

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

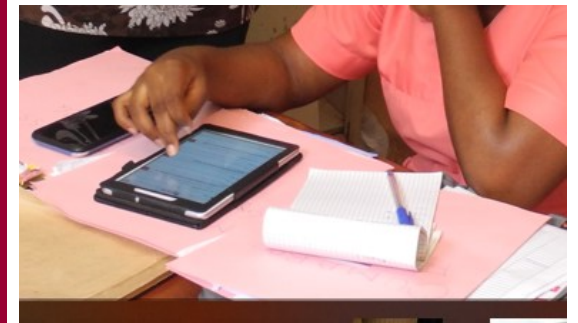


Photo: Data collection by midwives using a tablet in Benin

What is the perinatal e-registry about?

Aim

The ALERT perinatal e-registry was set up to i) collect the data to evaluate the ALERT study and ii) to provide continuous data for local quality improvement. Furthermore, the study allowed learning on who to set-up and maintain the collection of quality clinical data including the antenatal, intrapartum and early postpartum period.

Method

Where did we implement the perinatal e-registry?

ALERT works in Benin, Malawi, Tanzania and Uganda and we sampled in each of the countries four middle-size district and referral hospitals serving a mix of urban and rural populations.

What indicators do we collect and from whom?

We included all women aged 13-49 who delivered a baby weighing 1000g or more in one of the hospitals. The ALERT-employed data clerks or midwives abstracted data from several sources – with slight variations per country– but predominantly using i) mother-held antenatal card, ii) hospital admission book, iii) the record of labour, partograph and other clinical notes and iv) delivery and postnatal registers. Using a personal identifier, name and address as available from antenatal care visits, data are linked. The indicators include 53 questions and are programmed into a REDCap data collection application. The follow-up of the mother-baby is done individually from delivery to discharge, transfer or death or to the seventh day post-partum, whichever comes first.

Data include socio-demographic information, uptake of antenatal care and services received, pregnancy and admission risk factors, labour complications and monitoring during labour including presence of a companion, perinatal vital outcomes, APGAR score and other indicators of morbidity, birth weight, care received postnatally including breastfeeding.

How do we support the data collection?

We have established a rigorous support structure to ensure that data are complete and of good quality. This includes i) bi-weekly check of numbers and cross-check against health management information data (Fig 1) ii) automated consistency flags in REDCap (Fig 2) and 3) a dashboard indicating completeness of data entry (Fig 3).

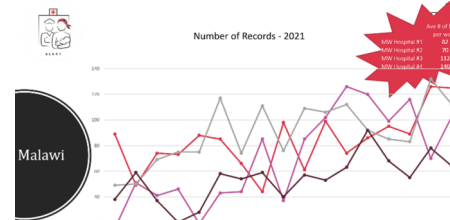


Fig 1. Graphical display of total numbers of birth

Rule Name	Rule Logic (Show discrepancy only if...)	Code	Count	Pass/Fail
1	Missing date of admission - flgs1date	isblankormis: [q130nc] = 5 AND ([q24amode] = 1 OR [q24amode] = 3 OR [q24amode] = 4 OR [q24amode] = 5) AND ([q25babies]=2 OR [q25babies]=3)	0	Pass
2	Onset of labor is no labor but mode of birth is not CS Baby 2 - flgs6z	isblankormis:code ([q130nc] = 3) AND ([q24amode] = 1 OR [q24amode] = 3 OR [q24amode] = 4 OR [q24amode] = 5)	19	Fail
3	Onset of labor is no labor but mode of birth is not CS - flgs6b	isblankormis:code ([q1date])	12	Fail
4	Missing date of admission - flgs1date	isblankormis:code ([q24mode])	9	Fail
5	Mode of delivery is missing - flgmode1	isblankormis:code ([q30agg])	26	Fail
6	Apgar score at 5 minutes is missing - flgaggar5min	isblankormis:code ([q30aagg]) AND ([q25babies]=2 OR [q25babies]=3)	1	Fail
7	Apgar score at 5 minutes is missing for baby2 - flgaggar5min2	isblankormis:code ([q30bagg]) AND ([q25babies]=3)	0	Pass
8	Apgar score at 5 minutes is missing for baby3 - flgaggar5min3	isblankormis:code ([q14start]) AND ([q130nc] = '1' OR [q130nc] = '2')	18	Fail
9	Missing date/time of start of labour - flgs14date3	isblankormis:code ([q15awhen]) AND [q18anom]	0	Pass
10	Missing date/time to decision if there			

Fig 2: Consistency flags in REDCap

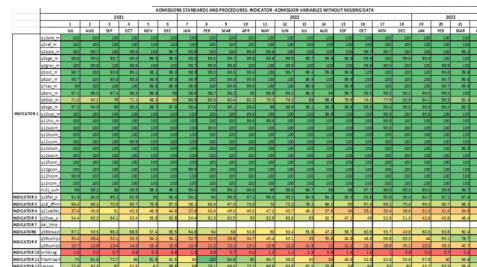


Fig 3: Dashboard indicating the completeness of data availability for selected indicators

The team has been meeting over zoom first weekly, after 18 months bi-weekly and after 24 months monthly to follow-up on the data. In parallel, data cleaning do-files were prepared so that exploitation of data started after 18 months of data were available.

Examples of data use!

To give immediate feedback we designed a dashboard which was made available to the hospitals (Fig 4).

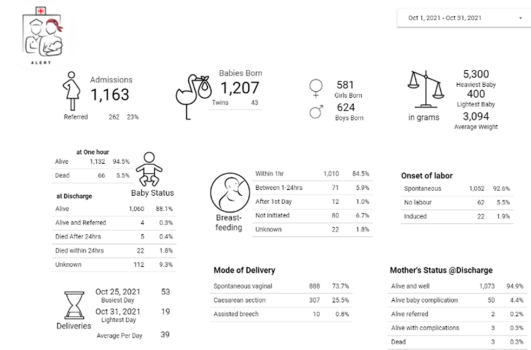


Fig 4: Data dashboard for hospitals

The data were also used to inform the quality improvement work and teams created so-called “run-charts” indicating progress in target areas of the improvement work (Fig 5).

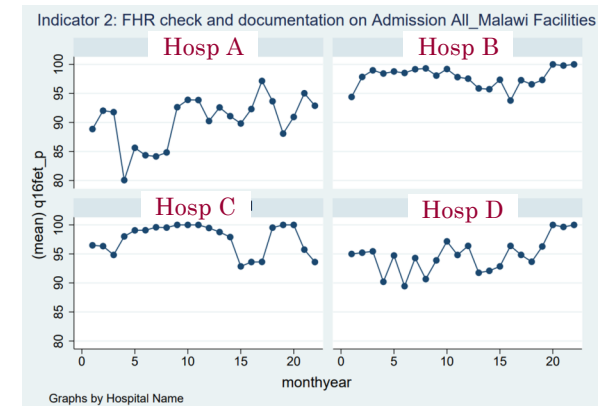


Fig 5: Run-charts

Finally, we prepared papers while collecting data,

Please check the ALERT homepage on examples