Universal Hospitalization of Birthing Women: Do the Arguments Stand Up to Scrutiny?

Amy M. Romano, MSN, CNM

CIMS 2009 Mother-Friendly Childbirth Forum and Annual Meeting

San Diego, CA – March 6, 2009

Objectives

- Critically evaluate the **evidence basis for ensuring access** to planned home and birth center birth for low-risk women.
- Explore the assumption that hospitalization improves outcomes in cases of **serious unexpected complications**.
- Describe the **unintended consequences** of perinatal regionalization
- Describe the outcomes of **integrated maternity care systems** where primary maternity care is delivered to healthy, screened women at the community level
- Describe the advantages of **population-based research** for evaluating the safety and efficacy of integrated maternity care systems.

Acknowledgments

- Thanks to Mayri Sagady Leslie who helped prepare version 1.0 of this talk!

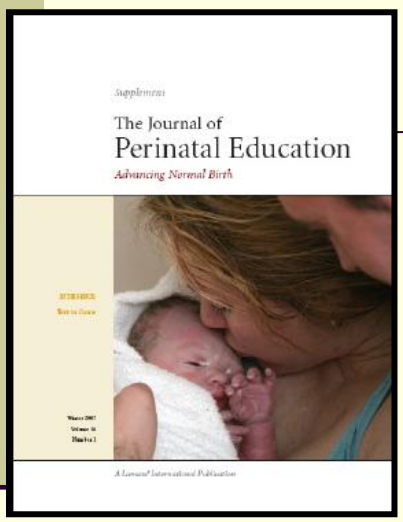
"Unless a woman is in a hospital, an accredited freestanding birthing center, or a birthing center within a hospital complex, with physicians ready to intervene quickly if necessary, she puts herself and her baby's health and life at unnecessary risk."

- ACOG News Release, 2/6/2008

Planned Home and Birth Center Birth: A Critical Review of the Evidence

- The Coalition for Improving Maternity Services (CIMS)
- Mother-Friendly Childbirth Initiative (MFCI) 1997
- 2005-2006 Expert Work Group investigates the evidence basis for the ten steps of Mother-Friendly Care

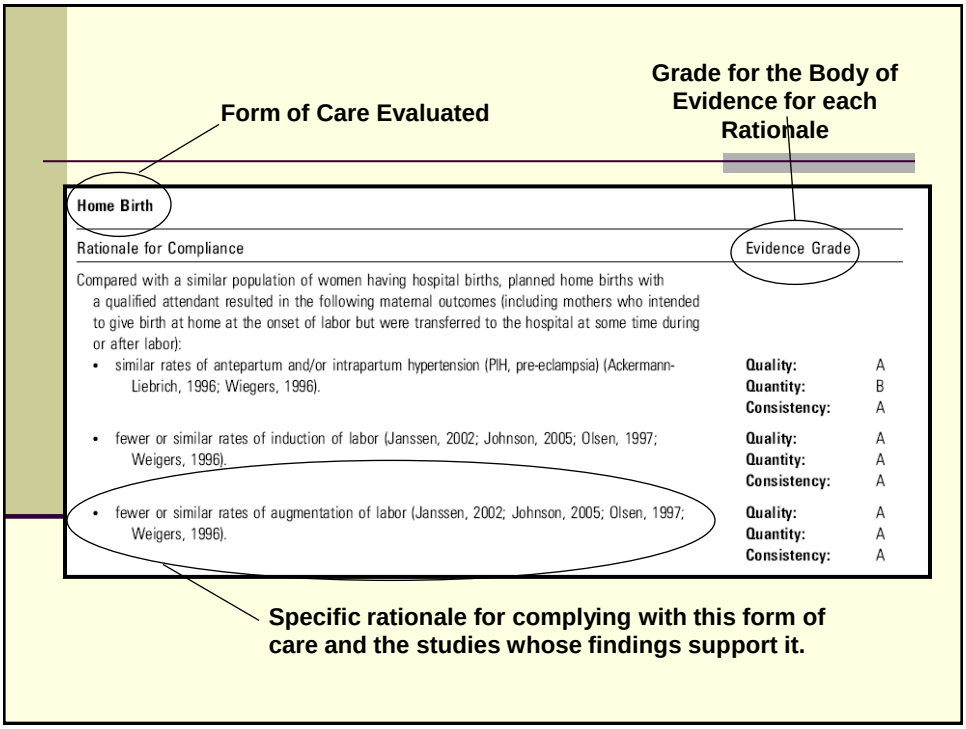
Free as PDF from CIMS at motherfriendly.org and from Lamaze International at Lamaze.org



CIMS Evidence Basis for the Ten Steps of Mother-Friendly Care

Henci Goer, BA, Mayri Sagady Leslie, MSN, CNM, Judith Lothian, PhD, RN, Amy Romano, MSN, CNM, Karen Salt, CCE, MA, Katherine Shealy, MPH, IBCLC, RLC, Sharon Storton, MA, CCHT, LMFT, Deborah Woolley, PhD, CNM

Coalition for Improving Maternity Services
Journal of Perinatal Education 16 2(S) 2007
Supported by a grant from The New Hampshire Charitable Trust



"Birth Can Safely Take Place At Home and in Birthing Centers"

- The "Eleventh Step"
- Studies in English, 1/1990 – 9/2005
- Updated literature review for this presentation found no new qualifying studies
- Inclusion criteria required statistically sound comparisons with similar populations in hospitals
- Not provider specific
- (See step one for findings on midwifery care which did compare provider to provider)

The Evidence Basis for Birth Center Care

Birth centers were defined as freestanding facilities that provide intrapartum and immediate postpartum care to low-risk women and their newborns.

Planned Home and Birth Center Birth: A Critical Review of the Evidence

- Birth center care results in an intrapartum/neonatal mortality rate equivalent to rates reported in hospital-based studies of low-risk cohorts (1.3 per 1,000 births overall; 0.7 per 1,000 births excluding congenital anomalies)

Planned Home and Birth Center Birth: A Critical Review of the Evidence

Perinatal/neonatal outcomes

- ↓ infants requiring evaluation and treatment for infection
- similar rates of preterm births, low birthweight infants, incidence of thick meconium, NICU admissions, and readmissions

Planned Home and Birth Center Birth: A Critical Review of the Evidence

Maternal outcomes

- ↑ increased number of spontaneous vaginal births
- ↓ vaginal instrumental deliveries
- ↓ cesareans
- ↓ episiotomies
- similar incidence of maternal infection or need for antibiotics after birth

Planned Home and Birth Center Birth: A Critical Review of the Evidence

- ↑ effective pain management in labor, including:
  - ↓ frequent use of analgesia and/or epidural anesthesia in labor
  - ↑ use of non-pharmacological pain relief measures in labor (hydrotherapy, comfort measures, etc.)

Planned Home and Birth Center Birth: A Critical Review of the Evidence

Resource Utilization

- ≅ antepartum hospital admissions
- ↓ inductions of labor
- ↓ augmentation of labor
- ↓ intravenous fluids
- ↓ amniotomy
- ↓ continuous electronic fetal monitoring

The Evidence Basis for Homebirth

Homebirth was defined using the following characteristics:
•woman is at low risk for complications,
•birth is planned to take place at home, and
•care provider is qualified to provide care in the home setting

Planned Home Birth & Birth Center Birth: A Critical Review of the Evidence

Perinatal/Neonatal Outcomes

- ≅ low-birth-weight
- ≅ NICU admissions
- ↓ or ≅ birth trauma
- ≅ perinatal mortality for infants born to low-risk mothers

Planned Home Birth & Birth Center Birth: A Critical Review of the Evidence

Maternal Outcomes

- ↑ more intact perineums
- ↓episiotomies
- ↓ or ≅ rates of anal sphincter laceration
- ↓ need for maternal blood transfusion
- ↓ or ≅ incidence of maternal infection or need for antibiotics after birth

Planned Home Birth & Birth Center Birth: A Critical Review of the Evidence

Maternal Outcomes

- ↓ vaginal instrumental deliveries
- ↓ cesareans in women with prior cesareans (more vaginal births after cesarean)
- ↓ cesareans for labor progress disorders
- ↓ or equivalent cesareans for emergencies in labor, such as fetal distress

Planned Home Birth & Birth Center Birth: A Critical Review of the Evidence

Resource Utilization

- ↓ or ≅ induction of labor
- ↓ or ≅ augmentation of labor
- ↓ intravenous fluids in labor
- ↓ amniotomy in labor
- ↓ continuous electronic fetal monitoring
- ↓ need for analgesia in labor
- ↓ need for epidural and/or spinal anesthesia

Why the Evidence Doesn't Matter (to ACOG and AMA)

- The "Just in Case" Argument
- The Limitations of the Evidence Argument
- The Efficiency Argument

Universal Hospitalization: The "Just in Case" Argument

"Childbirth decisions should not be dictated or influenced by what's fashionable, trendy, or the latest cause célèbre. Despite the rosy picture painted by home birth advocates, *a seemingly normal labor and delivery can quickly become life-threatening* for both the mother and baby."

- ACOG News Release, 2/6/2008

Testing The "Just In Case" Argument

- Outcomes of urgent complications in OOH settings
- The 30-minute rule
  - compliance
  - efficacy

The "Just in Case" Argument: Outcomes of Urgent Complications in OOH Settings

- Problems in the literature
  - Urgency is subjective[1, 2]
  - Urgent transfers often managed expectantly after arrival[1-3]
  - No hospital group with which to compare

1. David M, Berg G, Werth I, et al. Intrapartum transfer from a birth centre to a hospital - reasons, procedures, and consequences. Acta Obstet Gynecol Scand 2006;85(4):422-8.
2. Rooks JP, Weatherby NL, Ernst EK. The National Birth Center Study. Part III--intrapartum and immediate postpartum and neonatal complications and transfers, postpartum and neonatal care, outcomes, and client satisfaction. J Nurse Midwifery 1992;37(6):361-97.
3. Leeman L & Leeman R. (2002). Do all hospitals need cesarean delivery capability? An outcomes study of maternity care in a rural hospital without on-site cesarean capability. *Journal of Family Practice, (51)*, 129-34.

The "Just in Case" Argument: Outcomes of Urgent Complications in OOH Settings

- Approaches to overcome obstacles
  - Time in transit[1]
  - Comparing remote versus centrally located BCs[2,3]
  - Case review[2]

1. David M, Berg G, Werth I, et al. Intrapartum transfer from a birth centre to a hospital - reasons, procedures, and consequences. Acta Obstet Gynecol Scand 2006;85(4):422-8.
2. Leeman L & Leeman R. (2002). Do all hospitals need cesarean delivery capability? An outcomes study of maternity care in a rural hospital without on-site cesarean capability. *Journal of Family Practice, (51)*, 129-34.
3. Schmidt N, Abelsen B, Oian P. Deliveries in maternity homes in Norway: Results from a 2-year prospective study. Acta Obstet Gynecol Scand 2002;81(8):731-7.

The "Just in Case" Argument: The 30 Minute Rule

- Plenty of research on this one!
- Compliance is poor[1,3,6]
  - Only study with 100% compliance had women laboring in ORs and 24/7 in-house staff[2]
- Efficacy is unproven
  - No association with poor outcomes even after long delays[1-5]
  - Some evidence of worse outcomes with shorter D-I intervals[3]
  - Some babies die no matter how short the D-I interval[1,2,6]

The "Just in Case" Argument: The 30 Minute Rule

References

1. Bloom, S. L., Leveno, K. J., Spong, C. Y., Gilbert, S., Hauth, J. C., Landon, M. B., et al. (2006). Decision-to-incision times and maternal and infant outcomes. *Obstetrics and Gynecology, 108*(1), 6-11.
2. Hillemanns, P., Strauss, A., Hasbargen, U., Schulze, A., Genzel-Boroviczeny, O., Weninger, E., et al. (2005). Crash emergency cesarean section: Decision-to-delivery interval under 30 min and its effect on apgar and umbilical artery pH. *Archives of Gynecology and Obstetrics, 273*(3), 161-165.
3. MacKenzie, I. Z., & Cooke, I. (2001). Prospective 12 month study of 30 minute decision to delivery intervals for "emergency" caesarean section. *BMJ (Clinical Research Ed.), 322*(7298), 1334-1335.
4. Nasrallah, F. K., Harirah, H. M., Vadhera, R., Jain, V., Franklin, L. T., & Hankins, G. D. (2004). The 30-minute decision-to-incision interval for emergency cesarean delivery: Fact or fiction? *American Journal of Perinatology, 21*(2), 63-68.
5. Thomas, J., Paranjothy, S., & James, D. (2004). National cross sectional survey to determine whether the decision to delivery interval is critical in emergency caesarean section. *BMJ (Clinical Research Ed.), 328*(7441), 665.
6. Tuffnell, D. J., Wilkinson, K., & Beresford, N. (2001). Interval between decision and delivery by caesarean section-are current standards achievable? observational case series. *BMJ (Clinical Research Ed.), 322*(7298), 1330-1333.

Universal Hospitalization: The Limitations of the Evidence Argument

"It should be emphasized that studies comparing the safety and outcome of births in hospitals with those occurring in other settings in the US are limited and have not been scientifically rigorous."

- ACOG News Release, 2/6/2008

- "The development of well-designed research studies of sufficient size, prepared in consultation with obstetric departments and approved by institutional review boards, might clarify the comparative safety of births in different settings. Until the results of such studies are convincing, ACOG strongly opposes out-of-hospital births."
  - ACOG (2006) *Out-of-hospital Births In The United States*

RCTs of Birth Settings are Not Feasible

- Recruitment obstacles
- Power dynamics
  - Obstetric departments
  - Institutional Review Boards
- Funding

RCTs Are Insufficient Anyway

- Assumption: Statistical independence
  - Presence, location, or characteristics of one facility/service may affect care/outcomes in the others
- Assumption: Randomization removes bias
  - Possible to subvert by providing bad care to transferred women/babies
  - Randomization itself affects the experience
- Assumption: Homogeneity
  - Location, characteristics of provider, level of system integration vary
- Assumption: RCT (or SR of RCTs) is "gold standard"
  - Some important questions not answerable with RCTs

Achieving "scientific rigor" in studying the effects of birth settings

- Utilize all relevant and valuable study designs
  - Achieve scientific rigor within these study designs
- Study population effects
  - The health of the population matters
  - Settings affect care in other settings
  - We need better data sets
- Continue to study community-based settings
  - Define best practices
  - Enhance decision-making when risk factors present

Our Obligation to Women, Infants, and Society

If we reject "universal hospitalization", we *must* use research to answer these questions:

- Which women *should* be hospitalized?
- How can we make hospitalization and high-technology care safe, effective, and satisfying for these women?
- How do we guard the safety and wellbeing of women *planning* or *vulnerable* to giving birth remote from surgical and anesthesia facilities?
- How do we organize our maternity care system to optimize health and wellbeing?

Universal Hospitalization: The Efficiency Argument

- The early years: efficiency through specialization
- Hospitals get connected: standardization
- Hospitals get big: teaching hospitals tap new markets
- The era of perinatal regionalization: active management of supply and demand

For a much deeper explanation, read Perkins, B. (2004) The Medical Delivery Business.

Universal Hospitalization: The Efficiency Argument

•Walsh (2006): "Fordism" and "Taylorism"
•The obstetrical "processing mentality"

- Focus on product outcomes
- Values predictability, standardization and efficiency
- Role differentiation explicit; all tasks procedure driven
- Hierarchical authority respected; role compliance essential

Universal Hospitalization: The Efficiency Argument

•Anything which holds up the assembly line will not be tolerated. Hence inductions, augmentation, cesareans, impatience with breastfeeding, postpartum issues, etc.

Ultimate power is to gain control over the input to the factory via elective procedures

Universal Hospitalization: The Efficiency Argument

- Hospitals specialize in hierarchies and "doing"
- By contrast, birth centers and homebirth are characterized by care organized around "being with women" vs. "doing to women" (Walsh, 2006)

Contrary to assumptions that hospitals are more cost efficient, Jackson et al (2004) found that birth center care within a collaborative care model substantially improve resource utilization *and* outcomes

Integrating Care to Optimize Outcomes

- Women should give birth at "the most peripheral level where birth is feasible and safe and where the woman feels safe and confident."[1]

1. World Health Organization Department of Reproductive Health and Research. (1999). Care in normal birth: a practical guide. Geneva: World Health Organization.

Integrating Care to Optimize Outcomes

- What do integrated maternity care systems look like?
  - Midwives as primary maternity care providers in the community
  - Access to "consultation, collaborative management, or referral, as indicated by the health status of the client"[2]
  - Transport available and accessible
  - Care at receiving facilities safe and effective

2. American College of Nurse-Midwives. (1997) Position Statement: Collaborative management in midwifery practice for medical, gynecological and obstetrical conditions. Washington, DC: ACNM.

Evidence from Integrated Maternity Care Systems

- Infant mortality rates, maternal mortality rates
- Leeman & Leeman (2002)
  - *Population-based* rates of perinatal death, cesarean surgery, instrumental vaginal delivery
  - Case review of prespecified obstetric emergencies occurring at the rural primary maternity care facility

Leeman L & Leeman R. (2002). Do all hospitals need cesarean delivery capability? An outcomes study of maternity care in a rural hospital without on-site cesarean capability. *Journal of Family Practice, (51)*, 129-34.

Evidence from Integrated Maternity Care Systems

- ↑ hypertension, diabetes compared with national statistics

But…

- ↓ total cesareans
- ↓ primary cesareans
- ↓ instrumental vaginal deliveries
- And similar perinatal death rate (11.4/1000 vs 12.8/1000)

*Remember, these are *population-level* statistics!

Skilled Birth Attendants & Prepared Birth Settings in the Community: A Safety Net

- Roadside births
- Disaster preparedness

Conclusions

- The strongest evidence against universal hospitalization comes from integrated maternity care systems that are based on primary care models.
- The burden of proof should be on those who want to restrict an individual woman's access to planned home or birth center birth.
- We need to keep doing research!

Amy Romano

midwifeamy@gmail.com

Free PDF of Evidence Basis for The Ten Steps of Mother-Friendly Care and other Publications

motherfriendly.org