

# What is ALERT?

Insufficient reductions in maternal and neonatal deaths and stillbirths in the past decade are a threat to achieving *Sustainable Development Goal 3*. Overcoming the knowledge-do gap to ensure implementation of established evidence-based interventions will be key.

**Our ALERT** project targets the intrapartum care period and aims to develop and evaluate a multifaceted health system intervention to strengthen the implementation of evidence-based practices and responsive care in sub-Saharan African hospitals. The project will take place in 16 hospitals in Benin, Malawi, Tanzania and Uganda.

The intervention will include four main components: (see also figure 1):

- i) end-user participation through narratives of women, families and providers of midwifery care to ensure a co-design of the intervention
- ii) competency-based midwifery training as part of capacity building
- iii) quality improvement, supported by data from a clinical perinatal e-registry and
- iv) empowerment and leadership mentoring of maternity unit leaders

We will evaluate the intervention through a *stepped-wedge design* complemented by a *realist process evaluation* and *economic evaluation* to estimate scalability and costs. The perinatal e-registry will provide data for i) the quality improvement and ii) the impact evaluation.

## ALERT Consortium Partners

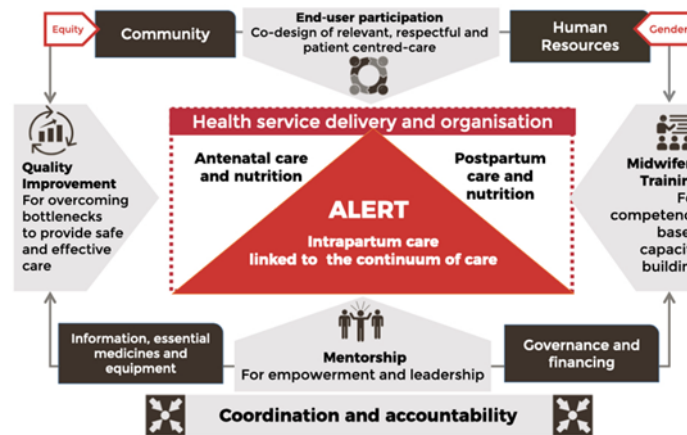


Fig. 1: Conceptual framework

## Project Funder



The ALERT project is funded by the European Commission's Horizon 2020 (No 847824) under a call for Implementation research for maternal and child health.

## For more information:

VISIT: <https://alert.ki.se/>

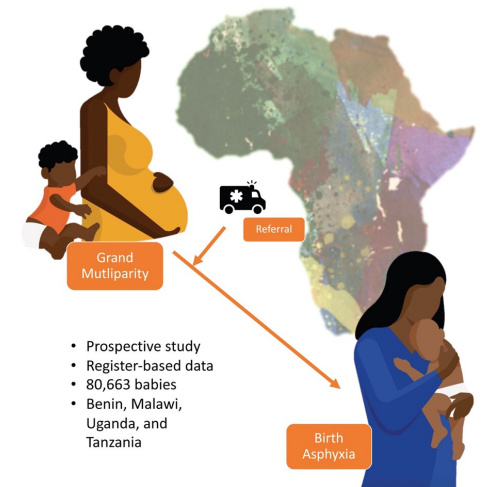
@ALERTprojectKI

@ALERT project,  
coordinated by Karolinska Institute



# ALERT

**Action Leveraging Evidence to Reduce perinatal mortality and morbidity in sub-Saharan Africa**



- Prospective study
- Register-based data
- 80,663 babies
- Benin, Malawi, Uganda, and Tanzania

Birth Asphyxia and its Association with Grand Multiparity and Referral among Hospital Births: A Prospective Cross-Sectional Study in Benin, Malawi, Tanzania, and Uganda **The link to the full paper:** <http://dx.doi.org/10.1111/aogs.14754>



## ***Birth Asphyxia and its Association with Grand Multiparity and Referral among Hospital Births: A Prospective Cross-Sectional Study in Benin, Malawi, Tanzania, and Uganda***

### **Aim**

The study aimed to assess asphyxia (APGAR score < 7) by country, parity and referral.

### **Method**

**Study design:** Cross-sectional data collection through the hospital-based ALERT perinatal e-registry.

**Study setting:** 16 public and faith-based high case-load hospitals in Benin, Malawi, Tanzania and Uganda.

**Participants:** All hospital births of a foetus above 1000g to a women aged 13-49. We document antenatal and obstetric risk factors and foetal outcomes.

**Study tools and data collection:** The ALERT perinatal e-registry with its rigorous data processing and assurance framework since July 2021.

**Analysis:** We investigated birth asphyxia and its association with grand multiparity and referral in Benin, Malawi, Tanzania, and Uganda.

Birth asphyxia was defined as a baby born alive with an APGAR score (Appearance, Pulse, Grimace, Activity and Respiration). The score is a clinical measurement widely used to assess fetal wellbeing.

## **Results**

We included 80663 births from 78125 women. Birth asphyxia was present in 7.0% (n=5612) of babies. More babies with birth asphyxia were born to grand multiparous women (11.9%) compared to other parity groups ( $\leq 7.6\%$ ). Grand multiparous women (5 or more previous babies) had 1.34 times higher odds of birth asphyxia (95% CI 1.17-1.54) vs para one to

## **Conclusion**

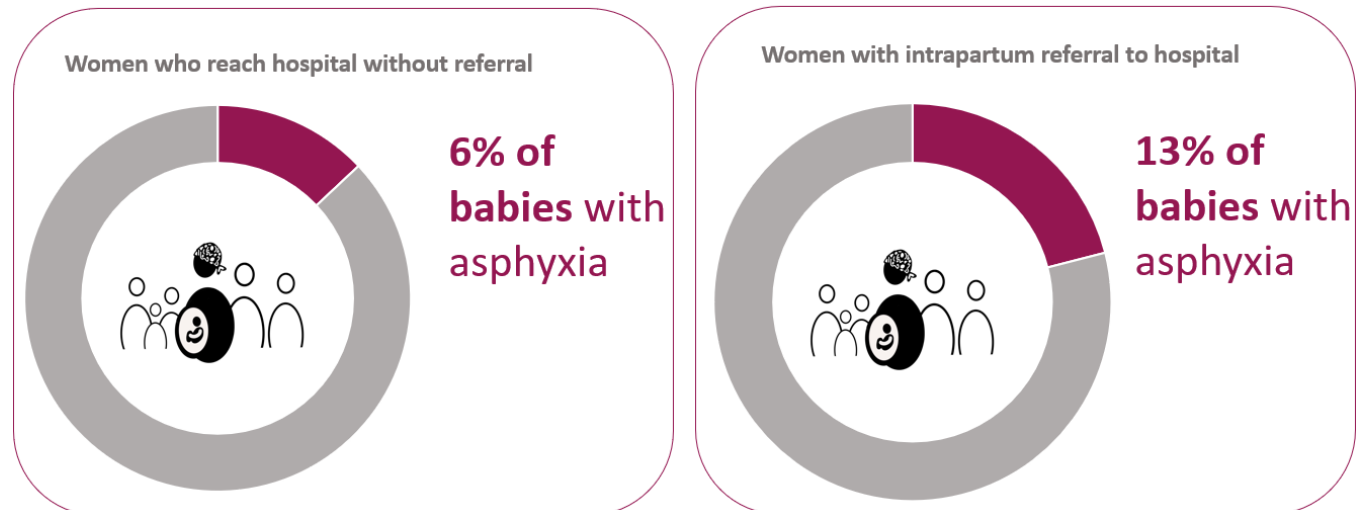
Babies of grand multiparous women who were referred intrapartum for hospital birth had the highest odds of birth asphyxia. These findings suggest they are a high-risk group in low-income countries and should seek attend hospital birth to avoid intrapartum referral.

**The link to the full paper:**

<http://dx.doi.org/10.1111/aogs.14754>

**High parity women** have greater odds of babies with asphyxia compared to lower parity women. Odds differed by country, perhaps due to health system effects or sample size.

**Risk nearly doubled** when they reach hospital following referral in labour



**Fig 1:** Risk of asphyxia in 16 hospitals across Benin, Malawi, Tanzania, and Uganda.