IL-1β n = 5/12; 162.597 ± 84.354; IL-8, n = 12/12; 943.079 ± 221.358) and controls (IL-1β n = 12/23; 333.820 ± 65.04; IL-8, n = 22/23; 1121.171 ± 258.085). IL-2, IL-4, IL-10, IL-12p70, GM-CSF, MCP-1 and Rantes were not detected.
Conclusions: These preliminary results indicate that cervical IL-6 may be reduced in women with previous sPTB and may have a protective role. Further work is required confirming these findings, determining the cellular source of these cytokines and correlating findings with pregnancy outcome.

PL.21 AN INCREASING RATE OF OBSTETRIC ANAL SPHINCTER INJURY IN A BUSY OBSTETRIC UNIT. WHAT FACTORS ARE RESPONSIBLE?

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Aim: To determine the rate of obstetric anal sphincter injuries (OASIS) in a busy UK obstetric unit undertaking approximately 6000 deliveries per year and assess trends in the management of women undergoing spontaneous and instrumental deliveries.
Methods: This has been an ongoing study for the last 12 years; however, we report the data from 2008 vs four years earlier after the new classification of OASIS had been introduced.
Results: In 2008, 2.4% of deliveries resulted in OASIS compared to 1% in 2004. There was no significant difference in the parity of women sustaining such injuries with the majority being primiparous in both cohorts. Nor was there any significant difference in the mean birth weight of their babies or in the degree of the injury.

However in 2008, 10% of women who achieved a spontaneous delivery underwent an elective episiotomy compared to 33% in 2004.

Furthermore, in 2008, 30% of the OASIS in the unit occurred following an instrumental delivery compared to only 23% in 2004. 77% of the women delivered instrumentally in 2008 underwent forceps vs only 46% in 2004. In the five years preceding 2004 forceps made up, on average, only 32% of instrumental deliveries.
Conclusions: In our unit, there has been a steady increase in the rate of OASIS over the last four years. This has coincided with a reduction in the rate of elective episiotomy for women undergoing normal vaginal delivery and an increasing trend in preference towards forceps vs ventouse.

PL.22 COMPARATIVE REVIEW OF CONTINUOUS INFUSION VS PATIENT CONTROLLED EPIDURAL USE IN PRIMIGRAVID WOMEN

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Gambling *et al* have shown that women in labour are capable of accomplishing the optimum level of analgesia themselves using patient controlled epidural (PCEA). PCEA was introduced at Stepping Hill Hospital in November 2007. The standard practise prior to this was continuous infusion (CIEA).

We compared the two methods of analgesia in terms of patient satisfaction, pain relief, Obstetric/Anaesthetic review and mode of delivery. Records of all primigravid parturients receiving either CIEA (January 2007) or PCEA (January 2008) were obtained and were analysed retrospectively. Results were analysed with SPSS version 13.

The number of anaesthetic reviews was significantly lower in the PCEA group (22.5%) than the CIEA group (45.7%, p = 0.033). There was no significant difference in patient satisfaction and pain relief between the two groups.

83% of patients in the CIEA group had a review of the cardiotocograph (CTG) trace within an hour of commencement of the epidural. Of which 30% went on to have one or more fetal blood sample (FBS). Of those using PCEA only 11% required a review and 6% an FBS.

Mode of delivery for the CIEA group was spontaneous vaginal delivery (SVD) 25%, operative vaginal 25% and lower segment caesarean section (LSCS) 50%. The corresponding rates with PCEA were 31%, 35% and 34%.

Interestingly, the indication for LSCS was failed instrumental delivery for 35% of patients in the CIEA group but only 6% in women with PCEA.

In conclusion, introducing PCEA has been associated with reduced failed instrumental delivery and caesarean section for this indication, too. Obstetric/Anaesthetic review of the patient was significantly reduced.

PL.23 "STIFFEN THE SINEWS, SUMMON UP THE BLOOD…"[1]

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Introduction: Severe postpartum haemorrhage (PPH) is the most common ''near miss'' event requiring rapid midwifery and medical response.[2] It has been identified as a marker for maternity services' standard of care, despite lack of consensus regarding definitions. Women giving birth are older than 30 years ago.[3] The correlation between maternal age and estimated blood loss at delivery (EBL) was examined.
Methods: Retrospective analysis of routinely collected obstetric data between 2000 and 2005 at an inner-city teaching hospital (n = 32 059) was undertaken. Using logistic regression, EBL was correlated with maternal age separately by mode of delivery and adjusted for parity and maternal body mass index.
Results: The risk of EBL ⩾1 litre increases with age, odds ratio (OR) per year 1.04 (95% CI, 1.025 to 1.069) or OR per decade 1.47 (95% CI, 1.29 to 1.69) (20–30 years and 30–40 years). This increase was similar for SVD, forceps and greatest in elective and emergency caesarean sections.

Although parity was also linked with PPH, it was not as important as age.
Conclusions: Rising maternal age is associated with severe PPH ⩾1000 ml. A woman aged 33 with BMI of 33 will have twice the risk of severe PPH than a woman aged 22 with a BMI of 22. This has implications: for women when making choices regarding place of birth; for health care professionals in urgent care teams; and the deployment of resources to meet this increased disease burden.

1. **Shakespeare**. Henry V – Act III, Scene I.
2. **Lalonde A,** Daviss BA, Acosta A, Herschderfer K. Postpartum hemorrhage today: ICM/FIGO initiative 2004–2006. *Int J Gynaecol Obstet* 2006;**94**(3):243–53.
3. **Nwandison M,** Bewley S. What is the right age to reproduce? *Fetal and Maternal Medicine Review* 2006;**17**:**3**:185–204.

PL.24 MATERNAL MORBIDITY FOLLOWING INSTRUMENTAL DELIVERY: AN INDIVIDUAL RESPONSIBILITY?

A Oliver, B Strachan. *Division of Women and Children's Health, St Michael's Hospital, Bristol, UK*

Background and Aim: There is potential for significant maternal and neonatal morbidity following instrumental delivery. Clinical negligence scheme for trusts (CNST) and the Royal College of Obstetricians and Gynaecologists (RCOG) guidance has recommend audits of morbidity as a unit and individuals. We aimed to develop a methodology to produce this for our unit and individual clinicians.

Method and Results: A prospective study of 120 attempted operative deliveries between 1 February 2008 and 1 April 2008 identified associated maternal morbidity (caesarean section, perineal trauma and postpartum haemorrhage) and neonatal morbidity (facial lacerations, cephalohaematoma). We constructed a cohort control chart based on number of deliveries performed by 21 individuals (range 1–15, median 3) against composite maternal morbidity (range 0–7, median 2). Neonatal morbidity (n = 18, 15% of deliveries) was of limited significance due to the small numbers involved (range 0–3, median 0).

The control chart demonstrated that the majority of operators have a morbidity rate proportional to the number of deliveries performed. One clinician was performing outside acceptable limits, with every delivery associated with morbidity (n = 7). In contrast, another clinician had a low morbidity rate (2/15).

Conclusions: Skills in operative delivery are difficult to acquire, and local experience suggests that trainees are interested in morbidity recording. We recommend personal prospective audit, which would allow larger numbers of deliveries to be included as a trainee rotates around regional units. This affords a more accurate reflection of a clinician's performance and would allow peer comparison to identify trainees who could benefit from more structured training or supervision.

PL.25 THE SCRIPT CONCORDANCE TEST: A VALID TOOL FOR OBSTETRICS?

R Bahl, A Oliver, B Strachan. *Division of Women and Children's Health, St Michael's Hospital, Bristol, UK*

Background: The script concordance test (SCT) has been used to test the reasoning and decision-making of clinicians in the surgical domain.

Aim: To evaluate the use of the SCT as a tool in obstetrics by assessing trainees and consultants decision making around instrumental vaginal delivery.

Methods: A written test containing 59 questions was administered to 24 obstetricians with varying levels of experience. Each question described a realistic clinical scenario designed to assess decision-making in operative vaginal delivery. The candidates were scored according to the responses of a panel of eight experts.

Results: The test scores increased with level of training in the first half of specialist training. The ST1&2 had a mean score of 151 (standard deviation ±17.55). The mean score for ST3&4 was 155±12.21. The mean score for ST6&7 was lower (150±13.69). The consultants scored the highest with the mean score of 157±24.43. The ANOVA test of variance amongst the groups was not statistically significant (F = 0.22).

Conclusions: There were no significant improvements in scores with experience. Small significant differences cannot be excluded on this sample size; however, in its current version the script concordance test does not translate well from surgery to this obstetric skill. There is a trend for senior and not junior trainees to have the lowest concordance with experts. Some surgical studies have had a similar finding. This study highlights the importance of validation of assessment tools before introduction into practice.

PL.26 IMPACT ON PRACTICE AND SERVICE DELIVERY OF THE USE OF AN INTEGRATED CARE PATHWAY TO SUPPORT NORMAL BIRTH IN ONE ENGLISH BIRTH CENTRE: PRACTICE FACILITATOR OR BARRIER?

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Background: Protocol-based care is part of the evidence-based and standardisation movements influencing health care. Despite widespread introduction in maternity care, little is known of the impact of care pathways on service delivery, experiences, outcomes or extent to which midwives, obstetricians and other healthcare professionals have contributed to their development. This presentation shared findings from the use of a normal birth pathway in one midwifery-led birth centre and evaluated how it impacted on practice and service delivery.

Methods: A multiple method case study was conducted. The birth centre was one of five purposively sampled UK clinical sites. Qualitative data collection methods included non-participant observation of practice, interviews with staff and women and document analysis. Realistic evaluation was the study's overarching methodological framework.

Results: The pathway informed decisions midwives would have made anyway. Midwives felt reassured the pathway supported their practice, offered greater opportunity to prevent unnecessary or untimely intervention and individualise care. There were tensions with documentation of care if women were transferred to delivery suite and concerns about issues for litigation. No midwife viewed the pathway as a substitute for clinical judgement or experience. Changes were highlighted which could strengthen decisions about labour progress and involvement of women in decision-making.

Conclusions: Findings will be discussed within the context of implications for evidence-based practice and provision of midwifery-led care and whether pathways have the capability to standardise decision-making during labour. Work is required to ensure pathways are the most appropriate tool to support evidence-based decisions in labour.

PL.27 MEASURED FETAL HEAD DESCENT IN INDUCED LABOURS USING THE STATIONMASTER: A PILOT STUDY

A Weeks, A Barton. *Liverpool University, Liverpool, UK*

Background: Transvaginal assessment of the station of the head has been shown to be both subjective and unreliable. The Weeks Station Master (WSM) is a sliding gauge used during vaginal examination which has been shown in *in-vitro* studies to accurately assess the station of the fetal head.

Objective: This pilot study was designed to assess the range of normal values for station through labour, the acceptability of the WSM and the need for calibration of the instrument.

Design: In this cohort study of induced labours, all had a calibration assessment using the WSM and then measurement throughout labour, two-hourly in the first stage and half-hourly in the second stage. At each assessment, an abdominal ultrasound was also taken to assess rotation of the head. After delivery, participants completed a questionnaire assessing acceptability of the device including discomfort scores.

Results: All participants calibrated A–C on the WSM scale with 34% being B (equating to a spines to fourchette distance of 7.5 cm) the calibration was not associated with body mass index, oedema or maternal shoe size. Participants did not find the measurement uncomfortable – the mean VAS score for pain was only 0.5 compared to 5.5 for other vaginal examinations. 100% would wish to use it again in a future pregnancy. The station of the head remained above the spines throughout labour, only descending to the pelvic floor upon pushing in the active second stage.

Conclusion: The use of the WSM is acceptable and provides insights into fetal head descent in labour.

PL.28 RANGE OF SETTINGS AND RANGE OF OPTIONS FOR INDUCTION OF LABOUR ENHANCES NORMALITY IN CHILD BIRTH

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Aims and Objectives: To improve care of women booked for induction of labour (IOL) through evaluating practice against NICE guidance. (July 2008)

Method: Retrospective case note review.
Population: 100 consecutive women who were booked for IOL – August 2008 to October 2008.
Results: Overall 72% had IOL beyond 41 weeks and those who had earlier IOL had appropriate indications. Cervical assessments and plans for IOL were made in the community setting in 12% and domiciliary setting in 3%. 38% needed prostin, 7% amniotomy and 55% went into spontaneous labour. 65% were offered membrane sweep and 89% of those took up offer. 83% achieved vaginal delivery (67% normal,15% assisted) and 18% had caesarean section. 63% of those who had membrane sweep delivered vaginally.

There were three women with failed IOL of whom one had further prostin and two had caesarean section. One woman had hyperstimulation needing tocolysis. Average length of stay in hospital for IOL was 1.87 days.
Conclusions: Our practice compared favourably to NICE guidelines and actively promoted normality in child birth through ensuring facilities for IOL assessments made available in a variety of settings. Uptake of membrane sweep was high and vaginal delivery rates were at par with National and better than Regional average.
Recommendation: The average length of stay could be reduced and maternal satisfaction improved through a dedicated IOL suite to facilitate counselling in choice environment and option for mothers to consider long acting prostin (Propess) as recommended by NICE.

PL.29 PROPESS OR PROSTIN: PROSPECTIVE AUDIT OF LABOUR INDUCTION AT THE LIVERPOOL WOMEN'S HOSPITAL

TW Kundodyiwa, J Topping, Z Alfirevic. *Liverpool Women's NHS Foundation Trust, Liverpool, Merseyside, UK*

Background: In the light of the recent NICE guidelines for labour induction, Propess (vaginal PGE_2 controlled release pessary) was introduced as a possible alternative to prostin (vaginal PGE_2 tablet) for labour induction at the Liverpool Women's Hospital.
Methods: A prospective audit of two similar cohorts of 108 women undergoing induction of labour matched for gestation, parity and indication was performed. Study outcomes included induction to delivery interval, rate of oxytocin augmentation, incidence of uterine hyperstimulation, mode of delivery and epidural use.
Results: See table.
Conclusion: Our data suggest that Propess induction may take longer but may require less oxytocin augmentation. This may be appropriate for women with unfavourable cervix who might otherwise require more than one insertion of tablet. This is consistent with the current evidence. Clinically significant hyperstimulation was rare and appeared equal in both groups.

PL.30 EPISIOTOMY IN BRAZIL: UNDERSTANDING THE CONTEXT FOR ROUTINE PRACTICE

MH Bastos, D Bick, C McCourt, CS Diniz, NZ Narchi. *King's College London, London, UK*

Background: Around the world, selective episiotomy policy and practice has shown benefits for maternal health outcomes and women's experiences of childbirth.[1] However, most hospitals providing obstetric care in Brazil have not reviewed clinical policies or encouraged clinicians to revise routine practice to reflect the evidence and little is known of women's views of episiotomy.
Methods: This exploratory study sought to identify attitudinal factors associated with performance of routine episiotomy for normal birth. A survey of knowledge and attitudes toward episiotomy was conducted with 52 obstetricians, nurse-midwives and midwives and 217 postnatal women in three hospitals sites from the Public Health System of São Paulo, Brazil. Semi-structured interviews with key stakeholders and opinion leaders further explored the context in which episiotomy practice is embedded.
Results: Analysis explored congruence between knowledge, attitudes, behaviour and clinician's professed practice. Findings were presented in the context of inter-professional, institutional and popular culture and suggested that knowledge of risks and benefits of routine episiotomy is lacking among clinicians and women.
Discussion: This study explored the context in which episiotomy for normal birth is practiced. We will use our experience to reflect on some pertinent issues in the design and implementation of complex interventions to change routine episiotomy practice in Brazil.
Conclusion: This study showed clearly that unless the beliefs and attitudes of all relevant stakeholders are addressed, revisions to clinical practice to implement evidence may not succeed.

1. **Carroli G,** Belizan J. Episiotomy for vaginal birth. *Database Systematic Review* 2000;(2):CD000081.

Abstract PL.29

	Propess (n = 54)	Prostin (n = 54)	p or Odds Ratio (95% CI)
PG-delivery interval (hrs) mean (SD)	25.2 ± 13.0	20.3 ± 8.7	p = 0.015
PG-delivery >24 h	24	15	0.48(0.22–1.07)
Failed induction	0	1	
Oxytocin augmentation	26	33	1.69(0.79–3.60)
Hyperstimulation	2	2	
Caesarean rate	10	8	0.77(0.28–2.12)
Epidural need	15	18	1.30(0.57–2.96)

PL.31 "I'VE GOT TWINS – HOW SHOULD I DELIVER?" – UNIT-SPECIFIC COUNSELLING

S Anand, J Gillham. *St Mary's Hospital, Manchester, UK*

Objective: To assess the delivery data of all twin pregnancies delivered between January 2005 and June 2007 with a gestation of >30 weeks, to obtain unit specific figures for counselling.
Design: Retrospective case note/database analysis – 123 cases.
Setting: St Marys Hospital, Manchester.
Results: 34% laboured spontaneously, 37% were induced, 25% had an elective lower segment caesarean section (LSCS) and 4% an emergency LSCS without labour/induction.

Of the patients who laboured spontaneously, 55% achieved a vaginal delivery and 45% were delivered by emergency LSCS. Primips achieved a vaginal delivery rate of 47% if they laboured spontaneously, with multips 58%

In one set of twins, the first was born vaginally and the second by emergency LSCS. This was a multip who spontaneously laboured.

Of the patients who were induced, 62% achieved a vaginal delivery with 38% a delivery by emergency LSCS. Multips induced achieved a 95.5% vaginal delivery rate (more than if they laboured spontaneously) with primips 30%.

The rates of postpartum haemorrhage (PPH) >1000 ml were 16.6% if the patient laboured spontaneously, 17.7% if induced, 13% with elective LSCS and 0% with a non-labour emergency LSCS.

Although many maternal and fetal variables affected length of stay, patients having an elective LSCS were more likely to be discharged in ⩽5 days (68%). Patients who spontaneously laboured were most likely to stay >5 days (45%).
Conclusions: With patients increasingly wanting to discuss merits of vaginal delivery vs LSCS in twin deliveries, unit data will aid this discussion.

PL.32 WOMEN'S VIEWS ON THE FREQUENCY OF VAGINAL EXAMINATION IN LABOUR

B Riddett, S Vause. *St Mary's Hospital, Manchester, UK*

Background: The NICE Intrapartum Guidelines recommend that vaginal examination is ''offered four-hourly, or where there is concern about progress or in response to the woman's wishes''. Little has been published relating to women's views of how frequently they want to be examined during labour.
Aim: To assess women's views on frequency of vaginal examination in labour
Methods: Women with normal pregnancies were asked to complete a questionnaire (quantitative and qualitative) at 36 weeks gestation and again at 4 weeks to 8 weeks postpartum.
Results: 69 women completed the questionnaire at 36 weeks gestation.

Of these, 17 (25%) wanted to be examined two-hourly, 14 (20%) three-hourly and eight (12%) four-hourly. 30 (43%) said they ''did not mind''. Primiparae and multiparae had similar views.

18 of the 69 women completed a second questionnaire postpartum. Of these, four (22%) wanted to be examined two-hourly, three (17%) three-hourly and one (6%) four-hourly. 10 (55%) said they ''did not mind''.

Responses to the qualitative questions revealed that many women who said they ''did not mind'' about the frequency of examination, qualified this by saying that they wanted to feel assured that it was indicated.

In the postnatal questionnaire, all women felt that their consent had been obtained prior to the examination and that the findings had been explained to them.
Conclusion: Of those who expressed a preference, most preferred two-hourly examinations. However, many women did not mind how frequently they were examined providing it was indicated and the findings explained.

PL.33 DESCRIPTIVE AUDIT OF THE STANDARDS OF MONITORING OF LOW-RISK WOMEN DURING LABOUR

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Introduction: National guidelines recommend that intermittent auscultation of the fetal heart rate (FHR) is appropriate for low-risk women in labour. Further, they provide guidance on maternal monitoring. The aim of this study was to audit the management of women birthing in a low-risk unit against national standards.
Methods: Maternal observations and FHR recordings were reviewed in 67 low-risk women delivering in a one-month period. After an education programme promoting the NICE standards, the audit was repeated over a further month (n = 40). The standards audited were: FHR auscultation in the first and second stages of labour and maternal pulse, temperature and blood pressure (BP).
Results: During the initial cycle, only 30% of cases fulfilled all five monitoring standards. This improved to 58% after a programme of education. There were significant improvements in all parameters except maternal BP monitoring.

Abstract PL.33

	Standard	Cycle 1 (% standard)	Cycle 2 (% standard)	
Auscultation 1st stage	Every 15 min	72	100	p<0.02
Auscultation 2nd stage	Every 5 min	61	89	p<0.005
Maternal pulse	Hourly	48	77	p<0.001
Maternal temperature	4 hourly	73	85	p<0.02
Maternal BP	4 hourly	90	82	NS

NS, not significant.

Conclusions: Following an education programme, we have improved the monitoring of women birthing in our low-risk unit. Despite this, only 58% of cases met all five standards after education. We recommend that education of staff managing low-risk women should be a continuous process.

PL.34 DO CLINICAL GUIDELINES SUPPORT NORMAL BIRTH? A QUALITATIVE ANALYSIS

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Background: This abstract describes a subset of data from a larger exploration of perinatal optimality in two National Health Services (NHS) Trusts. Data presented outlines the relationship between clinical guidelines and facilitation or hindrance of normal childbirth. Specific aims of the larger project included exploration of provider and maternal perceptions of normal birth and examination of supportive clinical processes.
Methods: An ethnographic study was conducted in 2008 after ethical approval. Included was review of clinical guidelines used to direct maternity care, with comparison to the NHS Self-Improvement Toolkit, as well as interview data and non-participant observations in the study settings. Data were analysed thematically using Atlas ti software.
Results: Five themes were identified: 1) Guidelines provide structure for care settings, clinical activities and communication; 2) Guidelines support evidence-based care and generally promote normal birth; 3) ''Childbirth by numbers'' vs ''a freeing way to practice;'' 4) Individualised care is valued and may necessitate deviation from guidelines; and 5) Reciprocity between research evidence and clinical practice. Clinical guidelines implementation and adherence were influenced by multiple factors. Both Trusts' guidelines were partially consistent with the NHS Toolkit.
Conclusions: Guidelines should be detailed and comprehensive and should include care for normal and variant conditions. Synthesis of supportive data should be provided to facilitate clinical decision-making and informed consent. Given the value assigned to individualised care and maternal autonomy by both provider and childbearing participants, alternative management strategies should be anticipated and described in guidelines. Further, data collection during clinical activities should be emphasised to allow for future best-practice evaluations.

PL.35 SUPPORT FOR DECISION-MAKING WITHIN UNCERTAINTY: MATERNITY CASE STUDIES

[1]J Grant, [1]H Powell Kennedy, [1]C Walton, [2]J Shaw-Battista, [1]J Sandall. *[1]King's College London, London, UK; [2]University of California, San Francisco, San Francisco, USA*

Background: Although shared decision-making (SDM) is widely advocated in UK health policy, there has been little study of its use. SDM may be particularly appropriate in maternity care where the risks and benefits of two or more management options are often uncertain. This presentation will use audio and video clips from two qualitative case analyses to demonstrate women's experiences of decision-making about mode of delivery within a framework for SDM.
Method: Data were drawn from a larger ethnographic exploration of optimal birth care and outcomes conducted in two National Health Services (NHS) Trusts following ethics approval. Women (n = 28) consented to audio or video recording of interviews and signed copyright releases. Interview transcripts and field notes were transcribed and analysed using Atlas.ti software.
Results: Support for decision-making across the data demonstrated aspects of SDM including information exchange, explanation of varied management options and exploration of preferences and

values. Women's narratives provided evidence of varying professional support. In one case the woman's preferences for assessing risk were not sufficiently addressed. She was dissatisfied with the process and felt guilty that she "went along with" a provider's decision. In contrast, another woman felt fully involved and very satisfied with the decision-making process.
Conclusion: Satisfaction, including being able "to live with" a decision, is one outcome of successful SDM. The process of mutual involvement may be more important than who actually makes the decision. The process of decision-making should explore a woman's preferences and values especially when risks and benefits of alternative treatments are unknown.

PL.36 COST-EFFECTIVENESS OF EXTERNAL CEPHALIC VERSION

SS Patel, D Tinker, N Katakam, A Muotune. *Royal Bolton Hospital, Bolton, UK*

Objective: To determine whether it is cost-effective to offer external cephalic version (ECV) for breech presentation at term.
Methods: We analysed all cases booked for ECV in 2008 at Royal Bolton Hospital. All ECVs were performed in the Central Delivery Suite (CDS) after ultrasound and cardiotocography (CTG). Subcutaneous terbutaline was used in all cases, 15 min prior to performing ECV. We compared the cost incurred against the cost of offering caesarean sections (CS) to all breech presentation. We also compared it to the hypothetical cost of offering vaginal breech delivery (VBD) to suitable cases and achieving VBD in 30%. National tariffs were used to calculate costs.
Results: 49 women were booked for ECV. Two women cancelled their appointments. Two women refused to have ECV after they arrived on the CDS. One woman was not offered ECV as ultrasound showed decreased liquor volume.

ECV was attempted in 44 women. ECV was successful in 21 (47.73%) and not successful in 23 (52.27%).

Cost of offering CS to all women with breech presentation is £2198 per case.

Cost incurred per ECV booked is £2078.55 resulting in a saving of £119.45 per case.

VBD without ECV in all suitable cases and achieved a VBD rate of 30% would cost £1785.77 per case resulting in a saving of £412.23 per case.
Conclusions: Offering ECV does result in cost savings, especially if costs of subsequent pregnancies, with previous CS are considered. However, VBD in well selected cases remains the most cost effective method of dealing with breech presentation at term.

PL.37 ANAL SPHINCTER INJURY FOLLOWING OPERATIVE VAGINAL DELIVERY IN THEATRE: ROTATIONAL VS NON-ROTATIONAL FORCEPS DELIVERIES

L Hermis, D Kernaghan, J Tierney. *Southern General Hospital, Glasgow, UK*

Introduction: Attention has focused recently on improving trainee's skills at operative vaginal delivery to reduce the number of caesarean sections in the second stage of labour. There are limited data available to guide the obstetrician when faced with the choice between a potentially difficult operative vaginal delivery and the risks of a full dilatation caesarean section. We wished to study maternal morbidity, in particular anal sphincter injury, following potentially difficult operative vaginal delivery.
Methods: All women with a term, singleton, liveborn, cephalic pregnancy requiring an operative instrumental delivery in theatre between 1 August 2007 and 1 August 2008 were identified retrospectively.

Comparisons were made between women undergoing Kielland's rotational forceps delivery (KRFD) and those undergoing non-rotational mid-cavity forceps delivery (MCFD).

Results: 106 women were identified; 67 MCFD and 39 KRFD. The rotational forceps delivery rate within our unit was 1.4%. Anal sphincter injury occurred in 12 women (11.3%); nine following KRFD, three following MCFD ($p = 0.0044$, Fisher's exact test). All procedures were carried out under direct supervision of a consultant.
Conclusions: A significantly higher number of women sustained anal sphincter injury in those undergoing Kielland's rotational forceps deliveries. This risk must be considered when deciding the optimal mode of delivery for a woman with a malposition in the second stage of labour.

PL.38 AN EVALUATION OF THE CONSTITUTION AND QUALITY OF DECISION-MAKING ASSOCIATED WITH FAILED FIRST ATTEMPTS AT INSTRUMENTAL DELIVERY

S Jindal, A Ikomi, D Ojutiku. *Basildon University Hospital, Basildon, Essex, UK*

Aim and Objectives: To identify the factors associated with failed first attempts at instrumental vaginal delivery in a UK district general hospital.
Background: Ventouse extraction has gradually become the method of choice for instrumental vaginal delivery due to its association with less maternal morbidity compared to forceps. Most would agree that this development has increased the likelihood of failed first attempts at delivery due to higher prevalence of cup detachment.
Materials and Methods: Retrospective analysis of 94 case notes of women delivered over a period of 12 months whose deliveries had been coded as ICD O66.5 (failed application of ventouse or forceps, with subsequent delivery by forceps or caesarean section).

All notes were assessed regarding the appropriateness of the initial decision to attempt delivery. The standards applied were from the National Institute for Health and Clinical Excellence (NICE), Royal College of Obstetricians and Gynaecologists (RCOG) and local departmental guidelines.
Results: There was a wide range (20% to 80%) in the ability of individual doctors to achieve vaginal delivery after initial failure. The initial attempt at delivery was deemed appropriate in only 29% of cases. Only one doctor achieved an acceptable appropriate decision making rate (75%). The quality of decision making, documentation and procedural skills did not correlate with the clinical experience of the individual doctors.
Conclusions: A high rate of premature attempts at delivery is a significant contributing factor to failed first attempts at instrumental delivery in our unit. This demonstrates a need to formalise strict and detailed criteria for instrumental delivery. We have adjusted our guidelines and are piloting a decision support tool which will be presented.

PL.39 POSTNATAL FEEDING AND GLYCAEMIC CARE IN BABIES OF DIABETIC MOTHERS: AUDIT OF IMMEDIATE POSTNATAL CARE IN NEONATES BORN AFTER 34 WEEKS GESTATION

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Confidential Enquiries into Maternal and Child Health (CEMACH) and National Institute for Health and Clinical Excellence (NICE) guidelines highlighted the importance of neonatal care for babies of diabetic mothers. Local guidelines are in place in Norwich, but observation suggested low compliance. Managerial changes in transitional care in 2007 resulted in more babies being admitted to NICU than previously. The postnatal care of babies above 34 weeks without congenital abnormality in 2006/2007 was therefore reviewed. These babies could reasonably have been expected to stay with their mothers.

65 babies born to 60 mothers were included. 19 (29%) were admitted to NICU. In 11 of the 19, the reason for admission was not clear or potentially avoidable. Only 9% of babies received their first feed within 30 min of birth, 59% within 1 h. 12% of babies were exclusively breastfed, 38% had mixed feeding and 50% formula-fed. For 51% this method was their mother's initial choice. Only 28% of babies had their first blood glucose measurement between 2 and 4 h of age.

Conclusions: The care of this group of babies does not meet NICE guidelines, and mothers' feeding preferences are not achieved. Local guidelines on prevention of hypoglycaemia and for transitional care babies are conflicting, which may contribute to our disappointing results. Managerial changes have now occurred, resulting in more babies staying with their mothers. A guideline for the care of these babies is being developed.

PL.40 TRIAL OF OPERATIVE VAGINAL DELIVERY: HAS TRAINEE WORKING PRACTICE HAD AN IMPACT?

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Introduction: The aim of this study was to examine maternal and neonatal morbidity following ''trial of instrumental delivery in theatre'' and to compare our findings with those of a similar prospective study carried out in 1999[1] in order to determine whether differences which could be explained by trainee experience were apparent.

Method: We conducted a retrospective cohort study of 279 women, who had a term singleton pregnancy consented to undergo an attempt at an operative vaginal delivery in theatre. Maternal and obstetric data were collected from the local maternity database for January 2007 to December 2007. The data were analysed on SPSS.

Results: Women delivering by caesarean section were at an increased risk of having a previous caesarean section (odds ratio (OR), 3.30; 95% CI, 1.25 to 8.75), macrosomic fetus (OR, 1.85; 95% CI, 0.97 to 3.53), malposition (OR, 6.50; 95% CI, 3.76 to 11.22), blood loss >1000 ml (OR, 3.31; 95% CI, 1.64 to 6.17), blood transfusion (OR, 3.23; 95% CI, 1.22 to 8.54) and prolonged hospital stay (OR, 2.34; 95% CI, 1.25 to 2.94). There were no differences seen in neonatal outcome. These findings closely matched those of Murphy *et al*[1], however the caesarean section rate was lower in 2007 compared to 1999 (40% vs 53%) and importantly the presence of a consultant at time of delivery was increased during our review (14% vs 2%).

Conclusions: Our review demonstrates increased consultant presence in theatre during second stage deliveries which may have contributed to the lower caesarean section rate. Consultant presence however, appears to have had limited influence on reducing maternal and neonatal morbidity.

1. **Murphy DJ,** *et al*. Early maternal and neonatal morbidity associated with operative delivery in second stage of labour: a cohort study, *Lancet* 2001;**358**:1203–07.

PL.41 TEN-YEAR OBSERVATIONAL STUDY ON PERIPARTUM HYSTERECTOMIES IN ST. MARY'S HOSPITAL, MANCHESTER

C Papoutsos, S Maiti, M Maresh. *St Mary's Hospital, Manchester, UK*

Post-partum hysterectomies performed in St. Mary's hospital, Manchester, from 1998 to 2007 were analysed with the aim of describing any significant changes in trends in clinical practice over the 10-year period. Data were also compared with previous published data during 1972 to 1997 from the same hospital. A search through operative and histopathology records identified 24 cases of post partum hysterectomy, amongst which one was an elective operation for cervical carcinoma and 23 were emergency cases. The incidence was 0.54 per 1000 deliveries compared to recent UK Obstetric Surveillance System (UKOSS) data showing incidence of 0.41 per 1000. The main indications for hysterectomy in this cohort were abnormal placentation (praevia, accreta, percreta) in 47.8% of cases and uterine atony accounted for 34.8% of cases. There has been a significant change in indications over the last 35 years in this hospital ($p = 0.0142$) with abnormal placentation becoming the commonest indication. A history of previous caesarean section ($p = 0.0123$) and previous uterine instrumentation ($p = 0.0324$) has been found to be associated with hysterectomy due to abnormal placentation. There were no maternal deaths. But maternal morbidity was high with all women requiring blood transfusion and 66.7% having other morbidity. The trend towards fewer hysterectomies due to uterine atony may be associated with the introduction of new management techniques in post-partum haemorrhage over the last decade.

PL.42 TRIAL OF INSTRUMENTAL DELIVERY IN THEATRE – DOES THE TIME OF DAY MATTER?

[1]CL Tower, [2]Y Wan, [2]S Vause. *[1]University of Manchester, Manchester, UK; [2]Central Manchester University Hospitals NHS Foundation Trust, Manchester, UK*

Introduction: In recent years, there have been many calls for increased Consultant cover on the Labour Ward. There is very little evidence to show what effect this has on outcomes.

Aim: To assess the effects of time of day and Consultant presence on trial of instrumental delivery in theatre.

Methods: Retrospective review of all instrumental deliveries between 1 November 2008 and 31 January 2009 in a tertiary referral hospital. Data were extracted from electronic records of instrumental delivery developed for prospective audit. Comparisons were made between deliveries occurring during the day (08:30–20:59) and night (21:00–08:29)

Results: 48 trials of instrumental delivery were performed in theatre, 28 during the day and 20 at night. During the day 26/28 (93%) were supervised by a Consultant, at night 2/20 (10%) were. Forceps were used for 25/28 (89%) during the day and 12/20 (54%) at night. A second instrument was used for 2/28 (7%) during the day and 2/20 (10%) at night. Decision to delivery intervals was similar during the day (39 min) and at night (43 min). The small number of poor fetal outcomes meant that comparisons could not be made.

Conclusions: Our data suggest differences in practice at night compared to daylight hours when consultant presence is mandatory in our unit. The higher rate of ventouse use in theatre at night suggests that in the relatively unsupported environment at night, staff may be more cautious and choose to perform deliveries in theatre, which during the day would be performed in the delivery room.

PL.43 POSITIVE IMPACT OF A STRUCTURED PROFORMA AND PROSPECTIVE AUDIT ON DECISION TO DELIVERY INTERVALS FOR INSTRUMENTAL VAGINAL DELIVERY

[1]CL Tower, [2]Y Wan, [2]S Vause. *[1]University of Manchester, Manchester, UK; [2]Central Manchester University Hospitals NHS Foundation Trust, Manchester, UK*

Introduction: An initial audit of instrumental vaginal delivery had identified poor documentation and that many deliveries were not meeting audit standards relating to decision to delivery interval. A structured proforma had been introduced to improve documentation and facilitate prospective audit.

Objectives: To re-audit practice and documentation relating to instrumental vaginal delivery

Method: Prospective audit of all instrumental vaginal deliveries performed at a tertiary referral hospital between 12 November 2008 and 31 January 2009. Audit standards derived from local guidelines (developed from Royal College of Obstetricians and Gynaecologists (RCOG) guidelines) were used for the initial audit and re-audit.

Results: In the initial audit only 20/26 (77%) women had vaginal examination findings fully documented. This had improved to 117/130 (90%) in the re-audit.

In the initial audit only 9/16 (56%) of operative deliveries performed as an emergency (i.e threat to life) in the delivery room were achieved within 15 min of decision. In the re-audit this had increased to 25/37 (68%). For operative deliveries performed as an emergency in theatre a standard of 30 min decision to delivery interval was set. Improvement was again seen from 1/8 (12.5%) in the initial audit to 8/16 (50%) in the re-audit.

Conclusions: The introduction of the structured proforma improved documentation. An improvement in decision to delivery intervals for emergency instrumental deliveries was also noted which was welcome but surprising as no intervention, other than the proforma, had been implemented. This may be due to a combination of the Hawthorne effect and improved documentation.

PL.44 AUDIT OF THE PREVENTION AND MANAGEMENT OF SHOULDER DYSTOCIA IN GREATER GLASGOW AND CLYDE

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Aim: To describe the associated risk factors and audit the current management of shoulder dystocia in National Health Services (NHS) Greater Glasgow and Clyde by evaluating findings against the Royal College of Obstetricians and Gynaecologists (RCOG) guideline ''Shoulder Dystocia''. We also assessed neonatal outcomes following shoulder dystocia.

Methods: Data collectors in each of the four maternity units collected information for all women experiencing shoulder dystocia from 1 February 2007 to 31 January 2008.

Results: 174 relevant cases were identified. The incidence of shoulder dystocia was 1.51% of all vaginal deliveries.

More than half of the cases demonstrated none of the identified risk factors. However, three of the diabetic patients had suspected macrosomia and were not offered elective caesarean section as recommended by the RCOG.

The McRoberts' manoeuvre was performed as the primary procedure in 77% of the cases and second in the other cases with the exception of eight cases. It was the only procedure required in 40% cases and when used in combination with episiotomy overcame 55% cases. Suprapubic pressure was employed secondary to the McRoberts' procedure in 56 cases and as a subsequent procedure in almost all other cases.

Conclusions: Shoulder dystocia is an uncommon obstetric emergency. Unfortunately, as confirmed by this audit, shoulder dystocia cannot be reliably predicted.

The systematic management of shoulder dystocia was followed in 95% of cases in this study although the recommended primary intervention of the McRoberts manoeuvre should be more widely adopted. We have recommended five further interventions to improve the care given to these women.

PL.45 A SHORT SURVEY OF DOSES OF MISOPROSTOL USED IN OBSTETRICS

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Introduction and Background: Misoprostol dosaging is complex due to the need for altered doses as pregnancy progresses, the potential for harm from narrowly exceeding the dose in the third trimester and the variety or routes of administration. But despite an abundant literature supporting the safety and effectiveness of misoprostol in reproductive health, there remain very few countries in which it is licensed for O&G indications. Thus, most purchased misoprostol is of an inappropriate formulation and has no dosage instructions accompanying it. The potential for inappropriate use is great – but the frequency of misuse is unknown.

Aims and Objectives: The aim of this survey was to see what dosage regimens for misoprostol are being used worldwide.

Methods: We conducted an online survey using the snowball technique. The survey was carried from May 2008 to October 2008 using ''Survey Monkey''.

Results: We received 271 responses, mostly from Canada (46%), the UK (17%) and the USA (14%). Despite the majority of respondents being in settings with good access to information technology, misoprostol is still being used in inappropriately high doses for second trimester termination of pregnancy and intrauterine fetal death. This has the potential to cause serious side effects such as uterine rupture or even maternal mortality.

Conclusion: There is an urgent need for World Health Organization (WHO) guidelines for safe use of misoprostol in second and third trimester where there is significant risk to mother if inappropriate doses are used; especially in resource poor settings where misoprostol is more likely to be used.

PL.46 INDUCTION OF LABOUR AT TERM FOR NULLIPAROUS WOMEN OF ADVANCED MATERNAL AGE: A NATIONAL UK SURVEY

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Background: British women are increasingly delaying childbirth and women of advanced maternal age are at high risk of pregnancy complications. Anecdotally, many experts recommend early induction to forestall late pregnancy risks for older women. However, little hard evidence exists to support such a policy.

Objective: To explore the attitudes and policies of consultant obstetricians relating to induction of labour at term based on maternal age alone for nulliparous women over 35 years of age. To judge whether there is a need for a randomised controlled trial (RCT) of such a policy and whether it would be feasible.

Design: Cross-sectional survey

Setting: Consultant obstetricians (members of the BMFMS)

Methods: Mailed questionnaire

Results: 112 consultant obstetricians participated. 4% already offer induction of labour at term for women between 35 and 39 years of age, 39% for women between 40 and 44 years and 58% for those over 45 years.

One-third of those who did not offer induction to at least one of the groups agreed that this was due to a fear of increasing the risk of emergency caesarean section.

49% said they would participate in a trial to test the effect of a policy of routine induction at 39 weeks gestation for nulliparous women over 35 years of age on caesarean section rates.

Conclusions: Many consultant obstetricians already induce pregnant women of advanced maternal age at term. An RCT is needed to test the effects of this policy and would be feasible.

PL.47 CASE SERIES OF POST-OPERATIVE PELVIC INFECTION FOLLOWING UTERINE BRACE SUTURES APPLIED FOR MAJOR POSTPARTUM HAEMORRHAGE

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We reported a series of rare post-operative pelvic infection following brace suture in three patients aged 27 years to 35 years. One had multiple fibroids, one was a twin pregnancy and other had a history of three previous caesarean sections. All three had brace suture as the first-line surgical treatment for intractable postpartum

haemorrhage (PPH) during caesarean section following failed medical management. In all the cases, PPH was successfully controlled with brace suture, though one had uterine artery ligation at the same time and other had uterine artery embolisation 7 h later.

8 days to 15 days post-operatively, all three developed signs and symptoms of sepsis and/or bowel obstruction. CT scan/MRI revealed significant pelvic collection in two of them and pyometra in one. One underwent hysterectomy due to significant uterine wall necrosis and was re-admitted with bowel obstruction and had adhesiolysis. One had laparotomy and drainage of pelvic collection and other had uterine evacuation of pyometra and both had uneventful recovery.

Even though the post-operative complications of brace suture are rare, pelvic abscess remains a possible complication. It may be due to the uterine wall ischaemia/necrosis. Therefore, all patients need to be counselled regarding the possibility of uterine wall necrosis and laparotomy/hysterectomy in the event of pelvic collection following brace suture. It may be worth revisiting the idea of early hysterectomy for intractable PPH after failure of medical management, especially for the women who have completed the family in order to avoid subsequent morbidity following brace suture.

PL.48 POST-NATAL BLEEDING FROM A RECTAL DIEULAFOY LESION

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Introduction: The Dieulafoy lesion is a rare but important cause of recurrent gastrointestinal bleeding and is thought to be responsible for 3% to 5% of gastrointestinal bleeds. First described in 1894, 90% of these lesions occur in the lesser curvature of the stomach 6 cm from the gastroesophageal junction and are thought to be more common in males (2:1) with a median age of 54. We present the extremely rare case of a 32 year old woman who presented with severe PR bleeding following a recent lower segment caesarean section.

Case Presentation: She presented with what she described as a PV bleed 9 days after her caesarean section. On examination she was found to have a closed os and was found in fact to have a severe PR bleed. On admission, she had a tachycardia of 140, a blood pressure of 90/60 mm Hg and a haemoglobin of 5.7 g/dL. After resuscitation with seven units of blood and three units of FFP, selective angiography and embolisation of a rectal artery was performed. Since undergoing successful radiological intervention, endoscopy has identified a healing rectal Dieulafoy lesion 6 cm from the anal margin.

Discussion: To our knowledge this is the first case of a post-partum PR bleed due to a rectal Dieulafoy lesion and it demonstrates that a PR source must be considered in those patients presenting with ''PV bleeding''. Our images show how effective therapeutic angiography can be in the treatment of actively bleeding lesions in positions not conducive to endoscopy.

PL.49 QUALITATIVE STUDY TO ASSESS KNOWLEDGE, UNDERSTANDING AND ATTITUDE REGARDING INSTRUMENTAL DELIVERY IN OUR ANTENATAL POPULATION

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Aims/Objectives: Assess current understanding of instrumental deliveries (IDs).

Background: Instrumental deliveries are a common mode of delivery.[1] Research has shown women feel inadequately prepared for such deliveries and would welcome a review of care.[2] Benefit of birth preparation antenatal classes and postnatal debriefing is inconclusive.[3] Our goal is to provide better counselling and therefore reduce anxiety and psychological trauma associated with IDs.

Materials and Methods: Focus group interviews (n = 1–6 per group) were undertaken involving primiparous women (<20 weeks gestation). The research team sampled women purposefully to include a variety of cases (age, parity, social class and ethnicity). A pilot focus group was undertaken to refine topic schedule and operational procedures.

Results, Summary and Conclusions: Recurrent themes from participants were coded into topics. Topics included, ''intense fear of forceps and ventouse'' and ''lack of knowledge on why and how they were used''. Comments described forceps as ''barbaric'' and ''medieval''. Many women obtained information on IDs by ''word of mouth'' and usually reported negative stories. Media was not found to be an informative source on IDs. Importantly, women showed great interest in knowing more about IDs and perceived this knowledge may make them less anxious if faced with need for an ID. Strong feelings were presented that ''de-mystifying'' the process had potential to make instrumental deliveries less frightening.

Our aim is to develop a questionnaire from themes identified that will collect data from a larger sample of the antenatal population.

1. **Royal College of Obstetricians and Gynaecologists Clinical Effectiveness Support Unit.** National Sentinel Caesarean Section Audit Report. London: *RCOG* Press; 2001.
2. **Murphy DJ,** Liebling RE, Patel R, *et al*. Cohort study of operative delivery in the second stage of labour and standard of obstetric care. BJOG 2003;**110**:610–15.
3. **Rowan C,** Bick D, Bistos MH. Postnatal debriefing interventions to prevent maternal mental health problems after birth: exploring the gap between the evidence and the UK policy and practice. *Worldviews Evid Based Nursing* 2007;**4**(2):97–105.

PL.50 OBSTETRIC PRECURSORS OF SINGLETON PRETERM BIRTH <34 WEEKS GESTATION IN A CENTRE WITH A LOW INCIDENCE OF PRETERM DELIVERY

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Introduction: Rates of preterm birth (PTB) vary internationally. Our aim was to determine the incidence and aetiology of PTB among women attending a tertiary referral unit in Ireland.

Methods: Prospective study of all preterm deliveries between 23 weeks and 6 days and 33 and 6 days gestation over an 18 month period (January 2007 to June 2008) excluding congenital anomalies, multiple gestations and intrauterine fetal demises. PTB was categorised as resulting from preterm labour (PTL), premature rupture of the membranes (PROM) and medically indicated preterm birth (MIPTB).

Results: Among 12 739 births, the overall incidence of PTB was 1.6% (n = 212), with a mean gestational age at delivery of 31 weeks. 72 women (31.2%) were transferred from other centres. Rates of PTL, PROM and MIPTB are represented in the table.

Conclusions: The rate of preterm delivery in this Irish centre was low compared with rates in the USA and UK. Further investigation of the similarities and differences between Ireland and other international centres may provide further insight into the pathogenesis of PTB.

Abstract PL.50 Incidence and distribution of precursors of preterm birth among women who delivered between 24 and 34 weeks

	Incidence	Distribution
Preterm labour	53 (0.41%)	(25%)
Premature rupture of the membranes	65 (0.51%)	(30.6%)
Medically indicated preterm birth	94 (0.73%)	(44.3%)
Total	212 (1.6%)	

PL.51 UPTAKE, SUCCESS RATE, COUNSELLING AND DOCUMENTATION OF VAGINAL BIRTH AFTER CAESAREAN IN A TERTIARY CENTRE

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Design: Retrospective case note review from November 2007 to April 2008. 228 women had delivered previously by caesarean section in St Mary's Hospital, Manchester
Results: 188 patients had one prior caesarean section (CS) and 175 were considered ''eligible for vaginal birth after caesarean (VBAC)''. 83.6% of patients had documented counselling on mode of delivery; only 52.9% had risk of scar dehiscence documented. 24% patients received the hospital information leaflet.

69% of patients opted for a VBAC. Those who attempted a VBAC rather than an elective repeat CS had a significant increase of a prior vaginal birth rather than those who had only delivered by CS ($p = 0.001$), especially so for those who had already had a VBAC ($p = 0.001$). There was not a significant difference in attempted VBAC when age, Body Mass Index (BMI), ethnicity, social class or gestation at counselling were analysed.

70.2% of patients had a successful VBAC. Successes were significantly increased if there had been a previous vaginal birth, were Caucasian and had smaller babies. Women who had a prior CS for failure to progress were significantly less likely to be successful compared to those for ''fetal distress'' or breech.

42 women had prior two CS. The rate for VBAC in these patients was 19.4%. The success rate was 33.3%.
Conclusions: The VBAC rate is above the national average but the success rate below Royal College of Obstetricians and Gynaecologists (RCOG) targets. We serve a large non-white population which may account for reduced VBAC success rates.

PL.52 IS TERBUTALINE A BETTER TOCOLYTIC FOR EXTERNAL CEPHALIC VERSION? EXPERIENCE AT A TERTIARY REFERRAL HOSPITAL

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Introduction: Guidelines advocate the use of external cephalic version (ECV) to reduce the incidence of Caesarean delivery for breech presentation and perinatal morbidity. Use of tocolytics increases the success rates of ECV. However there remains debate as to whether the success profile of terbutaline compared to nifedipine warrants its use despite a greater incidence of maternal side effects.
Method: A retrospective observational study of outcomes following ECV between 2007 and 2009 following a change in protocol for tocolysis from nifedipine 10 mg orally to terbutaline 250 mcg subcutaneously was performed. Primary outcomes were presentation at delivery and mode of delivery.
Results: 51 patients attended for ECV using nifedipine delivered from 1 February 2007 to 30 September 2007 and 46 patients attended for ECV using terbutaline delivered from 1 February 2008 to 30 September 2008. The rate of cephalic presentation at delivery was 65% (30/46) with terbutaline vs 49% (25/51) with nifedipine ($p = 0.15$, Fishers exact test). The overall rate of Caesarean delivery was 54% (25/46) in the group where terbutaline was used and 67% (34/51) in the group where nifedipine was used ($p = 0.30$, Fishers exact test).
Conclusions: There appears to be a trend towards higher rates of cephalic presentation at delivery and lower Caesarean delivery rates with terbutaline. Whilst not statistically significant, our findings are consistent with a recent published randomised controlled trial[1] suggesting that terbutaline is associated with a lower rate of Caesarean sections following ECV.

1. **Collaris R** and Tan PC. Oral nifepidine versus subcutaneous terbutaline tocolysis for external cephallic version: a double-blind randomised trial. *BJOG* 2009;**116**: 74–81.

PL.53 A REVIEW OF VARIATIONS IN RATES OF RETAINED PLACENTA THROUGH THE AGES: AN ANALYSIS OF RATES OF RETAINED PLACENTA AT NINE HOSPITALS IN THE UK AND IRELAND AND TWO HOSPITALS IN ASIA FROM THE EARLY TWENTIETH CENTURY TO THE PRESENT DAY

S Ibish, A Hawkes. *University of Liverpool, Liverpool, UK*

Background: Retained placenta (RP) is a condition with a delay in the delivery of the placenta in the third stage of labour. There are currently limited studies on the changes in the rates over time and the aetiology behind it.
Objective: To collect and analyse data on the rates of RP from the early 1900s until the present day.
Methods: The Annual Reports, at the Archives of the Royal College of Obstetrics and Gynaecology (RCOG) in London, were the sources of data collection. The forms used included numbers of RP (referrals and inpatients) and the gestation and definition of management (MRoP, or by time). The total number of deliveries was also collected (number of hospital deliveries and any recorded additional deliveries in the area- live births and still births). MRoP<30 min and miscarriages were excluded. The data were then evaluated for trends in the rates of retained placenta and compared with the results of a literature search.
Results: 11 hospitals were recorded, two of which were international. This study found a generally upward trend in the rate of retained placenta in the last century at the nine UK and Irish hospitals, despite regional variations.
Conclusion: The generally increasing trend in the rate of retained placenta in Western Europe over the course of the last century may be attributable to a number of different causes. More research should be carried out in this area and a comparison of data from different countries across the world should also be attempted.

PL.54 SPONTANEOUS SUBCUTANEOUS EMPHYSEMA FOLLOWING NORMAL DELIVERY – A CASE REPORT AND REVIEW OF LITERATURE

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Objectives: To present a case of subcutaneous emphysema following normal vaginal delivery with the review of literature.
Case Report: A 22 year-old primigravida with no previous medical or surgical problems had a spontaneous vaginal delivery. Within 4 h postpartum, she noticed swelling of the face and neck. She had no respiratory symptoms. On examination, she had palpable crepitus on the right side of the face and neck. Chest examination was normal. Chest radiograph revealed clear lung fields with air in the right supraclavicular region. A diagnosis of subcutaneous emphysema was made. She was managed conservatively with the joint care of the medical team.
Discussion: Spontaneous subcutaneous emphysema is an extremely rare complication of labour. It can be potentially life threatening when associated with pneumomediastinum. It may arise spontaneously due to pressure gradients producing alveolar disruption. It usually manifests during the second stage of labour, but may occur at all stages. Treatment is usually conservative; however, intensive care may be required when there is respiratory compromise.
Summary: This case report describes spontaneous subcutaneous emphysema in a primigravida following normal delivery. Although this condition is rare, it is important that all maternity health care professionals should be aware of this potentially life-threatening condition.

PL.55 VAGINAL TWIN DELIVERIES: A SURVEY OF SENIOR OBSTETRIC TRAINEES IN THE UK

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Aims and Objectives: A survey of the opinions and practices of senior obstetric trainees in the UK regarding vaginal twin deliveries.
Background: The stillbirth and neonatal mortality rates for twins are 2.5 times and 7.6 times the rates for singletons.
Methods and Materials: A questionnaire based survey administered at the Royal College of Obstretics and Gynaecology/BMFMS theoretical course for the Labour ward lead and Advanced labour ward Practitioner Advanced training skills modules (ATSM) held at the RCOG in May 2008.
Results: There were 76 respondents. 70/76 (92%) had obtained MRCOG part two and only 8/76 (10%) had less than five years experience in O&G.

There were trainees from various training regions such as North West Thames (13), West Midlands (9), Ireland (6), North West (6), Scotland (6), Yorkshire (5), Northern (4), South West (3), Wales (3), Wessex (2), Mersey (2), Oxford (2), etc.

Only 8/76 had conducted less than six vaginal twin births with 38/76 (50%) conducting over 20 deliveries.

52/76 (68%) had performed an emergency caesarean section for twin 2.

21/76 (28%) did not feel they had enough skill or experience to perform vaginal twin deliveries, unsupervised, when there is a malpresentation of twin 2.

54/76 (71%) said consultants in their units did not routinely attend vaginal twin births with a malpresentation of twin 2, when these occurred out of hours, however 66/76 (87%) felt the consultants should attend.

Summary/Conclusion: The results suggest targeted and supervised training in vaginal twin deliveries needs to occur as we await the results of the Twin Birth Study.

1. **Confidential Enquiry into Maternal and Child Health (CEMACH).** Perinatal Mortality 2006: England, Wales and Northern Ireland. CEMACH: London, 2008.

PL.56 CAESAREAN SECTION-RELATED ANAEMIA AND TRANSFUSION AND THE APPLICATION OF CELL SALVAGE

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Background: Haemorrhage at caesarean section (CS) remains a major cause of morbidity. Royal College of Obstretics and Gynaecology guidance states that cell salvage is recommended for women with an estimated blood loss (EBL) ⩾1500 ml at CS.[1] To quantify potential benefits of cell salvage at a busy DGH, a study was performed to investigate rates and risk factors for CS-related haemorrhage, anaemia and transfusion.
Methods: A retrospective case notes audit was performed of 119 women undergoing CS from May2008 to July 2008.
Results: 14 women (12%) were cross-matched pre-CS, only two of whom (14%) were transfused.

There was excellent correlation between EBL and average perioperative haemoglobin (Hb) fall.

5% were transfused, rate increased with EBL; no association between pre-op anaemia and transfusion. 4/6 women transfused were discharged with HB<9 g/dl.

48% of non-transfused women were discharged with Hb<10 g/dl, of whom 24% had Hb <9 g/dl. Results suggest an association between anaemia and increasing length of hospital stay, although this did not reach statistical significance.

Cost: 17 units transfused to six women: 17×£139.72(2) = £2375+related costs. Cell salvage for six women = 6× £80 = £480+start-up costs.
Conclusions: Significant anaemia related to CS is commonplace, even in women transfused, leading to major morbidity and expense. Pre-operative ability to predict need for transfusion is limited but intra-operative assessment of blood loss is reasonable. Cell salvage makes blood available to every patient based on intra-operative EBL, at a volume proportional to loss. It could have important patient safety, wellbeing and cost advantages.

1. **Royal College of Obstetricians and Gynaecologists Green Top Guideline**. Blood transfusion in obstetrics Dec 2007.
2. **National Blood Transfusion Centre Statistics 2008–2009**.

PL.57 CONSEQUENCES OF THE TERM BREECH TRIAL ON THE MANAGEMENT AND OUTCOMES OF UNDIAGNOSED TERM BREECH PREGNANCIES

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The Term Breech Trial (TBT) reported that in term breech pregnancies, planned caesarean is associated with better perinatal outcomes than planned vaginal birth. Few women in the TBT were diagnosed in labour; however, differences in perinatal outcomes were less marked when diagnosis was made in labour and maternal outcomes in this subgroup were not reported.

Our aim was to describe the impact of the TBT on management of women diagnosed with term breech in labour in a busy UK hospital, with respect to counselling, chosen mode of delivery, maternal and fetal outcomes. Data were collected for 62 consecutive women over five years prior to the TBT and 73 consecutive women over five years after its publication.

Pre-TBT, 38/62 opted for vaginal birth. More detailed counselling was documented post-TBT but the proportion opting for vaginal birth fell to 27/73 ($p<0.05$). Perinatal outcomes were unchanged over time. Pooling data, 11/65 babies whose mothers opted for vaginal birth had umbilical arterial pH<7.1 and 3/65 required Special Care Baby Unit (SCBU) admission. For babies whose mothers opted for caesarean, 11/70 had pH<7.1 (ns) while 2/70 required SCBU admission (ns). Mean blood loss for women aiming for vaginal birth was 486.3 ml ±SD 486.8 ml and 4/65 had > 1000 ml estimated loss. Women opting for caesarean had mean blood loss of 646.4 ml ±SD 314.2 ml ($p<0.05$) and 7/70 lost > 1000 ml ($p<0.05$).

More women now opt for caesarean when breech is diagnosed in labour. Accepting limitations in our study, perinatal outcomes are not markedly improved by caesarean delivery but maternal haemorrhage is increased.

PL.58 ANTENATAL EDUCATION FOR INSTRUMENTAL BIRTHS – ARE MIDWIVES ADEQUATELY TRAINED TO FACILITATE ADULT LEARNING AND DELIVER EFFECTIVE ANTENATAL EDUCATION?

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Background: One in four women in their first pregnancy will have an instrumental birth. Many of these women feel that they have been inadequately prepared during their antenatal education classes. Currently antenatal education is largely given in a passive and non-interactive way. Adult education based on participative methods of teaching enhances the uptake of information making it more meaningful to the learner.
Aim: To investigate what training midwives have had in facilitating adult learning through antenatal education.
Method: A postal questionnaire survey of all community midwives employed by one acute hospital trust.
Results: There was an excellent response rate, 39/42 (93%). The 39 respondents listed 18 different courses and training programmes ranging from post graduate education to locally run study days. Over half, 26/39 (67%), had attended the English National Board

"Teaching and Assessing in Clinical Practice". Only 7/39 (18%) had a qualification in adult education and 5/39 (13%) had not attended any training.
Conclusion: Midwives have accessed a variety of training courses, the majority of which do not teach the principles of adult education.
Discussion: Improving the provision of information about instrumental births can provide opportunities to improve women's birth experiences. There is a need to develop a standardised curriculum about instrumental births to incorporate into antenatal education programmes. The curriculum should include training for midwives in the principles of adult education so they can facilitate more effective learning.

PL.59 TARGETING ANTENATAL CORTICOSTEROIDS FOR FETAL LUNG MATURITY BASED ON FETAL FIBRONECTIN TESTING

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Background: Respiratory distress syndrome is a complication of preterm birth and a leading cause of neonatal morbidity and mortality. Antenatal administration of corticosteroids is indicated in women at risk of preterm birth to accelerate fetal lung maturation.[1] There is a lack of evidence surrounding the use of corticosteroids in asymptomatic women who are high-risk for preterm birth (PTB) who receive corticosteroids on the basis of clinical and biochemical markers.
Objective: To assess average time between administration of corticosteroids and delivery in symptomatic and asymptomatic women to determine whether corticosteroids are justifiably indicated in an asymptomatic population.
Population: 75 women who received steroids undergoing fetal fibronectin (fFN) testing between January 2007 and December 2008 were divided into symptomatic and asymptomatic populations.
Outcome Measures: Average time in days from administration of corticosteroids to date of delivery.
Results: 59 symptomatic women received corticosteroids. Two of these women delivered <24 hrs and a further four delivered <2 weeks. The average time from administration to delivery was 42.2 days (range 0–101 days).

16 asymptomatic women received steroids. No women delivered <24 hrs, one woman delivered <2 weeks. The average time from administration to delivery was 64.5 days (range 12 days to 123 days).
Conclusions: Symptomatic high-risk women are unlikely to deliver <24 h despite a positive fFN. Only one asymptomatic woman delivered <2 weeks suggesting that prophylactic steroids are rarely beneficial in this population as most women have the opportunity to receive steroids based on symptoms. Steroids should be targeted towards symptomatic women who are positive for fFN.

1. **Roberts D,** Dalziel SR. Antenatal corticosteroids for accelerating fetal lung maturation for women at risk of preterm birth. *Cochrane Database of Systematic Reviews* 2006, Issue 3. Art. No.: CD004454. DOI:10.1002/14651858.CD004454.pub2.

PL.60 DOES A NORMALLY SITED PLACENTA AT 18–20 WEEKS RULE OUT PLACENTA PRAEVIA?

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Introduction: The positive predictive value of a low placenta at the 18–20 week scan is well established and known to be poor. There was debate in our department about how reliable a normal sited placenta at 19 weeks was at ruling out placenta praevia.
Study Design and Method: A retrospective review of the placental site as reported at the 18–20 week scan, in all patients who went on to have a caesarean section for placenta praevia between 2003 and 2008. Using a computer coding system, patients who were coded as having had a caesarean section for placenta praevia were identified. All antenatal ultrasound scans were then reviewed for placental position in relation to the cervical os.
Results: 22 out of 68 (32%) patients who had a caesarean section for placenta praevia did not have a low lying placenta at the 18–20 week scan.
Conclusions: A normally sited placenta at 18–20 weeks does not rule out placenta praevia later on in pregnancy. Clinicians should have a low threshold for carrying out a third trimester scan for placental site for women in whom placenta praevia is suspected, despite having a normally sited placenta at the 18–20 weeks scan.

PL.61 WITHDRAWN

PL.62 AUDIT OF DECISION TO DELIVERY INTERVALS FOR ASSISTED VAGINAL DELIVERIES

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Background: Unlike emergency caesarean sections, there are currently no guidelines suggesting the maximum time for assisted vaginal deliveries. In the following audit we set out to describe the decision to delivery intervals for ventouse and forceps deliveries.
Standards: Currently no standards exist. From previous studies the average interval ranges between 20 and 30 min.
Design: This was a retrospective study over three months in the period between May 2008 and July 2008 of 180 women who gave birth by assisted vaginal delivery. Data were recorded from patient notes and analysed using GraphPad Prism 4.0 for Windows.
Setting: Maternity unit delivering over 5000 babies each year.
Main Outcome Measures: Decision to delivery interval and maternal and neonatal outcomes.
Results: The mean (SEM) decision to delivery interval was 43.1 ± 2.2 min and 17.2 ± 1.3 min for forceps and ventouse deliveries respectively ($p<0.0001$). In specific cases of fetal distress the interval was 29.2 ± 2.9 min and 14.9 ± 0.9 min respectively ($p<0.0001$).
Conclusion: Unlike previous studies (Okunwobi-Smith, 2000; Eldridge, 2004) we find that it is quicker to achieve an assisted vaginal delivery by ventouse than by forceps.

PL.63 BREASTFEEDING, BEST FEEDING PROJECT: DEVELOPING A BLENDED LEARNING APPROACH TO LINKING EVIDENCE TO PRACTICE

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Breastfeeding makes a significant impact on the health and well-being of mothers and their babies. Health policy drivers, both nationally and internationally, recognise the significant impact of breastfeeding education in the effective support of breastfeeding families. The University of Leeds, School of Healthcare, has a long tradition of excellence in breastfeeding education. Opportunities to enhance student learning through the development of a blended learning approach have been identified, and so this innovative project "Breastfeeding, best feeding" utilises e-learning, discussion groups and workbooks in order to enable students to become active, reflective learners as they focus on linking evidence to practice.

The e-learning package is interactive and multi-layered, which allows students to engage at a level appropriate to their learning needs whilst guiding those students who wish to extend their learning. This is not a midwifery-specific agenda and the e-learning resource is intended for learning and teaching use across the school as well as being an accessible source of information for the wider public.

Workbooks have been developed which complement and extend the information contained within the e-learning resource. Students

use these workbooks within clinical practice and in discussion groups to link theory with practice and maximise the opportunity to engage in the application of knowledge through reflection.

All of these approaches have been developed with the intention of enabling students and higher education institutions to evidence the quality of their breastfeeding education and that they have met the requirements of the UNICEF UK Baby Friendly Initiative Standards for Education.

PL.64 GEOGRAPHICAL VARIATION IN RETAINED PLACENTA RATES

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Objective: Retained placenta is a dangerous complication of labour, the incidence of which ranges from 0.008% to 6.26% of normal vaginal deliveries, with higher rates from developed countries. We therefore sought to explore the variation in reported rates of retained placenta around the world.
Methods: A systematic review of observational studies was performed to obtain rates of retained placenta from around the world. Rate of retained placenta was defined as rate of manual removal and rate of retained placenta at 30 min.
Results: The systematic review yielded 25 sets of data, 14 from developed countries and 11 from developing countries. The median rate of retained placenta at 30 min was significantly higher in developed countries (2.67% vs 1.46%, $p<0.02$). The difference between developed and developing countries was even greater when considering rates of manual removal of the placenta (2.24% developed and 0.45% developing ($p<0.0001$)).
Conclusions: There appears to be higher rates of both retained placenta and manual removal in the developed world. This may be due to the more common use of medical interventions which have been shown to increase rates or retained placenta, differing cultural attitudes towards childbearing, or because retained placenta is identified and treated more quickly in the developed world.

PL.65 UTERINE TAMPONADE WITH BAKRI POSTPARTUM BALLOON TO STOP BLEEDING IN MAJOR POSTPARTUM HAEMORRHAGE

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Objective: To study effectiveness of uterine tamponade with Bakri postpartum balloon in management of massive postpartum haemorrhage.

To study the safety of uterine tamponade with Bakri postpartum balloon in the management of massive postpartum haemorrhage.
Design: Retrospective review.
Setting: Large Maternity Unit in England. Birth rate around 3000 to 3500 per annum.
Population: All women who had uterine tamponade for severe postpartum haemorrhage from January 2000 to December 2007.
Methods: Retrospective study of hospital records of women who had uterine tamponade for severe postpartum haemorrhage.
Main Outcome Measures: Failure of uterine tamponade with Bakri balloon. Failure of the treatment defined as a need to proceed to subsequent surgical or radiological methods or death.
Results: 17 out of 18 (94%) women with major postpartum haemorrhage responded to uterine tamponade with Bakri balloon. One (6%) woman had uterine tamponade with Bakri balloon following failure of ligation of uterine arteries at caesarean section. The balloon tamponade was also unsuccessful in this case and haemorrhage was controlled by hysterectomy.
Conclusion: Uterine tamponade with Bakri balloon is an effective method of treatment in severe postpartum bleeding. There is an urgent need for large prospective studies in order to establish efficacy and safety accurately.

PL.66 IMPACT OF FETAL FIBRONECTIN TESTING IN A DISTRICT GENERAL MATERNITY UNIT

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Introduction: Fetal fibronectin testing (fFN) has a role in women with suspected preterm labour since a negative value should avoid unnecessary intervention. The aim of this study was to determine the impact of fFN testing since its introduction to our unit.
Methods: fFN testing and guidelines for its use were introduced after a programme of education. A case note review on women who had fFN testing was performed and information regarding interventions was retrieved: admission to hospital, use of corticosteroids and tocolytic therapy and intrauterine transfer to another unit.
Results: Over ten months, 51 women had fFN testing performed. 18 had a positive and 33 a negative result. Four women (three who tested positive and one negative) presented with vaginal bleeding and should not have been tested. Of the 18 women with a positive test, 17 (94%) were admitted to hospital (one women refused admission), 16 (89%) were given corticosteroids and two (11%) received tocolytic therapy. Five (28%) women were transferred out because of a lack of neonatal cots. Fewer women who tested fFN negative were admitted ($n = 15$, 46%), received corticosteroids ($n = 4$, 12%), received tocolytics ($n = 0$) or were transferred to another unit ($n = 0$). Reasons for admission despite a negative fFN test included: alternative diagnosis, distance from home and patient anxiety.
Conclusions: Women in suspected preterm labour who were fFN negative had fewer interventions than those who tested positive. With greater experience and confidence, we aim to reduce the number of admissions in women who test negative.

PL.67 DOES UTERINE ANOMALY REALLY CAUSE PRETERM LABOUR? A META-ANALYSIS USING THE BRADFORD HILL CRITERIA

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Uterine anomaly is often quoted as a cause of preterm labour, although the accuracy of this statement requires further assessment, especially in light of new diagnostic modalities such as ultrasound and MRI. We performed a meta-analysis on the most recent data in women diagnosed with uterine anomaly and their reproductive outcomes. Causation has been assessed using the Bradford Hill criteria.

Using Medline and Google Scholar databases, searches for original research were carried out using the search terms ''uterine anomaly'' ''Mullerian duct'' ''preterm labour'' and ''reproductive outcome''. Original research of good sample size ($n>10$), written in the last 20 years, in women who were diagnosed by either ultrasound of MRI, were included. This yielded four papers.

The combined data show the prevalence of preterm labour to be inconsistent, particularly where research has been subdivided into the individual anomalies. The proportion of patients with uterine anomalies who had preterm labour was similar to patients with a normal uterus (anomalous uterus 0.15; 95% CI, 0.13 to 0.18, normal uterus 0.11; 95% CI, 0.09 to 0.13). One paper demonstrated strength of association (odds ratio 7.02; 95% CI, 1.69 to 29.2), but only in women whose pre-term labour was indicated, rather than a spontaneous labour.

Previous work has suggested the vasculature of the anomaly as a plausible cause of preterm labour, although this requires further investigation, as does the effect of removing or repairing the anomaly on reproductive outcome.

This meta-analysis casts doubt on the assumption that uterine anomaly is a cause of pre-term labour.

PL.68 IS KNOWLEDGE ALONE ENOUGH FOR THE IMPLEMENTATION OF INTRAUTERINE RESUSCITATION?

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Aim: To audit if an in-depth knowledge of intrauterine resuscitation (IUR) was enough for it to be implemented in clinical practice.
Background: Fetal distress is a common occurrence on delivery suite and despite there being no national guidelines for IUR, there are a number of simple, safe measures such as administering intravenous fluids and oxygen, positioning mother in left lateral position and considering the use of tertbutaline. The aim is to improve fetal oxygenation and therefore the cardiotocograph grade (CTG), thus allowing time for interventions.

A previous knowledge survey showed good levels of understanding of IUR, midwives scoring 90%, obstetricians 95% and anaesthetists 98%. We therefore wanted to audit if this knowledge was being put into practice clinically.
Methods: Retrospective audit from August 2006 to August 2008, looking at all category 1 caesarean sections for fetal distress who underwent a general anaesthesia, to ascertain how widely IUR was being used.
Results: 91 cases were identified. 31 case notes were available and reviewed. IUR was documented to be used in less than 50%. The best-used method was intravenous fluids, used in 58% of cases. Left lateral position was used in 55% cases. Oxygen use was documented in 32% cases. Tertbutaline in 16% cases.
Conclusions: Whilst there is a good knowledge of IUR, this does not appear to have been applied in the clinical situation. We suggest further staff education in the use of IUR for fetal distress with a simple, easy-to-remember guideline, regular reminders and feedback.

PL.69 TECHNIQUE AT CAESAREAN SECTION – "DO WHAT I DO NOT WHAT THEY SAY"

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Aim: The aim of this study was to examine the current practice of nine Non-Consultant Hospital Doctors when performing caesarean section. The nine trainees had all worked for six months under the same consultant at the National Maternity Hospital, Dublin and been taught the same technique. They had performed an average of 28.22 caesarean sections before starting the post although this ranged considerably from 0–70.
Methods: An anonymous survey was distributed to all those trainees who had filled the post over the last five years. They were asked about their current practice in relation to eleven specific steps during the operation. They were also asked to nominate three consultants from the NMH and three others for whom they had worked who they themselves would attend or to whom they would refer their wives for caesarean section.

All the consultants who the trainees named were then also asked to fill out the survey. A comparison was then made between the trainee's own technique and that of the obstetrician whom they nominated.
Results: While none of the trainees still carried out all eleven elements in the survey, all continued to use at least 50% of the techniques. This varied from 100% who continue to await delivery of the placenta to 11% who continue to close abdominal muscle.

Interestingly, it was difficult to find any distinct pattern between the technique the trainees use themselves and those of the obstetrician who they nominated in their survey.

PL.70 CORRELATION BETWEEN CARDIOTOCOGRAPH AND SHORT-TERM NEONATAL OUTCOME

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Aim: To study the correlation between the category of cardiotocograph (CTG) and short term neonatal outcome in cases of emergency caesarean sections performed for fetal distress.
Methodology: Retrospective analysis of the emergency caesarean sections performed for suspected fetal distress over 6 months was analysed. 48 cases were identified and their CTG's were analysed and classified according to National Institute for Health and Clinical Excellence (NICE) guidelines. Neonatal outcome such as 5 min Apgar, cord Ph and NICU admission were collected.
Results: Out of 48 cases, 12 (25%) had a suspicious CTG and 36 (75%) had a pathological CTG. 8/48 (16.7%) babies needed NICU admission. Of these, all were classified in the pathological category. The reasons for admission were five for prematurity, one for sepsis and one for low Ph. In the suspicious category, 2/12 (16.6%) babies had Ph $\leqslant$7.2. In the pathological category 6/36 (16.6%) had Ph $\leqslant$7.2. Fetal blood sample (FBS) was not indicated in 17/48 (35.4%) due to bradycardia and prematurity. Fetal blood sampling was done in 9/31(29%). FBS was not attempted in others due to other factors such as cervical dilatation $\leqslant$3, suspicion of chorioamnionitis, abruption and slow progress. Three babies had 5 min Apgar $\leqslant$7 and all were classified in pathological category.
Conclusions: Out of the 48 cases of emergency sections done for suspected fetal distress, 16.6% of babies had Ph $\leqslant$7.2 and needed admission to NICU respectively. 6.25% of babies had 5 min Apgar $\leqslant$7. In accordance with other studies, our study concluded that specificity of fetal monitoring in predicting acidaemia seemed to be poor.

PL.71 WITHDRAWN

PL.72 HYPOXEMIC ISCHAEMIC ENCEPHALOPATHY: IS IT ALWAYS AVOIDABLE?

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Nearly two-thirds of all neonatal deaths from intrapartum causes in term infants were classified as "intrapartum asphyxia" in the 2005 Confidential Enquiries into Maternal and Child Health (CEMACH) report. The incidence of severe hypoxemic ischaemic encephalopathy (HIE) is ~1.5/1000. The risk of babies dying because of moderate and severe HIE is 0.2/1000.

We designed an audit of HIE in term babies delivered in seven hospitals in our region to identify themes and areas of sub-optimal care contributing to the outcome. Data were collected on a predesigned proforma. A panel of consultants graded the cases according to CEMACH classification: 0) normal care, 1) different management would not have altered outcome 2) Different management may have altered outcome 3) Different management would reasonably be expected to have altered outcome.
Results: 17/76 cases met the inclusion criteria (nine grade 2 and eight grade 3 HIE), an observed rate of 0.68/1000. Eight deliveries were by caesarean section, three by instrumental delivery and six normal.

Three cases were classified 1, one classified 2, four classified 3 and the remaining nine cases were classified 0 by the panel review. Lack of adherence to the intermittent auscultation protocol was the main theme identified in cases classified 2 and 3, followed by misinterpretation or failure to act on cardiotocographs (CTGs). A delay between decision to delivery was noted in two cases.
Conclusions: Our observed rate of HIE is lower than expected, involving both low and high-risk women. Training in interpretation of fetal heart rate may improve outcomes but most HIE appears to occur in the absence of sub-optimal care.