Cochrane Review of Alternative versus Conventional Institutional Settings for Birth

E Hodnett, S Downe, D Walsh, 2012
Why Study Types of Clinical Birth Settings?

- Concerns about the technological focus on birth common in many hospitals prompted the design of different types of birth units.

- Studies of medical and surgical hospital wards: The environment can influence length of stay, development of complications, and patients' satisfaction with care.
Types of Alternative Hospital Settings

- “Home-like” (bedroom-like) room or rooms
  Within the hospital labor ward, or separate unit within the hospital

- Ambient room
  Nature scenes, music, freedom to move
  No labor bed! Large mat with pillows

- Snoezelen room
  Multiple sensory stimuli: fibre-optic lights, sounds, aromatherapy

*May have the same staff or separate staff
Cochrane Review Objectives

- **Primary:** To evaluate effects of care in an alternative birth setting compared to care in a conventional labor room

- **Secondary:** to determine if effects vary based on
  - Whether staffed by same or separate staff
  - Whether continuity of caregiver was also part of alternative setting
  - Location: within the L&D ward, separate unit within the hospital, or freestanding unit
  - Type: Bedroom-like or Ambient or Snoezelen
Types of Studies

- Only randomized controlled trials
- Intervention = care in an alternative institutional birth setting
- Participants: healthy childbearing women

*Design based on philosophy that childbirth is a fundamentally normal process*
Methods

- All analyses by intent-to-treat
- Pre-specified outcome measures
- Search strategy of the world literature, regardless of language or whether published
- Independent assessments of eligibility
- Assessment of risk of bias
- Sensitivity analyses
- Pre-specified subgroup analyses
The Studies

10 RCTs, n=11,795

- 1 Pilot RCT (n=60) of ambient room
- 0 RCTs of Snoezelen room
- 0 RCTs of freestanding birth centers
- 8 RCTs of bedroom-like settings
  - 5 provided some antenatal care as well as intrapartum care
  - 3 had separate staff in alternative setting, and all 3 had *continuity of caregiver*

*No relevant data from 1 small trial*
The Studies (cont’d)

- Common philosophy: labor and birth as fundamentally normal experiences
- All restricted use of technology during labor and birth
- In general, physicians were not involved in labor and birth in the alternative settings, unless needed
- High transfer rates either before or during labor (29% - 67%)
Main Results

Women randomized to alternative birth settings were *more likely* to have:

- No analgesia/anesthesia (6 trials, n=8953, RR 1.18 95% CI 1.05-1.33)
- Spontaneous vaginal birth (8 trials, n=11,202; RR 1.03, 95% CI 1.01-1.05)
- Preference for the same setting next time (2 trials, n=1207, RR 1.96, 95% CI 1.78, 2.15)
Main Results (cont’d)

Women randomized to alternative birth settings were *less likely* to have:

- **Intrapartum oxytocin** (8 trials, n=11,131; RR 0.77, 95% CI 0.67-0.88)
- **Epidural analgesia** (8 trials, n=10,931; RR 0.80, 95% CI 0.74-0.87)
- **Cesarean birth** (9 trials, n=11,350; RR 0.88, 95% CI 0.78-1.00)
- **Assisted vaginal birth** (8 trials, n=11,202; RR 0.89, 95% CI 0.79-0.99)
- **Episiotomy** (8 trials, n=11,055; RR 0.83, 95% CI 0.77-0.90)
Main Results (cont’d)

No significant differences were found in:

- Postpartum hemorrhage (6 trials, n=10,712; RR 0.94, 95% CI 0.82-1.08)
- Serious maternal morbidity/mortality (4 trials, n=6334; RR 1.11, 95% CI 0.23-5.36)
- Serious perinatal morbidity/mortality (5 trials, n=6385; RR 1.17, 95% CI 0.51-2.67)
- 5-minute Apgar <7 (7 trials, n=7665; RR 0.98, 95% CI 0.70-1.38)
- Admission to NICU (7 trials, n=10,798, RR 1.09, 95% CI 0.94-1.26)
- Perinatal death (8 trials, n=11,206; RR 1.67, 95% CI 0.93-3.00)
Subgroup Analyses

Same vs separate staff*: 

- Did not appear to affect spontaneous vaginal birth, or serious maternal or perinatal morbidity/mortality

* Only one subgroup analysis was possible. And of the 5 RCTs which involved separate staff, 4 also had continuity of caregiver in the alternate birth setting
Conclusions

- Results are consistent with other studies of the independent effects of hospital architecture on health outcomes.

- However, the benefits of an alternative setting may be overpowered by institutional norms and policies.
Implications for Practice

- Pregnant women should be informed that alternative hospital birth settings are associated with lower rates of medical interventions during labor and birth and higher levels of satisfaction, without increasing risk to themselves or their babies.
Policy Implications

- Decision-makers who wish to decrease rates of medical interventions for women experiencing normal pregnancies should consider developing birthing units with policies and practices to support normal labor and birth.

- But they have little to go on when making decisions about staffing models, organization of care, autonomy of the setting, or its architectural features.
Recommendations for Future Research

- Measure and report serious perinatal morbidity as well as mortality
- Clear protocols for consultation and transfer of care
- Address potential confounding effects of continuity of caregiver
- Evidence-based approaches to encourage high response rates to postal questionnaires
- Include cost-effectiveness analyses
Future Studies

- RCTs of freestanding birth centers
- RCTs of alternative birth settings which promote freedom of movement, feelings of calmness and a sense of control
- Studies to determine optimal organizational models of birth center care
Future Studies (cont’d)

- Qualitative studies of impact of transfer on women, care providers, and decision-making processes regarding need for intervention

- Qualitative studies of impact of competing philosophical, political, and administrative pressures on the operation of alternative settings
A Shift in Focus...

- Cesarean rates for otherwise healthy childbearing women continue to increase, despite widespread efforts to encourage providers to adopt evidence-based practices.

- A shift in focus, from efforts to change providers’ and women’s behavior, to altering the clinical environment for labor and birth, is promising, timely and worthy of rigorous evaluation.
This photo and the following one are from: Fannin M. Domesticating birth in the hospital: “Family centered” birth and the emergence of “homelike” birthing rooms. Antipode 2003;35(3):513–35.