Role of Early Pregnancy Units

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Management of Miscarriage

- **Turnbull & Walker, 1954:**
  - J Obstet & Gynaecol Brit Com.
- 196 threatened miscarriage between ‘53-’56
- 33 (17.6%) miscarried during admission
  - 8 lost to follow-up
- 30 more (19.4%) miscarried before 28 weeks
- 125 normal antenatal course (63.7%)
  - Premature delivery - 20.9%
    - Perinatal loss 47%

Management of Miscarriage

- **1993 SJUH**
- 634 admissions for early pregnancy bleeding
- Mostly out of hours
  - Overnight stay
- Waiting diagnosis
- Waiting scans
  - ward round
- Waiting for theatre
  - 467 surgical evacuations

Early Pregnancy Assessment Unit

- Fast tracking pregnancy loss service
  - Reduce hospital stay
- Speed up access to scanning
  - Dedicated service
- Speed up diagnosis
  - Speed up evacuation
  - Reduce hospital stay
- No real assessment
- No follow-up

Early Pregnancy Assessment Unit

- **1995 SJUH**
- Part of our Day Case surgery unit
- 1500 attendances
- 938 new patients
  - 535 viable pregnancy
- 234 diagnosed as miscarriage
- 85% managed as outpatients
- Still 224 direct admissions to unit

Early Pregnancy Unit - SJUH

Ante-natal day unit

Fetal assessment unit

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Early Pregnancy Assessment Unit

- 2900 attendances in 1999
  - Range from 10-15/day
- Scans occur in 85% of visits
- 1868 new patients
  - 5-10 per day
  - 38% of deliveries
- Average 1.6 visits per person
  - Range 1-10

Early Pregnancy Assessment Unit

- Effect of unit on SJUH

	1993	1999	% Change
Patients seen	634	1967	+210%
Miscarriage	467	581	+24%
Surg Evac	446	260	-42%
Overnight	597	274	-56%

St James University Hospital

- Early Pregnancy Assessment unit
- Population served 750,000
- Situated within Gynae Assessment
- Separate unit with dedicated nursing staff
- Open Mon - Sat, 8.30 a.m - 4.30 p.m...
- Up to 18 weeks gestation
- Referrals from G.P’s, A & E, midwives, patients
- Dedicated Ultrasound 9 a.m.- 12 p.m.

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Evaluating the Early Pregnancy Unit (EPU) in a Large University Hospital

The Leeds Teaching Hospitals NHS
NHS Trust

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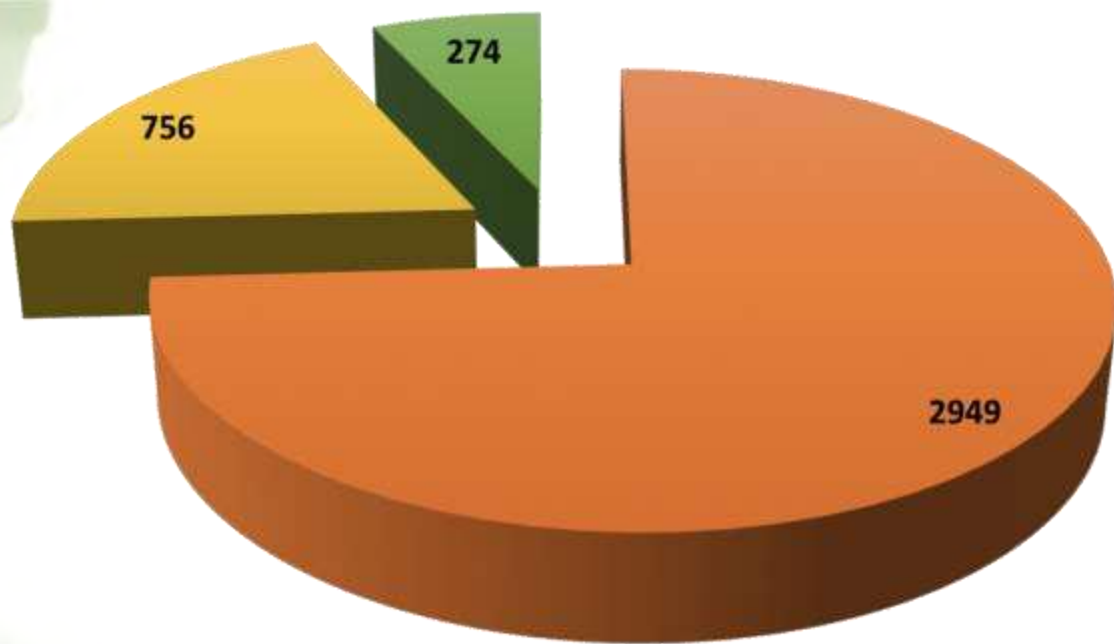
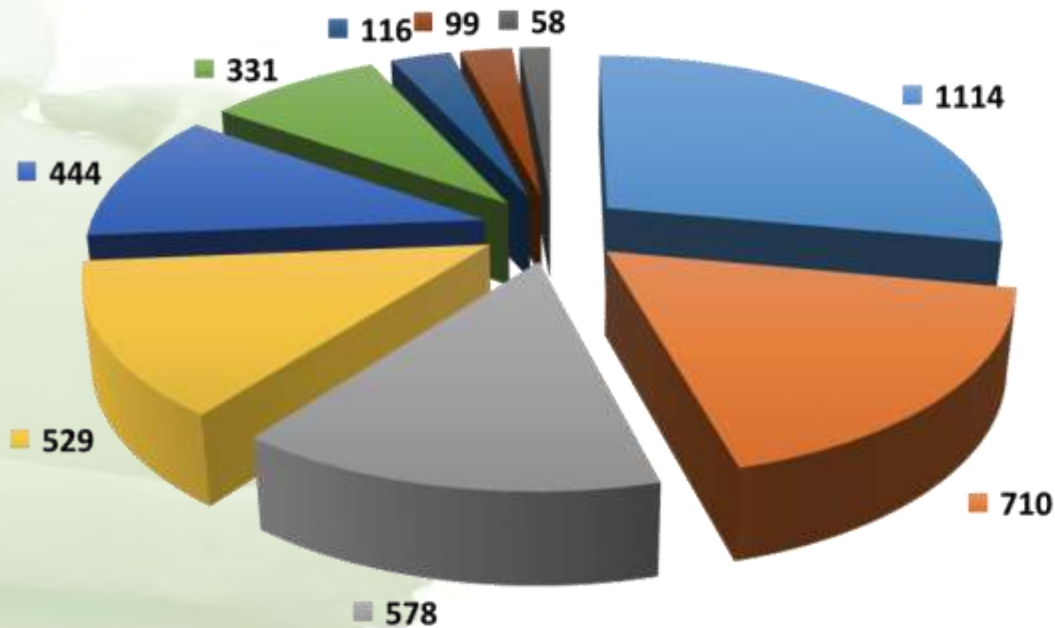
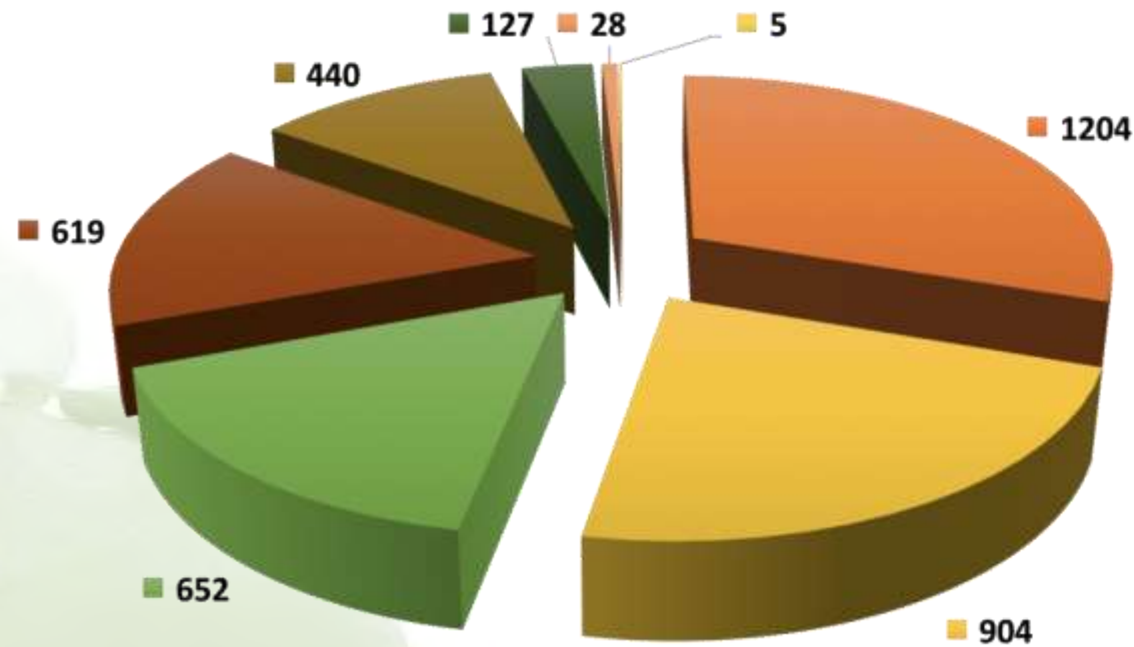
Methods

- New EPU electronic database initiated in May 2015.
- Multiple data points were analysed from all attendances (n=3979) to the unit between May 2015 and January 2016.


274
756
2949
New/Review Cases
New
Review
Blank

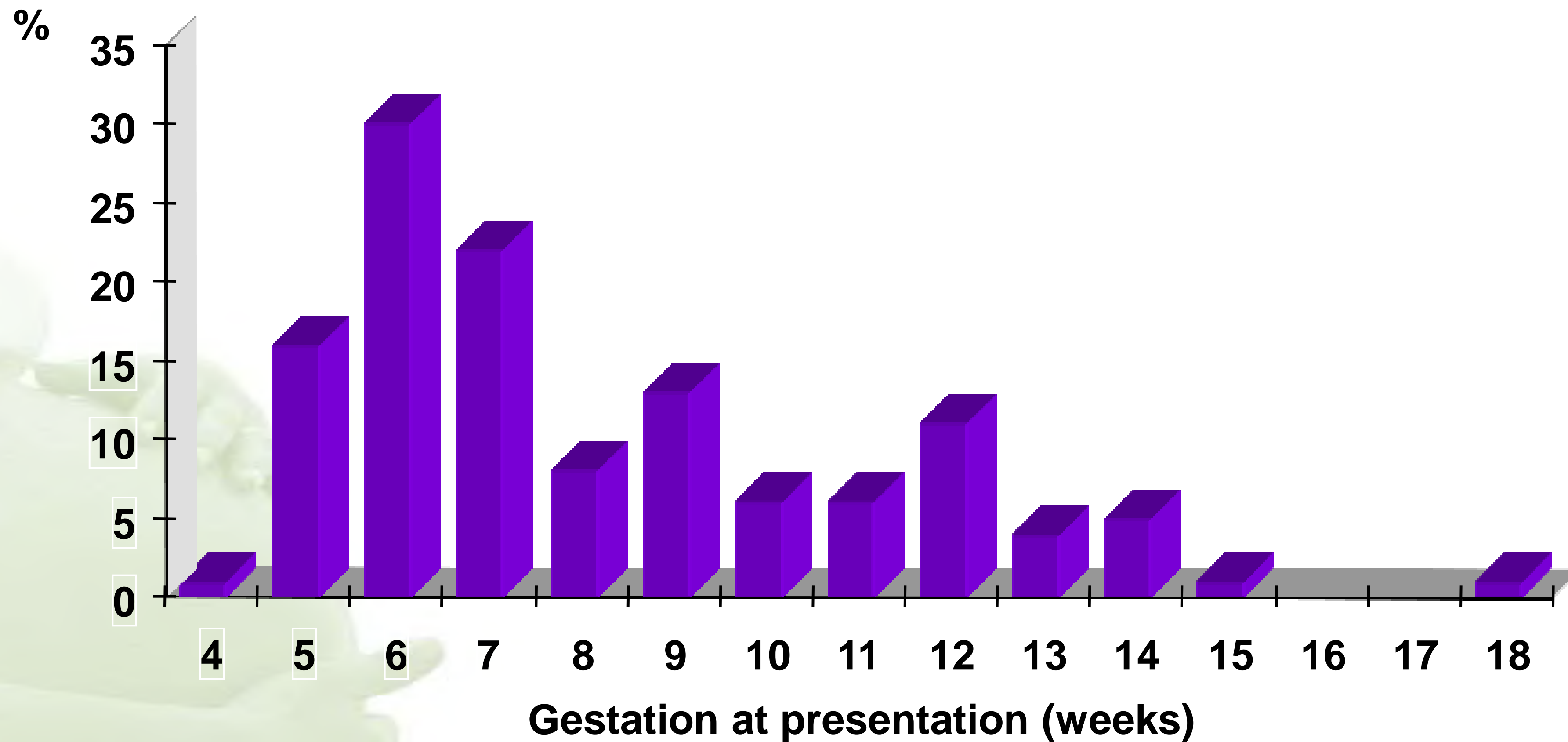

116
99
58
331
1114
444
529
710
578
Referral
self referral
Acute Gynaecology Unit
Early Pregnancy Unit
GP
Emenrgency Department
Blank
others
Midwife
Other hospital specialities



Presentation

- Bleeding
- Pain and bleeding
- Pain
- Rescan
- Blank
- High risk of ectopic
- Recurrent miscarriage
- others

Gestation at Initial Presentation



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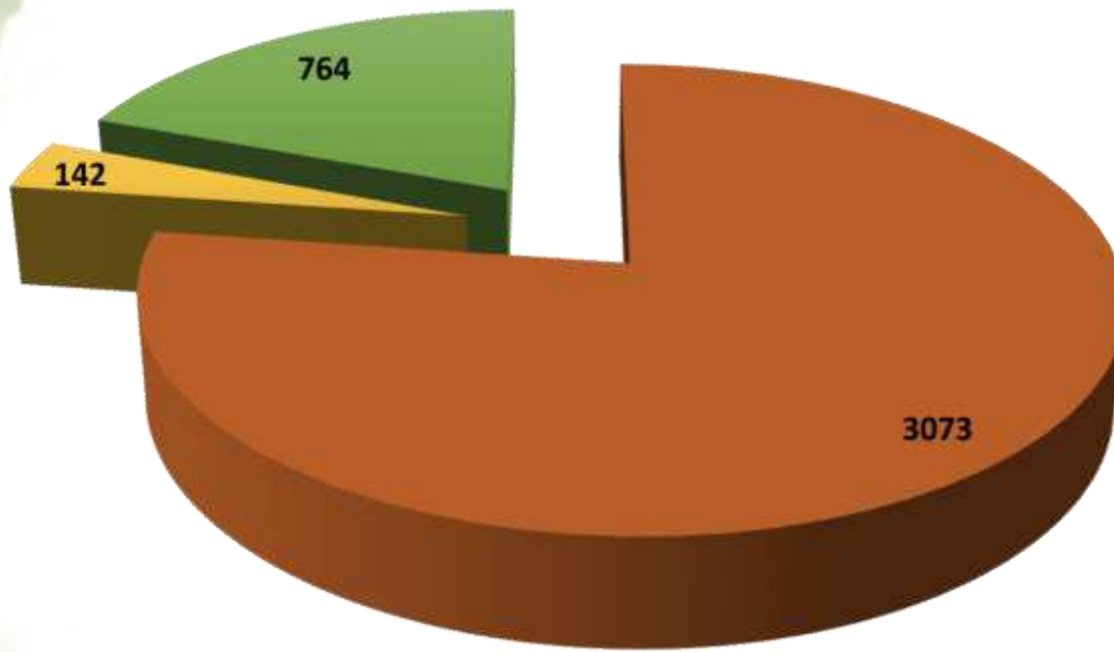
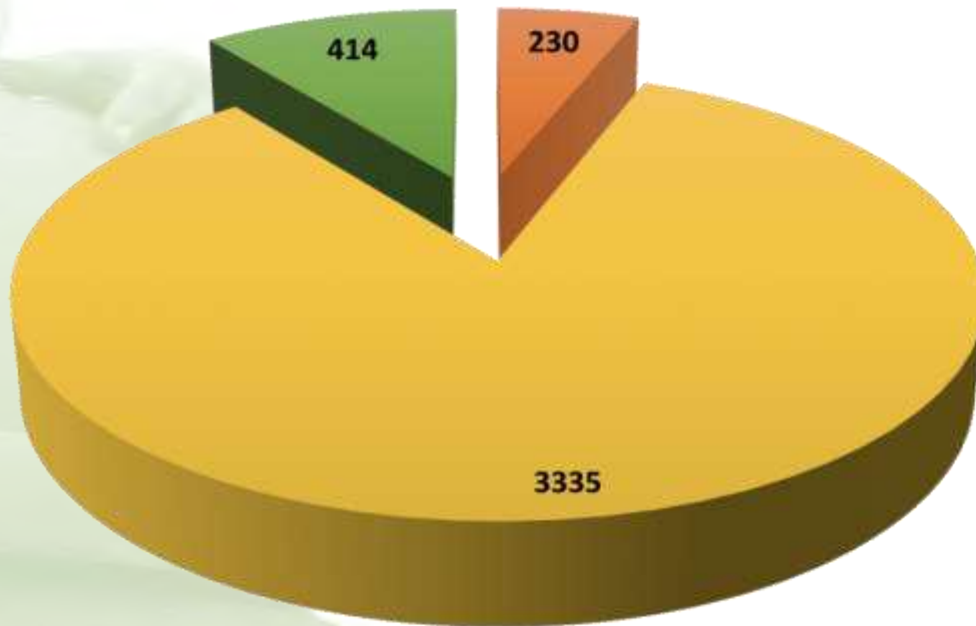


Pregnancy test

- Positive
- Negative
- Blank



No of patients scanned

- No
- Yes

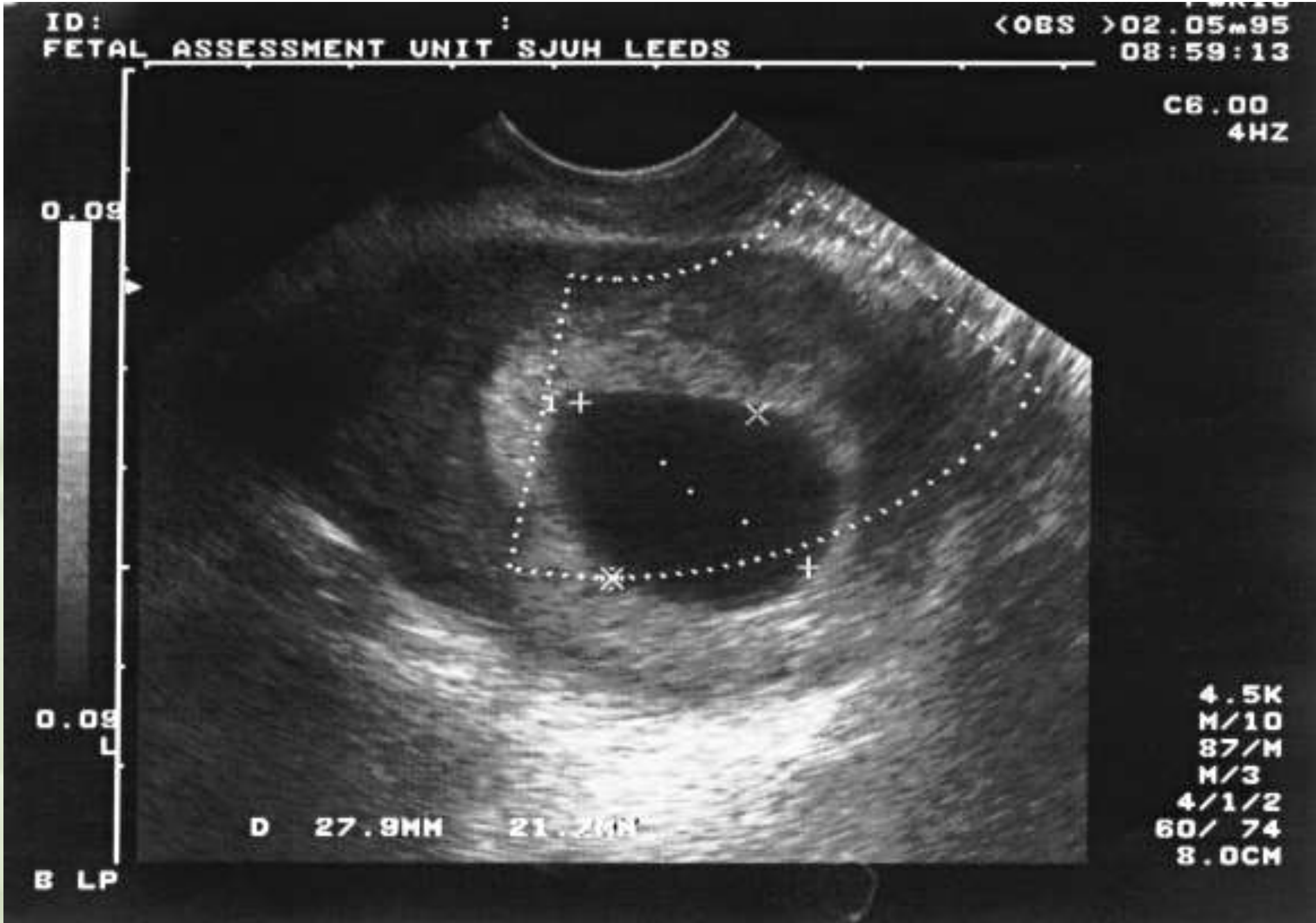
Management of Miscarriage

- Assessment
  - Pregnancy testing
  - Ultrasound
    - Vaginal/Abdominal
- Non-continuing pregnancy
  - Incomplete
  - Complete
  - Ectopic

Early Pregnancy Scan

ID: :
FETAL ASSESSMENT UNIT SJUH LEEDS
PWR16
<OBS >28.09m95
08:47:22
C5.00
18HZ
4/1/2
60/ 80
14.7CM
CRL 29.2MM 9W6D
B LP

Ultrasound scan - nonviable



Ectopic Diagnosis

- Ultrasound
  - One of exclusion
  - Adnexal pregnancy not always seen
    - Can see adnexal mass
    - Free fluid
- On its own is of limited value
  - Combination testing with hCG
- Allows conservative management

03/19/02 10:07:20
ADVANCED FERTILITY CTR OF CHI
P70 7MHz E721
B3
CN0
5cm
DR66
G 42
GE
MI<0.4

OF LEEDS

ADVANCED FERTILITY CTR OF CHI
83
03/19/02 10:07:20
P70 7MHz E721
CN0
5cm
DR66
G 42
GE
MI<0.4

OF LEEDS

03/19/02 10:08:54
ADVANCED FERTILITY CTR OF CHI
P70 7MHz E721
83

CN0
3cm
DR66
G 42

GE12.4

+CRL 4.5mm

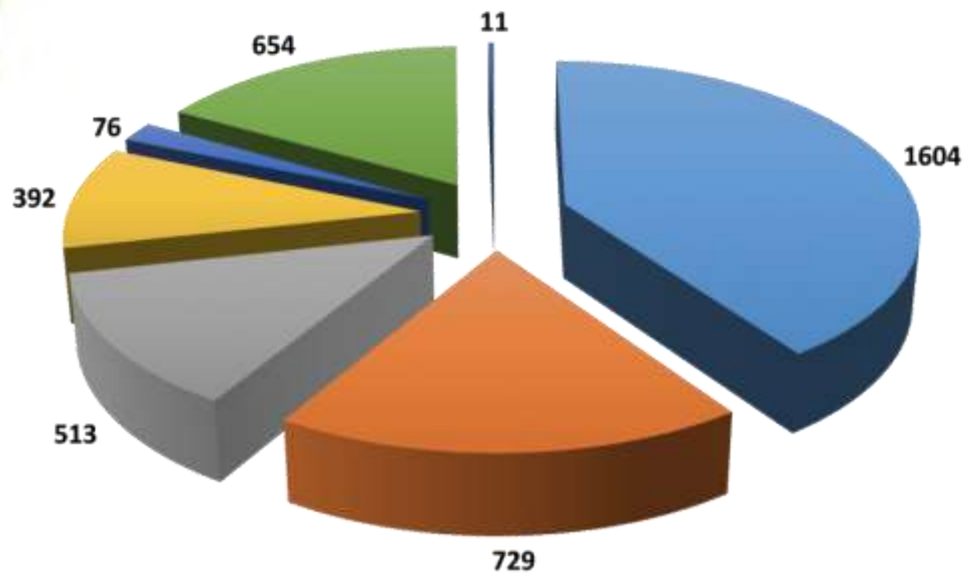
6W1D

MI<0.4

F LEEDS

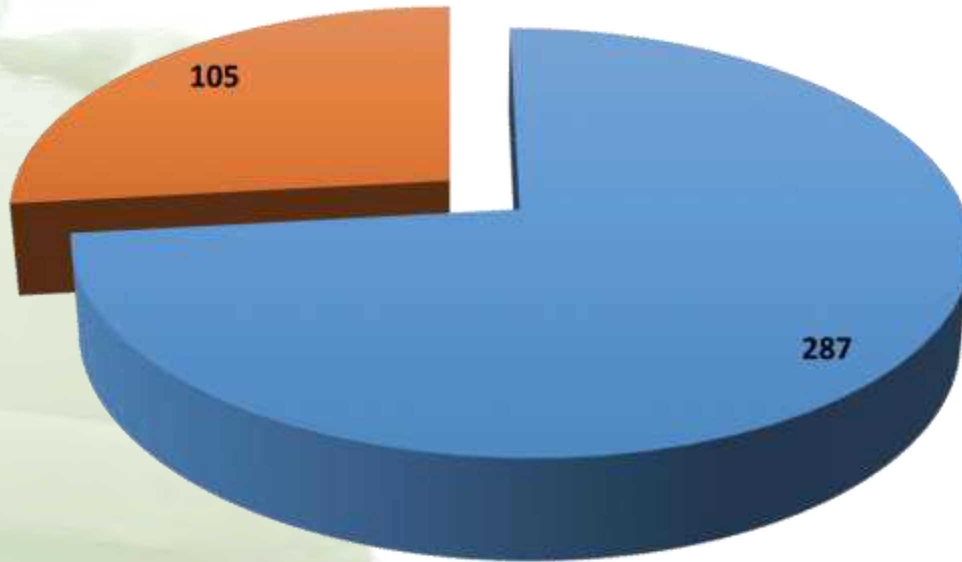
03/19/02 10:08:54
ADVANCED FERTILITY CTR OF CHI
P70 7MHz E721
83
CN8
3cm
DR66
G 42
GE12.4
CRL 4.5mm
6W1D
MI<0.4

F LEEDS



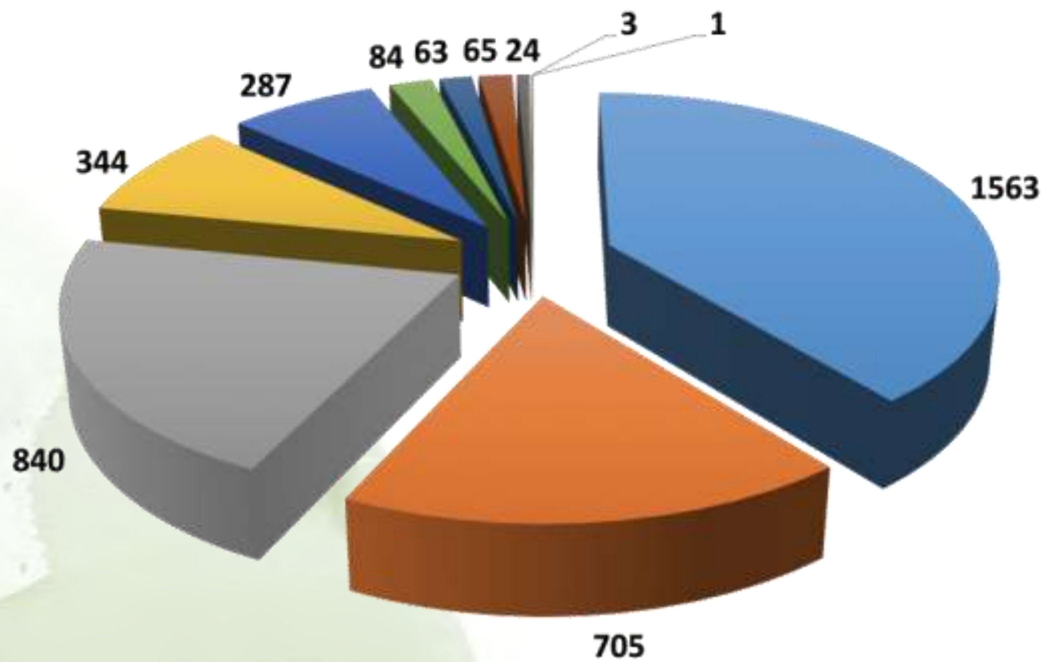
Scan Findings

- Viable pregnancy
- Miscarriage (all types)
- Intrauterine pregnancy of uncertain viability
- Pregnancy of unknown location (PUL)
- Ectopic pregnancy
- Blank
- Molar pregnancy



PUL Cases

- Paried hCG performed
- Paried hCG not performed



Management

- Dating scan
- Blank
- Others
- Rescan in 10-14 days
- Paried HCG
- Expectant management of miscarriage
- Surgical management of miscarriage
- Medical management of miscarriage
- Surgical management of ectopic
- Medical management of ectopic
- Expectant management of ectopic

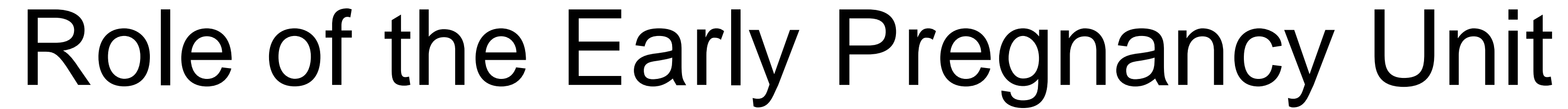
Management of Miscarriage

- Surgical evacuation
  - Access to theatres
- Medical evacuation
  - Facilities
- Expectant management

MANUAL VACUUM ASPIRATOR

Outcome

- Majority of women 74% attending for the first time.
- 77% had a +ve pregnancy test and a pelvic ultrasound scan was performed in 84%.
- 40% of women had a viable intrauterine pregnancy.
- In the miscarriage group offered all 3 options
  - the highest proportion of women chose conservative management
  - followed by medical management
  - only a small number opting for surgery
- In the PUL group paired HCG levels were performed in 73.2%



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  - Pregnancy testing
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  - Complete
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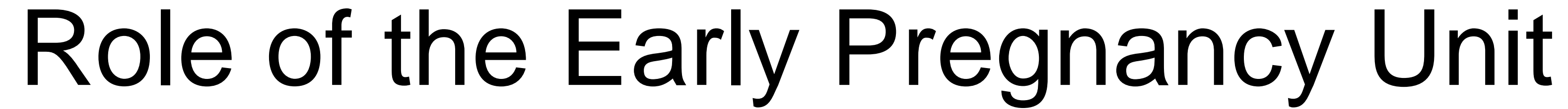
- Continuing pregnancy
  - Follow-up



Role of the Early Pregnancy Unit

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Ectopic Pregnancy

- Modern management
- Diagnosis
  - Ultrasound
  - Hormone assays
- Treament
  - Surgical
  - Medical
  - Expectant

Diagnosis

- Most fatal cases resulted from
  - Delayed diagnosis
  - Inappropriate investigation
  - Inappropriate treatment
- Improvements
  - Introduction of laparoscopy in the late 1960s
  - Reduced the need to observe clinically
  - Remained the only method of diagnosis until 1980s
- Ultrasound
- Sensitive pregnancy tests
- Beta hCG assays

Diagnosis

- Combination testing
- Pregnancy tests
  - Sensitive beta hCG assays
- Ultrasound

  Positive test + empty uterus = ectopic

  But

  May be miscarriage

  Early normal pregnancy

hCG levels

- Initially in 1980s
  - empty uterus
  - hCG concentrations above 6500 IU/l.
  - But
- Many patients had concentrations well below 6500 IU/l.
- Transvaginal sonography
  - superior resolution
  - hCG levels down to 1000 and 2000 IU/l
- sensitivities and specificities ranging from 95% to 100%.
- Follow up allows differentiation to be made.
- Reduced intervention

hCG levels in Ectopic Pregnancy

- Peak hCG level % of ectopics
- <1000 45%
- 1000-3000 21%
- 3000-5000 15%
- 5000-10,000 10%
- > 10,000 9%
- Trend of hCG levels % of cases
- Falling 57%
- Abnormally rising 36%
- Normally rising 6.4%

  - Daus et al, Journal of Reproductive Medicine, February, 1989, p.162

Treatment

- Surgery
  - Open
  - Laparoscopy
- Medical
  - Local
  - Systemic
- Conservative
  - Wait and see

Methotrexate

- Given single dose of 50mg/m2
- Repeated if hCG not reduces by 15% in 4-7 days
- There may be increased pain
- There may still be rupture of the tube
- Close follow-up of hCG levels
- Vital signs
- Around 24% experience side effects

Conservative management

- Success rate varies with hCG levels
  - <200 - 98% success
  - <500 - 73%
  - >2000 - 25%
- Recommended that if levels are <1000
  - An attempt can be made
  - Close monitoring required
  - Surgical intervention may be needed
- No real long term benefit

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Long term Outcome

- Follow-up in SJUH
- 2.4% miscarriages
  - 1% 1st trimester
  - 1.4% 2nd trimester
- 11% pre-term deliveries
  - 1.6% neonatal deaths
- 96% take home babies
  - Mean gestation 38.9 weeks

Conclusions - EPAU

- Prompt diagnosis of early pregnancy complications.
- Women self-refer to the service,
  - referrals overall are appropriate.
- Data allows us to reassure women that many will have a viable pregnancy despite bleeding
- 25%will not have a diagnosis after the first visit.
- The review also shows how some care is through the acute gynaecology unit and highlights the need to homogenize care between the two units to improve pathways for women.
- Linking with antenatal services for viable 40%

Keeping the mother and baby safe