How to save lives in Africa?

A confidential enquiry into maternal and child deaths in Mali and Uganda

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What is the relative lifetime risk of maternal mortality in Africa compared to the UK?

a) 3  
b) 33  
c) 330  

- Developed countries: 1 in 7300
- Asia: 1 in 120
- Africa: 1 in 22
How many children die every year (globally)?

a) 70 000  
b) 700 000  
c) 7 600 000  
d) 10 000 000

Is this problem

a) Impossible to solve?  
b) Easy to solve?  
c) Possible but challenging to solve?
Maternal mortality ratio (per 100 000 live births)

MDG5: To reduce maternal mortality by ¾, between 1990 and 2015.

Under-five mortality (per 1000 live births)

MDG 4: To reduce under five mortality by 2/3 between 1990 and 2015
Case Study

- 36 year old woman
- Gave birth to her fifth child at home
- Continued to bleed after the delivery
- She consulted a doctor who did not send her to hospital
- Both the mother and her baby died after 6 days.
- *What are the avoidable factors?*

Case study

- The doctor should have referred them to hospital
- The mother should have received a blood transfusion
- Where do you think this story happened?
- They died in France, in 1943
- The woman was my grandmother and the baby was my uncle.
Maternal mortality in Great Britain, 1952-2008

Experience of confidential enquiries in the UK

Perinatal Mortality 2007

Why Children Die: A Pilot Study 2006
Why a confidential enquiry in Africa?

- To adapt the confidential enquiry as a tool which could be used in Africa
- To test whether this tool could help to reduce under-five and maternal mortality, by:
  - Identifying avoidable factors
  - Suggesting and prioritising possible interventions
  - Making and implementing recommendations

![Graph showing maternal mortality ratio for Tanzania](image)
Methods: Identifying maternal deaths

All maternal deaths occurring in:
Mbarara Regional Referral Hospital (Uganda)
Sikasso Regional Referral Hospital (Mali)
Kolokani district hospital (Mali)
Methods: Identifying child deaths

- All cases reported by village health workers in defined areas
- Fieldworkers visit the family, present condolences, and invite them to be interviewed
- Informed consent

Interviews

- “Verbal autopsy” interviews with families
- Interviews with any health workers involved at any level
Monthly panel review meeting

- Fieldworkers present case summary
- Panel includes doctors, nurses, village health worker / traditional healer
- Agrees on most likely cause of death (diagnosis)
- Identifies avoidable factors
- Makes recommendations

Biannual “Grand Committee” meeting:

- Local politicians and decision-makers are invited
- Summary of results and recommendations presented
- Feedback is invited
Interim results: Maternal deaths

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>Mbarara</th>
<th>Sikasso</th>
<th>Kolokani</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sepsis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-partum haemorrhage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eclampsia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incidental infection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High spinal anaesthetic</td>
<td></td>
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</tr>
</tbody>
</table>

Interim Results: child deaths in 12 months

- **Expected deaths**
- **Observed deaths**

![Graph showing expected and observed deaths in Rugando, Finkolo, and Kolokani]
Causes of child deaths (0-5 years)

- Severe malaria
- Neonatal
- Kwashiorkor
- ARI
- Diarrhoea
- Other

- Finkolo
- Kolokani
- Rugando

"Ebiino"
Place of death

Deaths are not evenly distributed

Rugando Subcounty
(Mbarara District, Uganda)
Avoidable factors

- 99% of deaths had at least 1 avoidable factor
- Missed opportunities to **prevent** illness
- Problems in getting **treatment**
How many deaths could have been avoided by preventive interventions?

- Child protection
- Clean drinking water
- Adequate nutrition
- Mosquito nets
- Vaccination
- Care of the newborn
- Safe delivery
- Antenatal Care
- Family Planning

Case 1007 (Finkolo, Mali)

- 18 year old unmarried schoolgirl fell pregnant.
- Did not attend any ANCs (because father of child unwilling to pay). Probably unwanted pregnancy, stigmatising for her to be pregnant before marriage.
- At 2 months of pregnancy had malaria and abdo pains, treated by matrone.
- Went into labour at 7 months’ gestation.
- Gave birth at CSCOM – not sure who assisted her.
- Is not recorded in register.
- Baby boy died after 10 minutes. No attempt at resuscitation.
Availability of essential medicines
Quality of human resources
Availability of human resources
Access (money, transport)
Treatment-seeking

Illness
Arrival at health facility

Cure

TREATMENT

Management by the family

Treatment-seeking
Recognition of severity
Home Management
Recognition of illness

0 50 100 150

- Yes
- too late
- don't know
- No
Case 1025 (Finkolo, Mali)

- 3yo girl, very poor family.
- Mother is a widow and looks after 2 children alone. Was not screened for HIV in pregnancy. Live 4km from health centre.
- Unwell for about 1 month with fever, diarrhoea, vomiting, oral candida, generalised oedema, cough, grunting, peeling skin, thin hair, swollen abdomen.
- Mother did not seek any modern healthcare because of lack of money. Used traditional medicines and modern medicines from itinerant medicine sellers.
- Child died at home on 17/8/11.
- Probable cause severe acute malnutrition (Kwashiorkor).

Access to care

<table>
<thead>
<tr>
<th>Service</th>
<th>Consulted Trained HW</th>
<th>Consulted Low-Level HW</th>
<th>Did Not Arrive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Care</td>
<td>0</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Primary Care</td>
<td>0</td>
<td>80</td>
<td>0</td>
</tr>
<tr>
<td>Community Health Worker</td>
<td>20</td>
<td>0</td>
<td>60</td>
</tr>
<tr>
<td>Traditional Healer</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>
Case Example: 3003 (Rugando, Uganda)

- 2 1/2 year old girl
- Fever, cough, abdominal pain
- Morning: taken to a church for prayers
  - no improvement
- Around 2pm: taken to HCII - no staff
- Taken to private drug shop:
  - given paracetamol + mebendazole + injection
- Parents borrowed money from extended family
- Child died while returning to drug shop the same evening

Case 3003: avoidable factors

- Delay in seeking appropriate treatment
- HCII staffed only by a nursing assistant who was not there when the child presented
- Family had to borrow money further delaying care
- Drug shop owner was unregistered and may not have had the necessary skills or drugs to manage the child
Quality of care

Case 8005 (Kampala, Uganda)

- 28 year old woman, 5th pregnancy
- 10/09/2012, 9am: Attends 4th ANC visit at private hospital. Admitted for delivery
- 1715: 4cm dilated, membranes intact
- Partograph not fully filled
- 11/09/2012, 1400: Next review. 7cm dilated. Given Oxytocin
- 1600: Face presentation. Advised to stop pushing. Midwife pushed baby back
- 2030: Caesarean section. Baby delivered in good health, ruptured bladder
- 2220: Returned to theatre because still bleeding. Subtotal hysterectomy
- 2325: Mother dies 10 minutes after coming out of theatre.
- Diagnosis: Severe Post-partum haemorrhage. Ruptured uterus.
Summary:
the vicious cycle of “learned helplessness”

- Access is difficult
- Delayed presentation
- Poor quality of care
- Patient dies
- Believe “it was the will of God”

The Key Take-home message:

- QUALITY is as important as quantity of human resources
How to break the vicious cycle?

Belief changes: treatment can work
Patient survives
Present earlier
Improve quality of care
Improve Access

What has been the impact of the confidential enquiry?

Number of child deaths per month, Finkolo (Mali)

Overall 28% reduction (96 to 69)
Child deaths in Kolokani (Mali)

Overall 33% reduction (96 to 48)

[Bar chart showing child deaths from August 2011 to April 2013, with a 33% reduction from 2011-12 to 2012-13.]
The District Health Office,
Minister District/Focal Government;
2013.

Dear Sir/Madam,

REQUEST TO ALLOCATE ANOTHER MIDWIFE AT NYAKAVO health CENTRE

The NRHPRM project is facing a critical shortage of nurses contributing to maternal, infant and child deaths in Nyakavo, Bugongi, Mpare, Bubula and Kasana Lido County.

During the study, we have found that delivery rates in Nyakavo Health Centre are too low compared to measured care attendance. Mothers in the community of Nyakavo Health Centre have access to delivering primarily with the help of Traditional Birth Attendants. Consequently, there is a significant need for a midwife in this area to ensure timely and safe deliveries. We have documented 10 such deaths in the last 6 months alone. We have summarized our findings and recommendations for the MOHCC, and the shortcomings in health care need of the rural population, at all times.

It is on this basis that we request your office to deploy another midwife urgently at Nyakavo Health Centre so that the Health Centre can provide effective maternal and delivery services to the community, and reduce these high maternal and child deaths.

Sincerely,

[Signature]

Why Uganda needs to increase its health budget: A briefing for MPs

Two million mothers and children are dying in Uganda. In 2000, the United Nations agreed upon the Millennium Development Goals (MDGs), which include targets to halve child mortality by 2015. These targets were not met, and the child mortality rate in Uganda remains unacceptably high. According to the Uganda Demographic and Health Survey 2016, for every 1,000 births, 150 die before their fifth birthday. This is a 90% reduction since 1980, but the target is to reduce it to 65 child deaths per 1,000 live births by 2030. This target is too ambitious, and every effort should be made to achieve it.

[Graph showing child deaths in Uganda (per 1,000 live births)]
Next steps: how to scale up?

- “Nominal group discussions” held in two locations in Uganda
- Suggestions include:
  - Online review of all cases by subcommittee
  - Select most pertinent cases for review by local panels
  - Rotate venue for panel meetings around different health facilities
  - System for implementing and following up recommendations
  - Use social events to disseminate key messages
- Longer term aim: Cluster-randomised trial to assess impact of the confidential enquiry on child mortality
Acknowledgements

- Mali:
  - Prof Mamadou Traoré, Dr Eugene Dembélé, Dr Issa Guindo
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- Uganda
  - Turinawe Ezra, Douglas Mwesigwa, Christine Kyokushaba, Sylvia Natukunda, Pedson Ayebazibwe, Theopista Fukokora
  - VHTs in Mbarara district
  - Fieldworkers and VHTs in Kibuli parish, Kampala
  - Fieldworkers at Bwindi Community Hospital

- Oxford
  - Dick Mayon-White, Brian Nicholson
Recommendations already implemented

- Mbarara:
  - CPD sessions on key issues in primary health care and at hospitals
  - Health education messages through churches
  - High-risk antenatal clinic has started
  - Referred patients are now being accompanied more often
  - 2 oxygen heads have been obtained

- Mali:
  - CPD sessions for health workers on malnutrition
  - Dissemination of key messages to high-risk villages
  - Poorly performing nurse was replaced
  - Supervision / training of some low-level health centres has started
  - On-call system started at health centre

What could be the mechanism?

- Participative panel review meetings function as a form of CPD
- Training sessions for health workers on management of severe childhood illness
- Dissemination of key messages to the community
- Patients are being referred earlier by traditional healers and by primary health care
- Pre-referral emergency treatment has improved
- Unqualified health workers have been discouraged from treating young children
- Communities are being encouraged to present earlier with maternal and childhood illnesses
Confidential enquiry: challenges

- Difficulty in accessing records
- Health workers refusing to be interviewed or lying
- Committee meetings:
  - Confidentiality
  - Hospital specialists dominate the discussion
  - Discussion often focuses on diagnosis rather than avoidable factors / recommendations
  - Need external input for objectivity
- How to slim down and scale up?
  - Fieldworker interviews are expensive: especially maternal