NOVEMBER SUMMIT 2008
BACKGROUND NOTE

'Unseen and uncounted: Neonatal mortality'

Introduction

In Ghana, indicators for neonatal mortality (NMR) (deaths/1000 live births occurring during the first month of life) have not improved between 1984 and now. The neonatal mortality rate (NMR) was recorded as 40 for the period 1984-1988 and 43 for the period 1999-2003[1].

Global estimates suggest that between 37-67 % of newborn deaths could be averted through 90 % coverage of existing maternal and child health programmes. Over 50% of these deaths are believed to take place at home, often unseen and uncounted[2].

Whilst the huge impact of HIV/AIDS and macro economic factors have been cited as reasons for the slow progress in reducing child mortality in Africa another important barrier to progress is the failure to reduce neonatal deaths[3]. Child survival programmes have primarily focused on death after the neonatal period, however neonatal deaths now account for an increasing proportion of under-five deaths suggesting that a specific programmatic focus on NMR is urgent.

In addition, stagnating maternal mortality and lack of improvements in maternal health in Ghana continue to impair newborn health and survival.

The Ghana Health Service (GHS) and the Ministry of Health are currently in the process of finalising a Child Health Policy 2008-2011, which outlines the interventions to be scaled-up in an integrated fashion, to reduce NMR and U5MR. The theme for the November 2008 Health Summit is 'Maternal and Neonatal Mortality' and clearly indicates the priority of government and health sector partners have put on these issues to feed into the 2009 Programme of Work (POW).

This paper briefly outlines the present situation , the most important causes and identifies interventions and opportunities to reduce neonatal mortality in Ghana. It makes maximum use of the draft *Situation Analysis for Health: Children Under– 5* prepared by the GHS, UNICEF and WHO and the draft Child Health Policy 2008-2011.

The present paper compliments the Summit paper '*Stagnating progress towards MDG Goal 5 in Ghana',* which addresses maternal mortality, health system strengthening, human resource and financing issues. The intention is not to repeat issues between the two papers.

Global situation

Africa accounts for 11 percent of the world's population but more than 25 percent of the world's newborn deaths. Each year in Africa, approximately 1 million babies are still born of whom 300,000 die during labor. A further 1.16 million babies die in their first month of life, 50% on the first day. Evidence indicates that more than half of these deaths occur in the home, that NMR is persistently higher among rural than urban families and closely linked to poverty.

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[1] Ghana Demographic and Health Survey 1988 and 2003

[2] "Africa's newborns – counting them and making them count", in The Partnership for Maternal, Newborn and Child Health

[3] "Africa's newborns – counting them and making them count", The Partnership for Maternal, Newborn and Child Health

In addition, 4 million low birth weight babies and others with neonatal complications live but never reach their full potential.

Almost all newborn deaths are due to preventable conditions: Infections (sepsis/pneumonia, tetanus and diarrhea), asphyxia and preterm birth complications are the biggest causes of death[4].

Ghana

Overall, newborn mortality has shown no significant decline in the last twenty years. The lowest estimated neonatal mortality rate was 30/1000 live births in 1993 - 1998. The rate in 1999 - 2003 was 43/1000 live births – which is similar to that recorded a decade earlier for the period 1984-1988.

Presently, KNUST estimates that 40,000 newborns die annually in Ghana [5].

The neonatal mortality rate was not measured in the 2006 MICS survey – but the infant mortality rate (IMR) measured by this survey increased to 71/1000 live births. This is the highest infant mortality rate recorded since 1988 corresponding to a staggering 64% of all under-five child mortality. It is not yet known what proportion of infant mortality for the period 2001-2006 takes place during the newborn period.

Over time, neonatal mortality has represented an increasing proportion of all under-five child mortality – rising from 26% in 1984-1988 to 39% in 1999 – 2003. Thus the reduction in under-five-mortality of 43 recorded for the same period is primarily (72 %) accounted for by a decline in the child mortality rate

(deaths in the 1-4 years of life). This indicates that existing interventions are inadequate, and that interventions specifically targeting NMR seem necessary to effectively reduce under-five-mortality. It is noteworthy that whereas under five mortality rates and infant mortality rates tend to run in parallel and have similar causes, neonatal morality differs more from under five mortality and has different programmatic implications[6]. This further calls for a separate and close monitoring of the NMR and corresponding interventions.

Figure 1: Trends in NMR, U5MR and IMR in Ghana 1960-2008
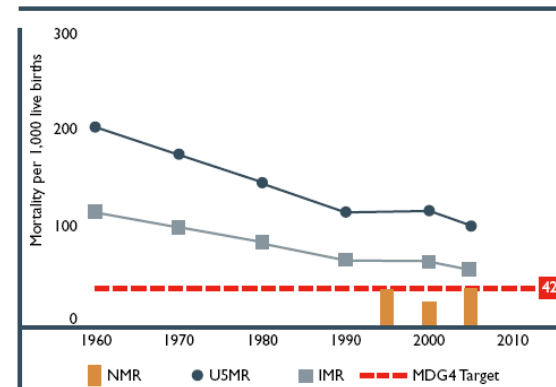
Source: Opportunities for Africa's newborn 2006

Mortality varies between geographic areas and by a number of other factors including the age and level of education of the mother, birth interval (shorter birth intervals are associated with higher mortality), rural or urban residence and household income. Interestingly, the middle income group suffers the highest levels of NMR.

The relation between maternal health and neonatal mortality is intrinsic, thus reducing maternal mortality will should have a positive impact on neonatal mortality. Challenges and opportunities

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[4] 4 "Africa's newborns – counting them and making them count", in The partnership for Maternal, Newborn and Child Health
[5] Report to UNICEF, Department of Community Health , SMS-KNUST, Kumasi, Nov 2008.

[6] Lawn, Mongi and Cousens: "Africa's newborns – counting them and making them count", in The partnership for Maternal, Newborn and Child Health: *Opportunities for Africa's newborn*

related to maternal mortality are described in the Summit paper *Stagnating Progress towards MDG Goal 5 in Ghana.*

Box 1: Trends in neonatal mortality

Neonatal mortality has not changed significantly between 1984 – 1988 and 1999-2003

- The neonatal mortality rate in 1999 – 2003 was 43/1000 live births The neonatal mortality rate in 1984 - 1988 was 40/1000 live births

- The proportion of under-five child deaths that are neonatal deaths rose from 26% in 1984 -1988 to 39% in 1999 - 2003

- The proportion of infant deaths that are neonatal deaths is around 60%

Causes
Available facility based data[7] suggest the most important immediate causes of neonatal deaths are the following:

Infections; including neonatal tetanus - acquired during the early post-natal period, a proportion of which will be associated with poor infection control measures, cord care and poor early feeding practices

**Asphyxia;** possibly secondary to birth problems or poor neonatal resuscitation,

Low birth weight (/Preterm); secondary to a variety of problems in the ante-natal period, which could

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[7] Facility-based data on neonatal mortality are unlikely to represent all newborn deaths in the community – since some deaths will not be reported to health facilities. This is particularly true of early newborn deaths, which may be more likely to be under-reported. In addition, facility-based estimates of neonatal deaths tend to underreport tetanus and infection deaths, and have a higher proportion due to birth asphyxia and pre-term deliveries.

include prematurity, maternal anemia, malaria and under-nutrition

Birth injuries; due to problems during delivery.

Figure 2: Estimated causes of neonatal deaths in Ghana
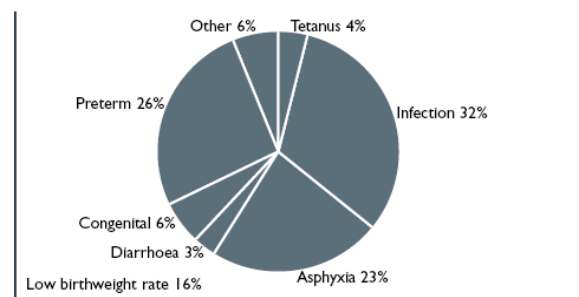
Source: Opportunities for Africa's newborn 2006

A study of 10,000 babies by Edmond et al in the Brong Ahafo region, Ghana (2005)[8] correlated with the the international estimates of causes of newborn deaths. The study found 46% of deaths occurred at home. 39% were caused by severe infection (50% pneumonia, 37% septicemia, 9% meningitis, 3% diarrhea and 2% NNT), 30% by birth asphyxia (50% unexplained and the remaining due to obstetric causes or hemorrhage), and 24% by prematurity (60% unexplained and the balance due to maternal factors). Of all deaths, 40% occurred in the first day, 36% on day 2-7 and 25% on day 8-28.

Existing interventions
Global estimates suggest that between 37-67 % of newborn deaths could be averted through 90 % coverage of existing maternal and child health programmes.[9] See Table 1.

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[8] Meeting the millennium development goals for child survival: Effects of early infant feeding and implications for neonatal policy development.. Edmond et al. *Kintampo Health Research Centre and London School of Hygiene and Tropical Medicine. 2005.*

[9] Africa's newborns – counting them and making them count", in The partnership for Maternal,

Table 1

Intervention	Reduction in neonatal mortality with 90% coverage
ANC	
ANC	9%
TT	5%
Delivery	
Skilled delivery and immediately after birth care	27%
PNC	
Postnatal care, including extra care LBW and treatment of illness	30%

The Brong Ahafo study showed ;

- 28% of neonatal deaths could be saved if all babies were breastfed from day 1, and 34% if breastfeeding started within the first hour
- Neonatal mortality increased markedly as delay in initiation increased
- The risk of neonatal death was increased 4 fold when milk based fluids or solids were given in addition to breast milk

In Ghana, implementation and monitoring of health interventions relevant to newborn health are inadequate.

Ante-natal care:
The proportion of women receiving at least 4 ANC visits is just 59 % and only 50% of facilities have basic supplies for high quality ANC. Thirty percent of pregnant women do not receive two doses of tetanus vaccine, 60 % of pregnant women do not receive intermittent presumptive treatment against malaria (IPT) and 24% are

anemic at 36 week pregnancy (20 % of pregnant women do not receive iron)[10].

Quality of ANC is inadequate, community based approaches have seen some success (IPTp and ITNs), health communication efforts are fragmentary.

Complications during labor and delivery:
Closely related to the challenges of reducing maternal mortality, barriers to skilled delivery include traditional beliefs, costs and the lack of access to skilled attendants and facilities. In Ghana, only half of all births are supervised by skilled attendants, 42% of facilities cannot offer essential obstetric services (basic and comprehensive) and referral for a complicated case is difficult in many areas[11].

Improving delivery will require both improvements in access to skilled providers, and improvements in the quality of care and referral

Post-natal care:
Although between 1999 and 2003, indicators of newborn care practices have seemingly increased, only 46 % of newborns are breastfed within an hour and 46 % are not exclusively breastfed at 6mths. Early bathing of newborn, which may lead to hypothermia, is a common practice and 46 % of newborns do not receive PNC within the first week[12]. Poor quality of care, including staff attitudes negatively affects uptake of ANC, delivery and PNC services.

Further, data on newborn care practices is not routinely collected by either

Newborn and Child Health: *Opportunities for Africa's newborn*

[10] GHS, UNICEF, WHO 2008: "Situation analysis for Health: Children under 5"
[11] Ibid.
[12] Ibid.

routine health information system or periodic surveys. The last survey to track such data was the 2002 Service Provision Assessment.

> *Standards and guidelines on early newborn care are not available, kangaroo mother care is in the process of being rolled out in four of ten regions and requires further scale-up, guidelines and responsibilities of community based workers are unclear and routine monitoring of interventions do not take place*

Addressing cultural attitudes and values:

Evidence suggests that some traditional customs may pose an unintentional danger to newborns and that knowledge and practices on ante-natal and postnatal care can be enhanced[13]. A recent report by KNUST[14] outlines the following practices as potential barriers to improved newborn care: use of male Community Based Agents (CBAs) who are not considered acceptable to advise on maternal and reproductive health (some districts have predominantly male CBAs), lack of demand for reproductive health care, bathing a newborn immediately after delivery and introduction of other fluids other than breast milk.

Interventions

The Ghana Health Service draft Child Health Policy 2008-2011 identifies the following interventions as most effective in reducing neonatal mortality:

- ANC
- Safe delivery
- PNC

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[13] The partnership for Maternal, Newborn and Child Health: *Opportunities for Africa's newborn*
[14] Report to UNICEF, Department of Community Health , SMS-Knust, Kumasi, Nov 2008.

- Early Initiation and Exclusive breastfeeding
- Thermal care, including Kangaroo Mother Care for low birth weight and preterm babies
- Hygienic cord care
- Prompt care-seeking for illness
- Management of the sick newborn (including sepsis, asphyxia and prematurity)
- PMTCT plus
- Immunisations
- Screening for sickle cell anaemia

BOX 2: Newborn Care practices

Positive finding
- 54% of newborns are exclusively breastfed
- 54% of newborns come for PNC in the first week of life
- 25% of PNC visits take place in the first 2 days

Challenges
- 46% of newborns are BF within an hour of birth
- 46% of newborns are not exclusively BF – 20% of babies are given pre-lacteal feeds
- 46% of newborns do not receive a PNC visit in the first week
- 82% of facilities practice immediate bathing of newborns
- Routine data are not collected in key areas including: hypothermia, resuscitation, cord care, newborn illnesses and care provided for LBW babies.

The child health policy recommends the following intervention packages:

- Focused antenatal care
- Postnatal care, including kangaroo mother care
- IMNCI – Management of sick newborn
- Promotion of key household and community practices

And cross cutting strategies of:

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Coordinated national scale up of behavioral change communication, M&E and adequate coordination of implementation and resources

> **It is worth noting that apart from Safe delivery, no specialized, high tech interventions are required. Most interventions can be implemented at community and first level health facilities**

Intervention levels

Interventions need to take place at multiple levels, including

- Community-based interventions, e.g. including addressing beliefs and practices in communities, skills of community workers for care and treatment of the newborn, ANC and PNC where appropriate.

> **Treatment of neonatal sepsis / pneumonia at the household level before immediate referral should be considered**

- Facility-based improvements in quality of care and availability of equipment and commodities

- Implementation and continuous adjustment of national-level health policy and interventions

- Improved supervision and monitoring of progress

Opportunities

The draft child health policy and strategy addresses neonatal mortality in a comprehensive and evidenced based manner. However, as roll-out relies on an adequate resource envelope, it should be costed and financial gaps identified

In line with efforts to increase Aid Alignment development partners should align resources behind the national priorities of maternal and neonatal mortality against one plan, one resource envelope and one M&E Framework

Integration of child health programmes, particularly those that rely on ANC e.g. malaria, immunization, PMTCT into a 'package' for mothers, children / newborns will provide the effective interventions and make efficient use of available resources

The majority of interventions required to prevent neonatal mortality are low tech and can be implemented at the community level

Close monitoring and evaluation of neonatal mortality rate and key interventions is necessary to ensure continuous programmatic adjustment and can be easily absorbed by HMIS

The Marginal Budgeting for Bottlenecks (MBB) tool has already highlighted implementation constraints bottlenecks to reach MDG 5 and 4. Using new data this can be updated to provide a further analysis of bottlenecks and required resources

The health summit provides an opportunity for concrete next steps to be agreed.