Evidence-base for midwife-supported care

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• Midwife-led and midwife-supported care

What is the difference?
Midwife-led care

• Midwife-led continuity of care:

“The midwife is the lead professional in the planning, organisation and delivery of care given to a woman from initial booking to the postnatal period” (Sandall et al 2013).
Midwife-led care

• Midwife-led continuity of care is provided within a multi-disciplinary network of consultation with, and referral to, other care providers.

• Contrasts with medical-led models of care where an obstetrician is primarily responsible for care.
Midwives thoughtfully and reflectively give evidence-based midwifery care designed to promote normality, within medical-led models of care where an obstetrician or family physician is primarily responsible for care.
Evidence-based practice

Ignorance and poor practice
Do we all use research?
‘Routine’ care is always wrong for someone

- Routine ARMs:

- Smyth et al 2013 have shown that artificial rupture of membranes has no significant effect on length of first stage, CS, maternal satisfaction and low Apgars.

- So – not recommended routinely – even in prolonged labour
How can I find research?
It’s easy.....

• Access the Cochrane database:

• Just type “Cochrane Pregnancy and Childbirth” into Google.

• Then click on “Our Reviews” and click on any topic you are interested in.
Cochrane Pregnancy & Childbirth Group

Abdominal surgical incisions for caesarean section
Absorbable suture materials for primary repair of episiotomy and second degree tears
Active management of spontaneous labour versus routine care in women who have had one or more previous caesarean sections
Active versus expectant management for women in the third stage of labour
Acupuncture for induction of labour, treatment of insufficient lactation, turning a breech baby, pain management in labour, reducing blood loss in the third stage of labour
Admission tests other than cardiotocography for fetal assessment during labour
Read the American College of Obstetricians and Gynecologists document:

“Safe prevention of the primary cesarean delivery” (2014)
Examples:

Latent phase can be >20 hours (primip) >14 hours (multip)
Before 6cm dilatation, standards of active phase should not be applied

Second stage – allow at least 2 hours pushing (multip), 3 hours pushing (primip)
Research on midwife-led care
Cochrane review

- 15 trials involving 17,674 women having midwife-led continuity models of care (MLC)
- Women who had MLC were LESS likely to experience:
  - **regional analgesia** (average risk ratio (RR) 0.85, 95% confidence interval (CI) 0.78 to 0.92);
  - **instrumental birth** (RR 0.90, CI 0.83 to 0.97);
  - **preterm birth** <37 weeks (RR 0.76, CI 0.64 to 0.91);
Women who had MLC were LESS likely to experience:

- **fetal/neonatal death** (RR 0.84, CI 0.71 to 0.99)
- **amniotomy** (RR 0.80, CI 0.66 to 0.98)
- **episiotomy** (RR 0.84, CI 0.77 to 0.92)
Women who had MLC were MORE likely to experience:

- spontaneous vaginal birth (RR 1.05, CI 1.03 to 1.07);
- no intrapartum analgesia/anaesthesia (RR 1.21, CI 1.06 to 1.37);
- attendance at birth by a known midwife (RR 7.04, CI 4.48 to 11.08);
- a longer mean length of labour (hours) (mean difference (MD) 0.50, CI 0.27 to 0.74)
There was NO DIFFERENCE between women who had MLC and those who had CLC in:

- caesarean births, antepartum haemorrhage, intact perineum, fetal loss or neonatal death >24 weeks induction of labour, antenatal hospitalisation, augmentation/artificial oxytocin in labour, opiate analgesia, perineal laceration requiring suturing, postpartum haemorrhage, breastfeeding initiation
There was NO DIFFERENCE between women who had MLC and those who had CLC in:

- low birthweight infant
- five-minute Apgar score < 7
- neonatal convulsions
- admission of infant to special care or neonatal intensive care unit(s)
- length of neonatal hospital stay (days).

(Sandall et al 2015)
In Ireland: Comparing midwife-led and consultant-led care

Cecily Begley, Declan Devane, Mike Clarke, Colette McCann, Patricia Hughes, Mary Reilly, Roisin Maguire, Shane Higgins, Alan Finan, Siobhan Gormally, Miriam Doyle.
The MidU study
Healthy women without risk factors 4190 (43%)

Consent to participate 2260 (54%)

Randomisation 2:1 Ratio

Midwife-led care (1101)

Consultant-led care (552)

Outcomes

Comparison of groups
• Seven primary outcomes showed no statistically significant difference between MLU and CLU

  - caesarean birth ($163 \ [14.8\%] \ vs \ 84 \ [15.2\%]$; RR $0.97$, 95% CI $0.76$, $1.24$)
Primary outcome measures

- **induction of labour** (248 [22.5%] vs 138 [25.0%]; RR 0.90, 95% CI 0.75, 1.08)

- **episiotomy** (126 [11.4%] vs 68 [12.3%]; RR 0.93, 95% CI 0.70, 1.23)
Primary outcome measures

- **instrumental birth** (139 [12.6%] vs 79 [14.3%]; RR 0.88, 95% CI 0.68, 1.14)

- **Apgar scores less than 8** (10 [0.9%] vs 9 [1.6%]; RR 0.56, 95% CI 0.23, 1.36)
Primary outcome measures

- **postpartum haemorrhage (PPH)** (144 [13.1%] vs 75 [13.6%]; RR 0.96, 95% CI 0.74, 1.25)

- **initiation of breastfeeding** (616 [55.9%] vs 317 [57.4%]; RR 0.97, 95% CI 0.89, 1.06)

(Begley et al 2011)
Two primary outcomes did show a statistically significant difference between MLU and CLU
• MLU women were significantly less likely to receive:

- **continuous EFM** (397 [36.1%] vs 313 [56.7%]; RR 0.64, 95% CI 0.57, 0.71)

- **augmentation of labour by amniotomy or with oxytocin** (436 [39.6%] vs 314 [56.9%]; RR 0.50, 95% CI 0.40, 0.61)
Items for discussion

• Accelerating labour
• Pain relief
• Fetal monitoring
• Birth

• With maternal satisfaction and neonatal outcomes in relation to these

• But, first, the research.....
Cochrane review (25 trials, 5218 women)

- Women who were upright as opposed to in recumbent positions:
  - First stage of labour was 1 hour 22 mins shorter (average MD -1.36, 95% confidence interval (CI) -2.22 to -0.51).
  - less likely to have caesarean section (RR 0.71, 95% CI 0.54 to 0.94)
  - less likely to have an epidural (RR 0.81, 95% CI 0.66 to 0.99)

(Lawrence et al 2013)
Accelerating labour – MidU study

- Augmentation of labour rate - significant difference
  - CLU 56.9%
  - MLU 39.6%
Because of this:

- Length of first stage
  
  - CLU - 3 hours 19 minutes (SD=2:17)
  
  - MLU - 3 hours and 55 minutes (SD=3:09) (CI = 0:34 to 1:09, p<0.0001)
But – did women mind the longer labour?

- “With people who cared about them during their labour and birth”

- Scale from 1 indicating “Almost always” to 7 indicating “Rarely”

- CLU – 2.51
- MLU – 2.10 (a significant mean difference of 0.40 in favour of the MLU)
Possibly because:

- 1 or 2 caregivers in labour
  - CLU 17%
  - MLU 27% (RR=1.58, CI=1.29-1.95, p<0.0001)
Conclusion – accelerating labour

- Augmentation:
  CLU 56.9%  
  MLU 39.6%

- Length 1st stage
  CLU - 3 hrs 19
  MLU - 3 hrs 55

- Women were as happy/happier
Midwife-supported birth

Avoid augmentation of labour

Use upright positions/walking/nipple stimulation instead
Jones et al 2013 (review of 18 reviews):

- Immersion in water, relaxation, acupuncture and massage all gave pain relief and better satisfaction with pain relief.

- Relaxation and acupuncture decreased the use of forceps and ventouse.

- Acupuncture decreased the number of caesarean sections.
Pain relief in the MidU study

- Nitrous oxide (73% in both)
- Pethidine (32% in both)

Significant differences in:

- Epidural – CLU 25%, MLU 19%
- TENS – CLU 12%, MLU 16%
- Hydrotherapy – CLU 3%, MLU 24%
Did women mind “missing out” on the epidural?

Pain relief:

• CLU - 68% were happy or very happy with their pain relief

• MLU - 82% were happy or very happy, a significant difference
Conclusion - pain relief

Epidural
CLU 25%  MLU 19%

TENS
CLU 12%  MLU 16%

Hydrotherapy
CLU 3%    MLU 24%

Happy or very happy with pain relief:
CLU 68%  MLU 82%
Midwife-supported birth

Install birthing pools (for pain relief, not necessarily water births)

Use baths, showers, hot cloths

Supply TENS machines

Encourage acupuncture
Fetal assessment

Electronic fetal monitoring (Cochrane review)

• 13 trials were included, 37,000 women;

• Compared with intermittent auscultation continuous CTG showed:
  
  ➢ no significant improvement in overall perinatal death rate (risk ratio (RR) 0.86, 95% confidence interval (CI) 0.59 to 1.23
  
  ➢ was associated with a halving of neonatal seizures (RR 0.50, 95% CI 0.31 to 0.80).

• (Alfirevic et al 2013)
Fetal assessment

Electronic fetal monitoring (Cochrane review)

- no significant difference in cerebral palsy rates (RR 1.75, 95% CI 0.84 to 3.63).

- a significant increase in caesarean sections associated with continuous CTG (RR 1.63, 95% CI 1.29 to 2.07)

- an increase in instrumental vaginal birth (RR 1.15, 95% CI 1.01 to 1.33).

- (Alfirevic et al 2013)
Fetal assessment in the MidU study

- Electronic fetal monitoring rate (in labour) - primary outcome measure

- CLU 59%  
  MLU 38%

- Significant difference (RR=0.64, CI=0.58-0.72, p<0.00001)
Secondary outcome measures - ultrasound scans

- 4, or more, USS in pregnancy
  - CLU 23%
  - MLU 10%
  - Significant difference (RR=0.43, CI=0.34-0.57, p<0.00001)
Secondary outcome measures - cardiotocography

- No CTGs in pregnancy
  - CLU 7%
  - MLU 34%
But – were the babies OK?

- Paediatric assessment required
  - CLU 27%  MLU 27%
- Admission to SCBU
  - CLU 11%  MLU 12%
- Neonatal resuscitation
  - Facial oxygen 12% in both
  - Bag and mask resuscitation 2% in both
- Perinatal mortality
  - MLU: 2.76  CLU: 3.66  per 1,000
Were women happy with method of monitoring their baby’s heart-beat in labour?

• CLU - 77% were happy or very happy

• MLU - 84% were happy or very happy

(RR=1.04, CI=0.92-1.18, not significant)
Conclusion – fetal assessment in MidU

- EFM in labour:
  - CLU 59%  MLU 38%
- 4, or more, USS
  - CLU 23%  MLU 10%
- No CTGs in pregnancy
  - CLU 7%  MLU 34%

Baby outcomes the same
Women just as happy
Midwife-supported birth

Avoid EFM in labour

- You will have fewer instrumental births and CS births

Tell women the truth
Birth

Significant differences:

• Spontaneous pushing:
  ➢ CLU 56%   MLU 66%

• Upright positions:
  ➢ CLU 10%   MLU 27%
No difference in:

• Spontaneous vaginal birth
  ➢ CLU 69%  MLU 69%

• Length of second stage
  ➢ 41 minutes in both
Conclusion – Birth in MidU

MLU: Less directed pushing and more upright positions...

...have the same effect as...

CLU: ...more directed pushing and flatter positions
Third stage of labour in MidU

• Physiological management

CLU 0.2%
MLU 12.4%

(RR 68.69, 95% CI 9.63, 489.80)
Was the third stage longer and was there more blood loss?

No, no difference:

- Length of third stage
  - CLU 12 minutes  MLU 13 minutes

- Blood loss:
  - CLU 326 mls  MLU 332 mls

- Postpartum haemorrhage rate
  - CLU 15%  MLU 14%
Was the third stage longer and was there more blood loss?

A larger, observational study since then -
Midwifery-led unit births in Ireland (1521)

- 738 women (48.52%) had Expectant MTSL
- 783 women (51.48%) received Active MTSL
No difference in:

**Average estimated blood loss:**
- 258 mls (SD 197 mls) in the ‘expectant’ group
- 241 mls (SD 177 mls) in the ‘active’ group

**Postpartum haemorrhage rates:**
- 2.71% (n=20) in the ‘expectant’ group
- 2.17% (n=17) in the ‘active’ group

(Begley et al 2016) … also see Dixon 2013.
Conclusion - Birth

Less active management of third stage – still same length and blood loss
Midwife-supported birth

Use expectant management of third stage for all low-risk women

(LEARN how to do it properly -

Begley et al 2012 (MEET study) OR Myles Textbook (2014)
• Two last thoughts:
Overall measure of care

• “I would recommend the care I received to my friends”
  Scored from 1 (low) to 5 (high)

• CLU mean score was 3.95

• MLU mean score was 4.53

• A significant difference
• Each birth in the CLU costs, on average, €182 more than in the MLU (Kenny et al 2015).
Conclusion (to the MidU study)

• This study supports the recommendation of the Cochrane review on midwife-led models of care (Sandall et al 2015) that midwife-led care should be offered to most women.

• So – more such units should be introduced in Ireland, to provide more choice for women.
Think about the future….

What will the women and midwives of 2036 be saying about us?

Have we got our heads in the sand, and are not recognising the silly, or time-wasting, or harmful things we are doing to women?
Why did they use active management of the third stage so often, when caring for normal, healthy women?

(No difference in blood loss or PPH rates, so long as midwives know what they are doing (Begley et al 2016, Dixon 2013))
Why did they not stop using routine practices such as amniotomy in spontaneous labour (even when prolonged)?

(Smyth et al 2013 – ARM not recommended routinely).
Why did they not listen to what women wanted?

Why did they not support women’s autonomy, and advocate for them?

Why were they not true midwives?
We need to...
In order to give the best possible care....
We need to...

...read and use the research that has been done, so that our practice will be evidence-based.
Evidence-based practice - the key to high quality midwife-supported care
References

- Alfirevic Z, Devane D, Gyte GML. Continuous cardiotocography (CTG) as a form of electronic fetal monitoring (EFM) for fetal assessment during labour. Cochrane Database of Systematic Reviews 2013, Issue 5. Art. No.: CD006066. DOI: 10.1002/14651858.CD006066.pub2
- Begley CM 2016, unpublished data


