

Pulse Oximetry Screening for Critical Congenital Heart Disease in Planned Out-of-Hospital Births
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Objectives

To describe the use of pulse oximetry screening (POS) for critical congenital heart disease (CCHD).

Study Design

This observational study of Wisconsin out-of-hospital births was performed from January to November, 2013. Licensed midwives, Amish birth attendants, and public health nurses were trained in the use of pulse oximetry to detect CCHD, supplied with pulse oximeters, and reported screening results and clinical outcomes.

Results

Results of POS in 440 newborns were reviewed; 173/440 births were from Amish or Mennonite communities. Prenatal ultrasonography was performed in less than one-half of the pregnancies and in only 13% of Amish and Mennonite women. A total of 432 babies passed the screening, 5 babies were incorrectly assigned to have passed or failed, and 3 babies failed the screening. Two of the babies who failed the screening were treated for sepsis and the third had congenital heart disease. There was 1 false negative result (coarctation of the aorta and ventricular septal defect).

Conclusions

This study provides information on the use of POS for CCHD in out-of-hospital births and shows that POS can be successfully implemented outside the hospital setting. Although the failure rate in this small sample was higher than reported in studies of hospital births, those babies failing the screening had significant disease processes that were identified more rapidly because of the screening.