



Knowing what we know

Process, impact and outcomes: the case
of early postnatal discharge

Background

- Steady decline in length of postnatal hospital stay in Western countries since the 1970s
 - Controversy about safety, possible adverse outcomes
 - Limited research about the effectiveness of different approaches to providing early postnatal care
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Early postnatal discharge: a complex intervention (1)

- Care is required for mother & baby
 - Settings for care include hospital, home & community
 - Needs vary according to method of birth, pregnancy & birth complications, family and social circumstances, like/dislike of hospitals
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Early postnatal discharge: a complex intervention (2)

- Co-interventions:
 - antenatal preparation
 - midwife home visits
 - telephone support post discharge
 - day-stay programs e.g. breastfeeding support
 - Multiple health professional groups involved:
 - hospital midwives and doctors
 - community-based midwives & maternal and child health nurses
 - general practitioners
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Early postnatal discharge: a complex intervention (3)

- Definition of 'early discharge' and 'standard care'
 - Contested terrain: "home is best" OR "early discharge = reduction in care"
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Defining the intervention

- A policy of early postnatal discharge from hospital for healthy mothers and infants born at term where 'early discharge' refers to discharge that is earlier than standard care in the setting in which the intervention is implemented
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Research questions

- Is a policy of early postnatal discharge safe for healthy mothers and term infants?
 - Does a policy of early postnatal discharge have beneficial or harmful effects for mothers and babies, or families?
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Outcomes

- Infant and maternal readmissions
 - Contacts with health services
 - Maternal health problems
 - Maternal anxiety
 - Fathers' involvement with baby
 - Paternal anxiety
 - Breastfeeding duration/problems
 - Conflicting advice about breastfeeding
 - Women's views of postnatal care in hospital and post discharge
 - Costs of pregnancy and postnatal care
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Description of studies

- 10 published trials identified
 - 4489 women
 - US, Canada, UK, Sweden, Spain, Switzerland
 - Largest conducted in 1959 (2257 women)
 - 8 small trials 1976-2000 (122-459 women)
 - 6 trials randomised women in pregnancy, and 4 randomised women after the birth
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Inclusion and exclusion factors

Inclusion criteria:

- Low medical risk (9 trials)
- Unplanned CS (1 trial)
- Primips only (2 trials)

Post-randomisation exclusions:

- Obstetric complications, e.g. CS, LBW, maternal & infant morbidity (24-44%, 5 trials)
 - Non-attendance at prenatal classes (1 trial)
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Methodological quality

- Only half report sample size calculations, none considered impact of post-randomisation exclusions subsequent withdrawals, loss to follow-up
 - Several studies had limited power to detect differences
 - Only half the trials report appropriate steps for allocation concealment
 - Low participation rate in several (10-27%) or not reported
 - Blinded outcome assessment: not clear for any of the trials
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Protocol violations and withdrawals

- Non-compliance with randomisation (cross-over)
 - In one trial 74% of women randomised to early discharge crossed over to length of stay consistent with standard care
 - In another, 48% of women in control group were sent home early (bed shortages)
 - Withdrawals
 - 5-8% in 3 trials reporting data
 - Differential between intervention and control groups
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Process evaluation: *what actually happened?*

- Uptake of co-interventions (antenatal preparation, midwife home visits, telephone support)
 - Access to other primary care and specialist support in countries where trials took place
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Does a policy of early discharge increase formula feeding at 4-8 weeks postpartum?

Formula feeding (ie not breastfeeding)
at follow-up, 4-8 wks pp
(8 trials, 3845 women)

■ Pooled Relative Risk 0.90 (0.76-1.06)

Does a policy of early discharge increase maternal depression after the birth?

Maternal depression at 4-8 wks

- 2 trials used validated instruments

- Pooled Relative Risk 0.59 (0.21-1.51)

So what do we know from the trials?

- No adverse effects of early discharge on breastfeeding or maternal depression
- No evidence of adverse effects for other outcomes
- **BUT** methodological limitations of included studies mean that adverse outcomes cannot be ruled out
 - Trial quality improving, but still not high
 - Selection bias
 - Limited data on several key outcomes
 - Outcome measurement variable, reducing capacity for pooling results
 - Role of co-interventions remains unclear
- Large well-designed trials still needed

Other ways of knowing

- Case reports
 - Case-control studies
 - Routinely collected data
 - Population-based surveys
 - Policy and practice reviews
 - Descriptive studies (mixed methods)
 - Economic evaluation
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Case reports: *raising the alarm*

- Identifying rare adverse events:
 - e.g. Severe hyperbilirubinemia
Pediatrics, 1995

Case-control studies: *investigating rare outcomes*

■ Neonatal re-admissions

- Several studies showing increase in re-admissions with early discharge

(Liu L et al, JAMA, 1997; Maisels M et al. Pediatrics, 1998)

■ Neonatal mortality

- One study showing no association with early discharge (Beebe et al. Pediatrics, 1996)
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Routinely collected data: *capacity to link data*

- US study using linked hospital discharge data, birth certificates and death certificates for >47,000 live births indicated newborns discharged <30 hours after birth at increased risk of death in first year of life, OR=1.84 (1.31-2.60) (Makin et al, *Obstetrics & Gynecology*, 2000)
 - Cited in *SOGC policy statement* on postpartum discharge, April 2007
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Population-based surveys: *self-reported health outcomes*

- Infant health outcomes e.g. breastfeeding
- Maternal health outcomes e.g. depression
- Use of health services, e.g. midwife home visits, telephone support
- Women's views & experiences of care

Small R et al, 1992; Brown et al, Paediatric Perinatal Epidemiol, 1997, 2002; Heck K et al, Birth, 2003; Galbraith A et al, Pediatrics, 2003; Waldenstrom U et al, Acta Paediatr, 2004; Lansky A et al, MCH Journal, 2006; Redshaw M et al, 2007).

Economic evaluation: *dispelling myths?*

- Several studies questioning likelihood of lower resource use taking into account impact of early discharge on:
 - hospital stay (increase in staff workload)
 - maternal and infant readmissions
 - midwife home visits
 - use of community care
 - costs shifted to families
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Policy and practice reviews

PiNC Review (2006)

- Stakeholder views & experiences
 - busyness of postnatal units
 - inadequacy of staff-patient ratios
 - staff shortages in rural areas
 - priority given to antenatal & intrapartum care
 - lack of opportunity for women to rest
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Evidence-based practice in a complex policy environment

- Cochrane Review concludes large well designed RCTs evaluating early postpartum discharge still needed
 - BUT 3 NHMRC proposals for RCTs evaluating early postnatal care interventions have failed to secure funding
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