

# The LEMMoN study: A nationwide enquiry into the role of ethnicity in severe maternal morbidity in The Netherlands.

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## Summary

Maternal mortality and severe maternal morbidity are increasing over the last decade in the Netherlands. The increment seems to be higher in immigrant women than in autochthonous women. Immigrant women are disproportionately represented in Dutch maternal mortality and morbidity statistics. To prevent ethnical disparity in maternal health care, it is important to get more insight into the determinants of severe maternal morbidity in the different ethnical groups in the Netherlands.

For this purpose, a nationwide enquiry into ethnical determinants of severe maternal morbidity in the Netherlands was designed. Over a 2-year period, all cases of severe maternal morbidity in the Netherlands are prospectively collected.

Data will be analysed with specific attention to ethnicity. Incidences and case fatality rates will be calculated for the total group, and stratified by ethnicity. In a sub-standard care analysis, factors related to the woman, the health care provider and the health care system will be analysed for each individual case. In a medico-anthropological continuation study, deeper insight into medical and ethno-cultural determinants of maternal morbidity will be sought through semi-structured interviewing of immigrants who experienced severe maternal morbidity.

The study has started in August 2004. Results are to be expected as from 2006.

## Introduction

Severe maternal morbidity is more and more accepted in Western countries as an important indicator of reproductive health, in addition to the maternal mortality statistics.

In The Netherlands, unacceptably large differences are observed in maternal mortality ratios between immigrant populations and indigenous inhabitants.<sup>1,2</sup> To give more insight into the cultural and medical background of these tendencies, we designed a nationwide confidential enquiry into the causes of severe maternal morbidity.

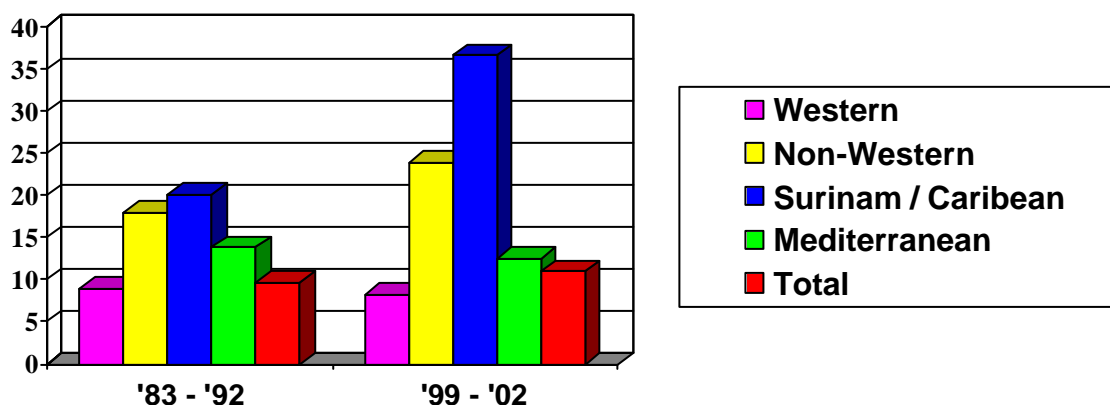


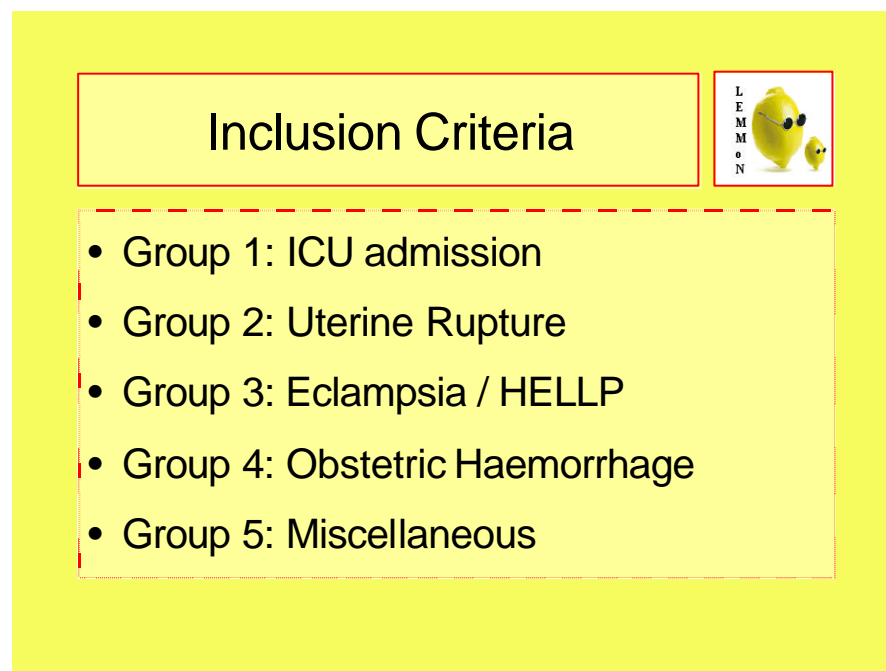
Fig 1. Maternal Mortality by Ethnicity in The Netherlands.

## Materials and Methods

During a 2-year period, from 1<sup>st</sup> August 2004 to 31<sup>st</sup> July 2006, all maternal morbidity during pregnancy, childbirth and puerperium will be included using the inclusion criteria shown in Figure 2. This study will represent almost 400.000 deliveries.

After the 2-year registration period, all data will be analysed with special attention to ethnic determinants. Sub-standard care will be assessed in sub-groups by an expert committee.

In a medical anthropology continuation study, we try to identify cultural and ethnic factors contributing to the disparity. This will be achieved by semi-structured interviewing of immigrants who experienced severe maternal morbidity.



**Inclusion Criteria**

- Group 1: ICU admission
- Group 2: Uterine Rupture
- Group 3: Eclampsia / HELLP
- Group 4: Obstetric Haemorrhage
- Group 5: Miscellaneous

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Fig 2. Inclusion criteria



## Results

Ninety one percent of all maternity wards in the Netherlands agreed to participate in our study. This includes all 8 tertiary care centres and all but one general teaching hospitals (Fig 3)

Three months after initiation of the study, 162 cases were included by 58% of the participants. Obstetric haemorrhage and intensive care unit admission accounted for more than two third of all severe maternal morbidity (Fig 4).

Nineteen percent of women were from immigrant populations, compared to 16% of all women delivering in The Netherlands in 2003. This result should be interpreted with caution, as no data were available yet on the multicultural Amsterdam region.

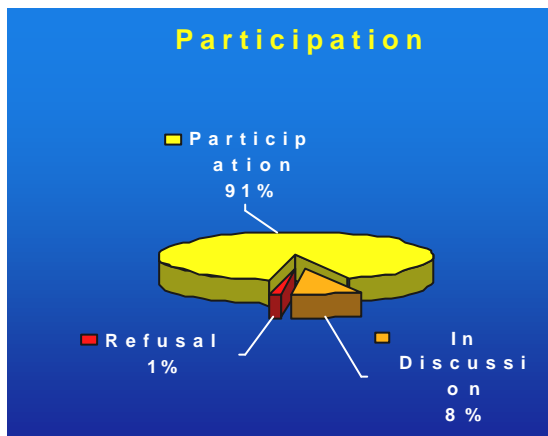


Fig 3. Participation among all 99 maternity units in the Netherlands

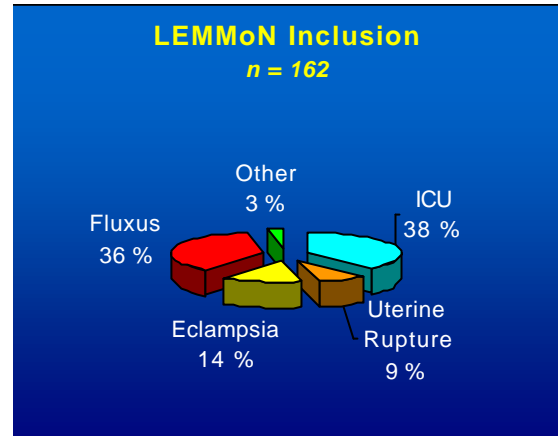


Fig 4. Maternal morbidity in The Netherlands by inclusion group after three months.

## References

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- [2] Schuitemaker N, van Roosmalen J, Dekker G, et al. Confidential enquiry into maternal deaths in The Netherlands 1983–1992. *Eur J Obstet Gynecol Reprod Biol* 1998;79:57–62.

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