

## THE NETHERLANDS HOME BIRTH STUDY August 2009

A Summary of the Study Published in the *British Journal of Obstetrics and Gynecology* Aug 2009, summarized by Wendy Gordon, LM, CPM

In August of 2009, a study was published in the *British Journal of Obstetrics and Gynecology* regarding the outcomes of over a half million births in the Netherlands [de Jonge A, et al. Perinatal mortality and morbidity in a nationwide cohort of 529,688 low-risk planned home and hospital births. *BJOG* 2009; DOI: 10.1111/j.1471-0528.2009.02175.x]. The Dutch maternity care system has been criticized for having one of the highest perinatal mortality rates in Europe (the perinatal period includes babies in the last few months of pregnancy and the first few weeks after the birth) at 10 deaths per 1000 births. As a comparison, the perinatal mortality rates in the U.S. are in the 6-7/1000 range, depending upon the definition of “perinatal” that is used.

The aim of this study was to determine whether the location of birth (home versus hospital) is a factor in the high death rates. This is the largest study of the safety of home birth that has ever been done, and the authors rightfully argue that the Netherlands is the only Western country that a study of this size could be done, as about 30% of Dutch women give birth at home. They analyzed the births of all low-risk women who delivered between Jan 1, 2000 and Dec 31, 2006. The bottom line was that the planned place of birth made no difference in the rates of babies dying or getting severely sick.

This is exciting and validating news for those of us who are advocates of home birth and midwifery care. The medical community in the U.S. continues to assert that home birth is unsafe, despite the mountains of evidence to the contrary, and this massive study from the Netherlands is almost another entire mountain unto itself. I think the medical community is barking up the wrong tree; it's not the location of the birth that is the problem in this country, it's the fact that midwives are not integrated into the maternity care system. This causes problems with safe and timely transport.

What does the maternity care system look like in the Netherlands?

Midwives are the primary care providers for all low-risk pregnant women and are fully integrated into the Dutch maternity care system. Midwives are independent, autonomous care providers and can attend births at home or in the hospital. Low-risk women are placed into “primary care” with midwives, and women who are at increased risk for complications are placed into “secondary care” with obstetricians; in other words, midwives are the routine provider for most pregnant women, and OBs are the specialists.

A woman might start out in primary care at the beginning of her pregnancy, and if risk factors arise during pregnancy, in labor, or during the postpartum period, she would be transferred into secondary care with an obstetrician. If the problem is resolved in secondary care, the woman goes back to primary care with a midwife. At the onset of labor, if a woman is in primary care, she can choose to give birth at home or in the hospital with her midwife. Most women have decided where they want to give birth before labor starts.

When a woman laboring at home has to be transported to the hospital, this can be accomplished quite quickly. The entire country is slightly less than twice the size of New Jersey and fairly densely populated. An ambulance can generally be present within 10 minutes. I'm not sure what percent of transports take place by ambulance versus private cars, but if my friend Dzhan's experience there is any indication, most people travel by bicycle; I would imagine that many transports occur via ambulance, even when it is not an emergency.

Once they arrive at the hospital, the midwife may continue to care for the woman if all she needs is pain relief or augmentation of labor, or she may be cared for by an obstetrician if the situation warrants secondary care.

How was "low-risk" defined in the study?

Indications for referral from primary to secondary care have been agreed upon by the professional groups and are laid out in the Obstetric Indication List. The list can be found here . For the most part, these indications are congruent with what we typically see here in the U.S., with a few significant notables:

- \* No VBACs at home
- \* No multiples at home
- \* No planned home breech deliveries
- \* Hospital transport from home must occur after 4 hours of no progress in active first stage, and one hour of no progress in second stage

How good is their data?

It's remarkably good, in fact. The Dutch have three separate databases for maternity care: one for primary (midwifery) care, one for secondary (OB) care and one for pediatric care. From the study: "About 99% of primary care data and 100% of secondary obstetric care data are entered into these registers. All neonatal care data from academic hospitals and about 50% of other paediatric data are entered in the paediatric register." So although this study is retrospective, the data they are using is very complete. In comparison, the U.S. has only birth and death certificate data with which to conduct a similar type of study, and every state does it a little differently. For example, in Oregon, the latest version of the birth certificate which was launched in Jan 2008, has just begun to ask whether a birth at home was planned to occur there. Many other states have no way of differentiating between a planned vs unplanned home birth, which makes any study using this data rather suspect.

How were women selected for the study?

In previous studies, it has been difficult to define a low-risk hospital group with which to compare the homebirth group. In the U.S. women are not classified based on their risk status, but rather the location of their births; low-risk women are cared for by both midwives and obstetricians, which confounds the analysis. In addition, it has been difficult to fabricate a low-risk hospital group out of the National Vital Statistics data that matches the demographics of homebirth group closely enough to compare outcomes.

Also, there is disagreement regarding what “low-risk” means between types of providers and even amongst midwives.

The Dutch study eliminates all of these confounders. All women who were in midwifery-led care at the onset of labor were included in the study, whether they were planning a hospital birth or home birth. By definition, these women had low-risk pregnancies (as defined explicitly above) without significant complications. Exclusions included the following (which comprised 58% of all births 2000-2006):

- \* Any woman who was being cared for by an obstetrician at the onset of labor, even if she was considered to be “low-risk”
- \* Women who were in primary (midwife) care but were at medium risk and could not have a home birth
- \* Prolonged rupture of membranes (>24 hours) without contractions
- \* Intrauterine death prior to the onset of labor
- \* A child with a congenital anomaly

A woman planning a home birth might have ended up giving birth in the hospital if risk factors developed during labor, but she would have remained in the study in the “planned home birth” group. Of low-risk women in midwifery care, about 60% planned home births. (Wow!)

What outcomes did they look at?

There were four outcomes studied:

- \* Intrapartum (during labor) death of the baby
- \* Intrapartum and neonatal death up to 24 hours after the birth
- \* Intrapartum and neonatal death up to 7 days after the birth
- \* Admission to a neonatal intensive care unit (NICU) after birth (babies who are admitted to a NICU in the Netherlands are very sick and are not just being observed, so this is a good indicator of severe morbidity)

Interestingly, they did not look at maternal morbidity or mortality. With a cohort this large, they should have been able to determine significant differences between home and hospital in most every maternal outcome.

What does the data say?

Of low-risk women cared for by Dutch midwives, the location of birth did not make any difference in outcomes for babies. There was nothing inherent about giving birth in the home versus the hospital that made it more risky. There were some characteristics of the women or their pregnancies that did seem to have an impact on the outcomes. Those having worse outcomes were the following:

- \* Primiparous (having their first baby)
- \* Gave birth at 37 weeks or 41 weeks

- \* Were 35 years or older
- \* Were of “non-Dutch” ethnicity

There is some other reason for the high perinatal mortality rates in the Netherlands; it is most certainly not due to the fact that they have a high rate of home births, as this study definitively puts to rest.

Can we generalize these results to home birth and midwifery care in the U.S.?

Probably not. There are some big differences between maternity care in the Netherlands and in the U.S., most notably the fact that Dutch midwives are the primary care providers for all low-risk women in and out of the hospital, and their obstetricians are specialists who work only with high-risk women. Midwives are respected and well-integrated into the Dutch health care system, moving seamlessly between home and hospital.

In contrast, there are still some states in the U.S. in which midwives are actually prosecuted as felons for attending births at home. American homebirth midwives are most often marginalized, unsupported, and actively opposed by the medical establishment (see the ACOG statement against homebirth and anyone who supports it, as well as the AMA resolutions to legislatively ban the option of homebirth and block the licensure of direct-entry midwives). This hostile opposition makes it professionally challenging for midwives to transport clients to the hospital, even in states where they are legal and licensed providers, and it is not unheard of for clients to receive the brunt of the dysfunctional relationship as well.

The Dutch study had a transport rate of about 30%; in contrast, North American CPMs in 2000 had a 12% transport rate [Johnson & Daviss, BMJ, 2005]. The hostility toward homebirth midwives is probably one big reason for this difference, and other facets may include more conservative indications for transport in the Netherlands, ease and readiness of the Dutch EMS transport system, and/or possibly different training of midwives.

However, another question to consider is whether a 30% transport rate is appropriate, as even in the Netherlands, birth in the hospital comes with more interventions, which do not necessarily always translate to better outcomes. It's hard to guess what the transport rate and associated outcomes might be like in the U.S. if midwives were better integrated into the maternity care system; actually, it's pretty remarkable that our transports occur as often as they do and the outcomes are as excellent as they are despite not being accepted as legitimate providers in the American medical system.

All in all, this new study contributes excellent data to the body of literature that continues to affirm that birth at home with qualified midwives is no more risky than birth in the hospital for low-risk women. There are a couple more homebirth studies that are coming down the pike in both the UK and Canada, looking forward to seeing their results as well. Hopefully we will have another U.S. study soon!