Concepts to improve Maternal and Neonatal Health based on Mortality reporting + suggestions to speed up referral system improvement for the Province Nusa Tenggara Barat, Indonesia

By
Dr. med. Hildegard Weyers-Faraj
Specialist Obs/Gyn, MPH
Senior Technical Advisor, GTZ

Lombok, May 2008
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### Abbreviations

- **ADB** Asian Development Bank  
- **ANC** Antenatal Care  
- **AusAID** Australian Agency for International Development  
- **BAPPEDA** Badan Perencanaan Pembangunan Daerah, Regional Development Planning Agency  
- **BDD** Bidan di Desa, Community Midwife  
- **BEONC** Basic Emergency Obstetric and Neonatal Care (Puskesmas)  
- **BKKBN** Badan Koordinasi Keluarga Berencana Nasional (National Family Planning Coordinating Board)  
- **BLU** Hospital Autonomy (Badan Layanan Umum)  
- **BMZ** German Federal Ministry for Cooperation and Development (Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung)  
- **DepKes** Departemen Kesehatan, Ministry of Health  
- **DESA** Village  
- **DESA SIAGA** SIAP (ready), ANTAR (to bring), JAGA (to take care)  
- **DHS** Demographic Health Survey  
- **Dikes** Dinas Kesehatan, Regional Health Services  
- **Dukun Bayi** Traditional Birth Attendance  
- **FP** Family Planning  
- **FZ** German Financial Co-operation (Finanzielle Zusammenarbeit)  
- **HDI** Human Development Index  
- **HMIS** Health Management Information System  
- **HRD** Human Resources Development and Management  
- **HSSP** Health Sector Support Programme  
- **IDR** Indonesian Rupiah  
- **IMR** Infant Mortality Rate  
- **InWEnt** German ‘Capacity Building International’ (Internationale Weiterbildung und Entwicklung)  
- **K1 / K4** First and Fourth antenatal visits respectively  
- **Kabupaten** District  
- **KfW** German Development Bank (Kreditanstalt für Wiederaufbau)  
- **KIA** Kesehatan Ibu dan Anak, Maternal and Child Health  
- **KN1 / KN2** First and Second postnatal visits respectively  
- **KV** Cooperation Project “Kooperations Vorhaben”  
- **MCH** Maternal and Child Health  
- **MDG** Millenium Development Goal  
- **MMR** Maternal Mortality Ratio  
- **MNH** Maternal and Neonatal Health  
- **MoH** Ministry of Health  
- **MPS** Making Pregnancy Safer  
- **NGO** Non-Government Organization  
- **NTB** West Nusa Tenggara Province (main islands: Lombok and Sumbawa)  
- **NTT** East Nusa Tenggara Province (main islands: (West) Timor, Flores, Sumba, Alor)  
- **PAM** Physical Assets Management  
- **PHO** Provincial Health Office  
- **PNC** Postnatal Care  
- **Polindes** Pondok Persalinan Desa, Village Birthing Hut  
- **PoO** Plan of Operation  
- **Posyandu** Pos Pelayanan Terpadu, Integrated Health Post  
- **Puskesmas** Pusat Kesehatan Masyarakat, Public Health Centre  
- **Pustu** Puskesmas Pembantu, Sub Puskesmas  
- **RH** Reproductive Health  
- **RSU** Rumah Sakit Umum, General/Public Hospital  
- **SISKES** Project “Strengthening the District Health System in NTT and in NTB, Indonesia”

Author: Dr. Hildegard Weyers-Faraj, MPH, Specialist Obs/Gyn, Senior Technical Advisor, GTZ
**Background**
Over the past fifteen years, Indonesia’s under-five mortality rate has declined by 42%, infant mortality\(^1\) by 31%, and neonatal mortality\(^2\) by 50% (MOH, WHO and CBS, 2005). Despite these recent improvements, however, Indonesia’s are still the highest maternal and infant mortality rates in the ASEAN region and it is recognized that major public health problems persist.

Nationally, life expectancy at birth was reported by MoH-WHO (2005) to average 68.1 years for women and 64.2 years for men. Among all provinces, West Nusa Tenggara (Nusa Tenggara Barat or NTB) ranks lowest at 59.3 years. East Nusa Tenggara (Nusa Tenggara Timur or NTT) averages 63.8 years. Review of the last three Indonesia Demographic and Health Survey figures shows that health status in these two provinces, in terms of Infant Mortality Rate (infants' deaths per 1,000 live births) for example, has not been improved much in a decade. Maternal Mortality Ratio (MMR) in Indonesia for the period of 2002/2003 was recorded as 307 deaths per 100,000 live births.

In terms of health services indicators, the MoH and WHO (2005) ranked NTB and NTT lowest in percentage of births attended by health personnel, with figures of 45.3% and 34.4% respectively. The proportions of completely immunized children aged 1 to 4 years were also low, 22.0% in West and 39.7% in East Nusa Tenggara. Finally, convincing evidence demonstrates that in those two provinces catastrophic health expenditures push households below the poverty line as measured by out-of-pocket payments to the health system. The percentage of household impoverished in NTB was 2.5 and in NTT was 3.0, placing the two provinces in the “severe condition” group compared with other provinces in Indonesia (MoH-WHO, 2005).\(^3\)

Over the period of the last years the overall MMR\(^4\) for NTB has dropped down and the implementation of the MPS related programs show effect. The province now is in the third upper part of all Indonesia (DEPKES 2005)

Nevertheless the local health authorities reported an increase in IMR and still relatively high MMR in defined districts of NTB above the expected average level in

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\(^1\) The number of deaths of infants (one year of age or younger) per 1000 live births  
\(^2\) The number of children dying under 28 days of age per 1000 live births  
\(^3\) Maternal and Child Health Practices and Care Seeking Behaviour At the Community Level in NTB and NTT,  2007 by Jim Sonnemann  
\(^4\) Maternal Mortality Ratio is the ratio of the number of maternal deaths per 100,000 live births
the first months of 2008. They immediately started an in-depth investigation of possible causes\(^5\). In the district of Lombok Barat the amount of 11 maternal deaths\(^6\) up to the end of April had reached 11 and the number of 49 neonatal deaths had been reported up to end of March (personal report by Drs. H. Rachman Sahnan Putra, DHO Lombar). If this trend will continue projected numbers for 2008 will be 33 maternal deaths (22 in 2006; 19 in 2007) and 196 neonatal death (125 in 2006; 165 in 2007), which is high above the average numbers of the last years. The provincial hospital in Mataram reported up to May already a number of 6 maternal deaths for 2008 compared to 9 cases in the whole year of 2006.

Independently of the trend in reported numbers and the possibility that coincidentally they cluster in the first half of the year the cases are worth looking into them as any avoidable death is one death too much and inquiries into maternal or infant deaths only detect general weakness of a system, which the same outcome for any general emergency case.

**Context and Purpose of this Report**

This report reviews the available health services baseline data of NTB Province with emphasis on MCH data and the referral system as well as practises related to the case management of emergency maternal and infant mortality cases. It is designed to provide recommendations for the project managers and local health authorities to act accordingly to a still worrying or even worsening situation related to maternal and infant health.

**Objectives**

**General objective**

- to identify and obtain information in regard to stagnant numbers of Infant Mortality and a still high Maternal Mortality in the first months of 2008 to serve as baseline information for SISKES Plus, HRD, and SPH Projects in NTT and NTB Provinces for consecutive action.

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\(^5\) Short report of Maternal and Infant Mortality Situation - In West Lombok in 2008, Drs. H. Rachman Sahnan Putra

\(^6\) A maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes (WHO)
Specific objectives

- to identify problems in clinical case management of pregnancy and delivery related cases as well as infant emergencies
- to recommend approaches on further kind of in-depth information collection in regard to IMR and MMR on different levels of the health system based on the WHO guideline: Beyond the numbers\(^7\), which can serve in future as a base for translation of findings into action
- to recommend sustainable practical, local solution to improve the quality of maternal, neonatal and infant health care based on the identified problems
- to identify and obtain information in regard to the integrated referral system in NTB and link it to the Maternal and Infant Health Care

Methodology

- assessment of 5 proposed approaches of in depth information gathering in respect to MMR in the WHO guideline: Beyond the numbers
- review of relevant documents, assessments and surveys
- interviews with key stakeholders\(^8\)
- random visits to different levels of health service providers

Review of documents

**WHO guideline: Beyond the numbers**

*Beyond the Numbers (7)* presents ways of generating information, which goes beyond quantitative assessments to describe the magnitude of a problem, but tries to understand the underlying causes: why did something happen and how can this be avoided in future. Information collection is done on different levels of the health sector and recommendation for problem solution is also given for different levels. Pros and cons of the different approach are discussed.

The guide provides five approaches to generate qualitative information on maternal outcomes or maternal health and could also be applied on the in-depth information collection into neonatal / infant mortality. The project’s philosophy is clearly that every avoidable death is an unnecessary one.

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\(^7\) Beyond the Numbers Reviewing maternal deaths and complications to make pregnancy safer WHO 2004

\(^8\) See annex
Table 1: Summary of approaches described in WHO guideline: Beyond the numbers
(Qualitative approaches / "Telling the story")

<table>
<thead>
<tr>
<th>Reviewing Approach</th>
<th>Operational definition</th>
<th>Level of information gathering</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Community – based maternal death review</td>
<td>A method of finding out medical causes of death and ascertaining the personal, family or community factors that may have contributed to the deaths in women who died outside of a medical facility</td>
<td>Community</td>
</tr>
<tr>
<td>- Verbal autopsy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Facility based maternal death review</td>
<td>A qualitative in-depth investigation of the causes and circumstances surrounding maternal death occurring at health facilities. Deaths are initially identified at the facility level but such reviews are also concerned with identifying the combination of factors at the facility and the community that contributed to the death, and which ones were avoidable</td>
<td>Health facilities:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Puskesmas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• District Hospitals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Provincial hospital</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Community members</td>
</tr>
<tr>
<td>3 Confidential enquiries into maternal deaths</td>
<td>A systematic multi-disciplinary anonymous investigation of all or a representative sample of maternal deaths occurring at an area, regional (state) or national level. It identifies the number, causes and avoidable or remediable factors associated with them</td>
<td>Provincial Health Office</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>4 Surveys of severe morbidity (near misses)</td>
<td>The identification and assessment of cases in which pregnant women survive obstetric complications. There is no universal applicable definition for such cases and it is important that the definition used in any survey be appropriate to local circumstances to enable local improvements in maternal care.</td>
<td>Hospitals</td>
</tr>
<tr>
<td>5 Clinical audit</td>
<td>Clinical audit is a quality-improvement process that seeks to improve patient care and outcomes through systematic review of aspects of the structure, processes and outcomes of care against explicit criteria and the subsequent implementation of chance. Where indicated, changes are implemented at an individual, team or service level and further monitoring is used to confirm improvement in health care delivery</td>
<td>Hospitals</td>
</tr>
</tbody>
</table>

As most maternal deaths occur in health facilities (30% are home deliveries in NTB, HHS 07) the most appropriate and at the same time most cost efficient method would be a facility based maternal deaths review as it also accommodates for information obtained from family members/community members. If health workers are used as interviewers ownership of the data is higher and motivation for change more probable. The review provides good learning experience for all grades of staff. The negative aspect that it limits the information from the community side could be compensated by teams looking for the deceased’s family and ask more questions direct.
Any death needs immediate follow-up and consecutive action. That is the reason why 2 different ways of data analysis will be needed. Immediate Analysis of the event by the health workers themselves (facility based) is the first step. To gain information about similar contributing factors, trends and patterns a statistical analysis of the aggregated questionnaires is required. It’s the starting point of a permanent surveillance circle.

**SISKES Plus and existing documents**

The GTZ project SISKES Plus and their partners have collected already a lot of baseline information to be used by the different partner organisations. A check against the matrix of different information collection tools presented in the WHO guideline gives the following picture:

<table>
<thead>
<tr>
<th>Reviewing Approach</th>
<th>Level of information gathering</th>
<th>Already done in NTT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Community –based maternal death review - Verbal autopsy</td>
<td>Community</td>
<td>Not done so far or done in a non formalized way</td>
</tr>
</tbody>
</table>
| 2 Facility based maternal death review | Health facilities:  
  - Puskesmas/DHO  
  - District Hospitals  
  - Provincial hospital  
  - Community members | Report of maternal and infant mortality in West Lombok, 2008, Report existing in one district |
| 3 Confidential enquiries into maternal deaths | Provincial I Health Office Ministry of health | To best of knowledge not done |
| 4 Surveys of severe morbidity (near misses) | Hospitals | To best of knowledge not done |
| 5 Clinical audit | Hospitals | Done in RSU Mataram for deaths with possible legal consequences PHO/DHO maternal audits existing |

On the national level household surveys which also contain public health relevant information are carried out on a regular base. The project as such did a baseline survey in their intervention area and collected and summarised all available information on MSH relevant data. Additionally the monitoring system of the partner organisations provides quantitative data on actual maternal and child health.
The review of the different available documents (see table above) reveals the following situation:

**Maternal mortality and morbidity and neonatal mortality in Indonesia**

The Indonesian Demographic and Health Survey (IDHS) of 1997 indicates 334/100,000 live births. The data collected in the above surveys, using sisterhood method, is influenced by the capability of the respondent to report the deaths of sisters, as well as to define maternal deaths correctly. The leading causes of maternal mortality during pregnancy, delivery and the postpartum period in Indonesia are haemorrhage, infection, and eclampsia up to today as shown in the IDHS 2002-2003. Haemorrhage is the leading cause of death, the majority of which is reported to be due to retained placenta. This can be an indication of inadequate management of the third stage of labour in most cases. Death due to infection is an indicator of poor prevention and management of infections. These deaths are also caused by unsafe abortion mainly due to unwanted pregnancies.

Indonesia has attained significant progress in enhancing the quality of the health of the population. The data from the IDHS (Indonesia Demographic and Health Survey) shows that the infant mortality rate fell from 46 per 1,000 live births (IDHS 1997) to 35 per 1,000 live births (IDHS 2002-2003). The maternal mortality ratio declined from
334 per 100,000 live births (IDHS 1997) to 307 per 100,000 live births (IDHS 2002-2003). According to the Iodized Salt Consumption Survey, that also contains the survey on nutritional status, the prevalence of underweight among children under five decreased from 34.4 percent in 1999, to 25.8 percent in 2002. Nevertheless, in the efforts to improve quality health services, various new problems and challenges have emerged as a result of social and economic changes and from changes in the global and national strategic environment. The global challenges are among others the attainment of the Millennium Development Goals (MDGs), while the national challenges are problems pertaining to decentralization in health endeavours.

**MCH Profile in NTB**
With respect to maternal and infant health care, the Republic of Indonesia has a long history of strategies that have decreased maternal mortality and morbidities throughout the country. There are however, areas such as NTT and NTB where, though data indicates reductions, these provinces require further initiatives to improve the situation. Available national surveys such as the periodic Indonesian Demographic and Health Survey differentiate usually only as far as the province, not the districts. Three baseline surveys for NTB and NTT were therefore commissioned, finalized, and results disseminated in 2007:

- The Health Services Baseline Survey
- The Household Survey on Maternal and Child Health Practices and Care-Seeking Behaviour at Community Level in West and East Nusa Tenggara
- Mapping of Human Rights in Maternal and Neonatal Health Using WHO Tool in NTB and NTT

**Access to Services for Pregnancy, Childbirth and the Postpartum - results from Distribution of health care facilities in NTB**
Governmental health facilities are relatively equally distributed throughout the province following the principles of a districts health system at least by function. In the Indonesian health system the districts hospital is an administrative unit, which is connected directly to the local government. The distribution of private health facilities is not reflected in the picture below.
Graph 1: Distribution of Health Care Facilities in NTB

Health Care Facility
Nusa Tenggara Barat Province

Mapping results for the province of NTB reflect the conditions of the health system and health status of the population and are summarized below:

**Antenatal care**

Strong evidence shows that women who attend antenatal care and who have skilled attendance at delivery (either in a health facility with an emergency unit or with a skilled provider who is linked to a functioning referral system) and during the postpartum period, have a better chance of surviving the unexpected complications of labour and birth than those who do not.9

In NTB, the proportion of pregnant women who had at least one time visit (K1) to health facilities for antenatal care at the first trimester is considerably high with little drop off for the fourth (K4) visit. Women access antenatal care on average 7 times during their pregnancy.

Antenatal care in NTB is provided by midwives, general doctors, obstetricians and traditional birth attendants.

attendants (TBA). According to the Primary Data Survey of 2007 in Tanjung Karang village in Mataram city, antenatal care provided by midwives was 95%, TBAs 67% and obstetricians 1%. In Sumbawa, antenatal care by midwives was 98% and TBAs 80%, general doctor 1% and obstetricians 4%. These numbers are impressive but do not reflect the quality of antenatal care provided.

Nutrition status
Cases of Chronic Energy Deficiency (Kurang Energi Kronik/ KEK) and anaemia in pregnancy remain serious problems despite provision of standard micronutrients to the majority of pregnant women.
In NTB in 2002, the cases of malnutrition and anaemia had reached 77% (PHO of NTB) recorded in 7 districts. In NTB in 2006, it was reported that 6% of pregnant women suffered from anaemia. In Sumbawa, 3% pregnant women were recorded having anaemia (PHO of NTB, 2006).

Delivery/ Childbirth Services

In NTB, data from BPS (Statistic Center) shows that deliveries are assisted by midwives / paramedics (53%), TBAs / others (41%), and doctors (6%), (NTB Child Profile 2005). The 2007 Primary Data Survey in NTB showed that about 23% of deliveries were conducted in the home with the assistance of a midwife and or TBA, especially in rural areas. The Household Survey data indicated 68% of women were delivered by health personnel. In Mataram City the assistance was 71% and in Sumbawa, 74%.

Two major causes of maternal mortalities during delivery in either national, provincial or district level is haemorrhage (usually immediately following delivery) and pre and or eclampsia. Haemorrhage in NTB comprises of 44% of maternal deaths (PHO of NTB) and is similar to the national rate (42%, IDHS 2002/03). In Timor Tengah Selatan District of NTT, maternal mortality caused by haemorrhage is very high at

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10 Household Survey found that large numbers of women visit TBAs for care (predominantly massage) in addition to K1 and K4 through the health system.
11 It is unclear how this statistic is derived but standard indicator is Hb <11g d/l

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71% of all reported maternal deaths. Abortion is the third leading cause of maternal death at national level. There is no recorded data at provincial and district levels. Apart from maintaining good health during pregnancy, the availability of a functional referral system including transportation and medical facilities with blood transfusion capability will also affect the safety of mothers who are delivering their baby\textsuperscript{12}.

- Blood supply to help emergency cases during deliveries is provided and distributed by PMI (Indonesia Red Cross) to RSU (General Hospital) and RSUD (District General Hospital), but is not always available and not all hospitals have sufficient blood bank facilities.
- In NTB the referral system takes some time, starting from Polindes to Puskesmas and from Puskesmas to Hospital and causing women with complications in rural areas to suffer further. Women in the rural areas in NTB that have transportation problems to the referral destination are 19% in (IDHS, 2002/03).

**Maternal Mortality**

In NTB, MMR for 2002/2003 was unrecorded, the last MMR recording was in 1997 at 394/100,000 live births (IDHS, 1997)\textsuperscript{13}. Data indicative of maternal mortality in NTB are numbers of deaths, which show a decrease from 108 deaths per 93,497 live births in 2005 to 97 deaths per 92,405 live births in 2006. The MMR in NTB is in fact going down well and the province by now is in the top third of country…based on the 2005 data from DEPKES.

**MCH Profile NTB**

Data from different reports (PHO, DHO, Dep. MCH) are often non consistent and seem not to be validated. Under the assumption that they contain systematic mistakes they are still able to show trends in the development of the MMR in the last years. PHO and DHOs are requested by the Bureau of Statistics to report absolute case numbers and not to calculate any rates or ratios themselves. For the purpose of comparison the MMR in this report is calculated on base of published delivery rates and maternal death case numbers per district and year from the annual report of the MCH department of the Provincial Health Office NTB. The data show the following situation and confirm the trend published by DEPKES

\textsuperscript{12}See various UN documents published from 2000.

\textsuperscript{13}Calculation of maternal mortality ratio requires large numbers to be statistically significant.
Table 4: Maternal Mortality rate in NTB from 2005-07

<table>
<thead>
<tr>
<th>District/Municipal</th>
<th>NTB</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>Desa Siaga supported by SISKES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mataram</td>
<td>97,4</td>
<td>44,8</td>
<td>0,0</td>
<td>yes</td>
</tr>
<tr>
<td>2</td>
<td>Lobar</td>
<td>116,4</td>
<td>117,7</td>
<td>101,4</td>
<td>yes</td>
</tr>
<tr>
<td>3</td>
<td>Loteng</td>
<td>72,9</td>
<td>69,1</td>
<td></td>
<td>no</td>
</tr>
<tr>
<td>4</td>
<td>Lotim</td>
<td>67,4</td>
<td>62,5</td>
<td></td>
<td>no</td>
</tr>
<tr>
<td>5</td>
<td>Sumbawa</td>
<td>105,1</td>
<td>194,8</td>
<td></td>
<td>yes</td>
</tr>
<tr>
<td>6</td>
<td>Sumbawa Barat</td>
<td>73,7</td>
<td>0,0</td>
<td></td>
<td>yes</td>
</tr>
<tr>
<td>7</td>
<td>Dompu</td>
<td>143,3</td>
<td>179,2</td>
<td></td>
<td>no</td>
</tr>
<tr>
<td>8</td>
<td>Bima</td>
<td>123,6</td>
<td>86,3</td>
<td></td>
<td>no</td>
</tr>
<tr>
<td>9</td>
<td>Kota Bima</td>
<td>126,7</td>
<td>178,7</td>
<td></td>
<td>yes</td>
</tr>
</tbody>
</table>

Data source: Annual report of MCH unit in PHO, NTB

By the exception of Lombok Barat (Lombok) the MMR of the health districts on Lombok Island lays below the average number in NTB, which was calculated with 88.7 and reflects an enormous success of the efforts of the last years in the area of Maternal Health. Most districts with still critical high numbers are situated on the island of Sumbawa with the District of Sumbawa having the highest mortality rate.

The DHO Lombok Barat, which ranked second for the last several years (out of 9 districts in NTB) in regard to magnitude of maternal and infant mortality looked
already more detailed into their cases. The amount of maternal deaths decreased slightly, but the number of reported neonatal and infant deaths increased over time. Even considering the fact that this might be due to a better reporting system these numbers are still alarmingly high and are not adequate to the amount of inputs.

Table 5: From Short Report of Maternal and Infant Mortality Situation - In West Lombok in 2008, Drs. H. Rachman Sahnan Putra

<table>
<thead>
<tr>
<th>Year</th>
<th>IMR per 1000</th>
<th>MMR per 100.000</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Lobar NTB/NAS</td>
<td>Lobar NTB/NAS</td>
</tr>
<tr>
<td>1995</td>
<td>89.82 Th.1997 NTB=110.5, Nas = 52.2</td>
<td>- 373 (Nas.)</td>
</tr>
<tr>
<td>2000</td>
<td>-</td>
<td>253 NTB th 1997 = 394</td>
</tr>
<tr>
<td>2001</td>
<td>75.10</td>
<td>203 -</td>
</tr>
<tr>
<td>2002</td>
<td>72.71 NTB = 74, nas.=35</td>
<td>106 307 (Nas.)</td>
</tr>
<tr>
<td>2003</td>
<td>70.28 40 kasus</td>
<td>-</td>
</tr>
<tr>
<td>2004</td>
<td>67.00 -</td>
<td>33 kasus</td>
</tr>
<tr>
<td>2005</td>
<td>64.30 -</td>
<td>22 kasus</td>
</tr>
<tr>
<td>2006</td>
<td>62.80 -</td>
<td>22 kasus</td>
</tr>
</tbody>
</table>

Table 6: From Short Report of Maternal and Infant Mortality Situation - In West Lombok in 2008, Drs. H. Rachman Sahnan Putra

<table>
<thead>
<tr>
<th>Year</th>
<th>Neonate death (0-28 days)</th>
<th>Infant death (1 month – 1 year)</th>
<th>Maternal death</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>88</td>
<td>-</td>
<td>22</td>
</tr>
<tr>
<td>2006</td>
<td>125</td>
<td>57</td>
<td>22</td>
</tr>
<tr>
<td>2007</td>
<td>165</td>
<td>84</td>
<td>19</td>
</tr>
</tbody>
</table>

Author: Dr. Hildegard Weyers-Faraj, MPH, Specialist Obs/Gyn, Senior Technical Advisor, GTZ
The leading causes of deaths follow the general pattern in the province with postpartum haemorrhage for maternal and LBW for infants.

Infant Mortality

Infant Mortality Rate (IMR) in Indonesia was reported to be 35 deaths per 1000 live births (IDHS, 2002-2003).

Figure 1. Trend of Infant Mortality Rate in the period of 1994-2003 in NTB and NTT, compared to the Indonesia national average (compiled by Jim Sonnemann 2007)


Author: Dr. Hildegard Weyers-Faraj, MPH, Specialist Obs/Gyn, Senior Technical Advisor, GTZ
NTB, IMR reported at 74 deaths per 1,000 live births and Neonatal Mortality Rate at 24 deaths per 1000 live births (IDHS, 2002). The number of neonatal deaths (less than 28 days) recorded in 2005 was 689 deaths which is similar to 683 deaths in year 2006 (7/1,000 live births) (PHO of NTB, 2006). Available data at district level of Sumbawa shows that numbers of neonatal deaths are 68 neonates of 9,720 births (7/1,000 live births) in 2005 (PHO of NTB, 2006).14

The mortality rate of infants of less than 7 days of age at national level is 20/1000 live births. In NTB, neonatal mortality rate is similar to the national rate when data from reliable large studies such as the census are studied. This indicates that NTB does not follow national or international patterns where the majority of infant deaths occur in the neonatal period. That is, the majority of infant deaths occur between the second and twelfth months of life.

Data was gathered during the Household Survey 2007 of birth weights from mothers’ handheld records. In NTB the range between districts was between 1 – 15% (both rural districts) with an average of 8% of babies born less than 2.5 kilograms.

![Percentage of babies weighed at birth and of birth weight in grams](image)

Low birth weight is one of the main causes of infant mortality at provincial and district levels. In NTB, low birth weight is estimated to account for 43% of deaths and 36% in Sumbawa District. Infant mortality without identified cause is 4% at national level but 22% in NTB with 16% in Sumbawa.

Major neonatal complications are shown in the table below

| Percentage of types of neonatal complication in NTB and NTT |

14 These low rates indicate that many neonatal deaths go unreported in both NTB and NTT.
Traditional believes and cultural practises

Traditional believes and practises pertain to the low level of nutrition status for pregnant and post partal women as well as for children. No recent study on cultural practises on Lombok was found, but key interviewers confirm descriptions of cultural practises from West Jawa\textsuperscript{15} to be still deeply rooted on Lombok. Eating taboos on certain vegetables and fruits, on fish and eggs for pregnant or lactating mothers contribute to women’s and children’s low nutritional status due to protein and vitamin deficiencies and consecutively influence various health status indicators for women and children. Feeding practises exist where infants from the age of 14 days on are given solid food already (now sometimes substituted by commercial products) and only a low percentage of children are fully breastfed up to the age of 6 month in NTB (28\%)\textsuperscript{3}, a percentage, which is much lower in NTB then in NTT (47\%) or all over Indonesia (39.5\%, IDGS 2003). On top gender issues (e.g. male children and men get better food) and the social position of a young woman in a patrilineal society does not allow her to speak up or take up responsibility for her own health especially in a rural setting up to today. Quite often this further influences maternal and infant health through the kind of decision processes in regard to health care seeking behaviours and delayed decisions in respect to the referral system (see document 3).

\textsuperscript{15}Unraveling the Mysteries of Maternal Death in West Jawa, Center for Health, University of Indonesia, Depok, 1996
Percentage of good feeding practice in children by gender and poverty level (first 2 years of life) see household survey 2007(3)

These traditional practises seem to become less relevant over the last years but the percentage of fully breast fed children is still very low, a contributing factor to malnutrition and the prevalence of diarrhoea in infants.
**Referral System**

The last guidelines for referral are dating from 1972. Referral up to today is an individual decision based on individual knowledge. PHO NTB supported by the SISKES technical advisor is working at present on a revised integrated Referral System. The MCH referral system, which exists from MoH, will be integrated. WHO Partograph as one of the tools for referring is in use. A draft of the revised document has been compiled already, but only exists in Bahasa Indonesia and cannot be studied by the author personally due to language problems.

**Project achievements up to present**

2007    Assessment of the referral system by GTZ and partner
2008    Assessment follow-up by PHO NTB, development of an integrated Referral System

Observations from visited medical facilities and information obtained from key-interviewees reveal that at least the patients referred following the given structures are accompanied by a referral letter. Weak points identified are

- Delay of decision making in the community in regard to pregnancy and/or delivery related problems. The community is organised in a patrilineal way. The male decision maker is not always present. This problem is taken up by the ‘Desa Siaga’ approach, where the family (male decision maker) is asked beforehand which place he/they prefer to come for delivery and what the plan they have in case of complications.

- Difficulty in organizing transport on all levels of the referral system (e.g. no petrol). In the ‘alert village’ system, community / health cadres develop what they call “ambulans desa” and “tabulin” (monthly deposit budget by pregnant women organized by cadre or the midwife). Those two initiatives should overcome the referral transportation problem at least on the community side.

- Most of the time back referral letters are not sent to the referring institutions. In case back referral letters are written they are given to patients direct, who do not handle them over to their referring service provider (doctor/midwife) or these letters do not contain the relevant information or recommendation. This practise prevents necessary follow-up home visits

- In many cases no direct feed back is given even in case of medically wrong case management. The districts came already up with a recommendation that
PKM personnel (doc/midwife) should accompany the referred patient to the hospital and assist, learn or be involved in the management of the patient in the hospital by the obstetrician.

- The geographical distribution of lower level health facilities, referral PKMs and hospitals sometimes does not always adhere to the underlying principals of a strictly applied referral system. Additionally families have their own preferences in respect to the choice of a medical facility which might conflict with the application of standard operation procedures for emergency cases.

- Availability at any given time of specialists at district hospitals (especially obstetricians) for a fast response to critical cases is not given at any time. The referral system needs to accommodate for such a situation to avoid further delay. Ideally Hospitals should provide houses for obstetrician, surgeon, radiologist and anaesthetist close to the hospital (walking distance). In NTB though most hospitals, not even the Provincial Hospital in Mataram is able to do so. The obstetrician of RSU Lombok Barat e.g. lives in Mataram City.

- Even though the Partograph as a tool for monitoring the progress of labour and decision making on a needed referral is officially in use it is often not applied correctly. At present the Partograph serves as the document for reimbursement of the midwife by ASKESKIN/JAMKESMAS. Key interviewees report that midwives create partographs or even copy former ones after the delivery just for the purpose of payment.
Summary of findings

- The number of maternal deaths in NTB is decreasing over the last years
- The number of neonatal and infant deaths is stagnant or increasing
- The antenatal coverage is good but the provided service often of bad quality
- The decreasing socio-economic status of the population and the consecutive bad nutrition status of pregnant women and infants especially in rural areas might influence the high numbers of babies born with low birth weight (small for date as well as premature)
- Bad feeding practices (low rate of full breastfeeding) contribute to a high prevalence of malnutrition and diarrhoea in infants
- In 2008 the already reported number of deaths in NAD are above expected level
- Quantitative data exist sufficiently
- Qualitative data answering the question: ‘Why does it happen?’ exist rudimentary
- Audits and reviews are partly done but not in a formalised way and without systematic analysis and follow-up actions on all possible levels of intervention
- Referral system guidelines are out-dated
- A system of different level maternity care is in place PONED/PONEK
- The different levels of health care delivery are mostly adequately equipped in regard to instruments, material, sterilisation devices, resuscitation units and drugs.
- Processes are systematised and SOPs in place
- Maintenance of equipment is questionable, no PAM system is in place and the maintenance budget is too low
- Trained personnel is available, but might not be distributed to needs
- Partographs are in use, but not always used correctly
- On community level the ‘Alert Village Approach’ / ‘Desa Siaga’ is in place with an already high coverage
- The quality of care and related negative outcomes are determined by the possibility and willingness to adhere to the existing standards

Author: Dr. Hildegarde Weyers-Faraj, MPH, Specialist Obs/Gyn, Senior Technical Advisor, GTZ
**General Recommendations**

**Referral system**
- Monitor the use of the Partograph randomly. DHO and/or the reimbursing institution (e.g. ASKES) need to create a punishment system for midwives, who do not apply to the standard management of delivery, and set in place a controlling committee to guard the implementation of the SOPs in the field.
- Introduce and emphasise on back referral letters for feedback to referring facilities and socialize the benefits to all stakeholders. All divisions/sections of the CPs need to be involved and need to integrate this aspect into their supervision visits.
- Consider in the revision of the integrated referral system for NTB the local conditions (geographical and HR matters).

**SISKES**
- Facilitate an inter-department dialogue between the different departments in PHO as well as between PHO/DHOs and hospitals.
- Initiate and facilitate an inter-sectoral approach and integrate the activities into the general district planning (advocacy).
- Do an internal mapping of the occurrence of maternal and neonatal/infant death in NTB (GIS\(^{16}\), cooperation with DED and BAPPEDA NTB) for the whole province or for the sake of simplicity a manual mapping of occurrences.
- Initiate and facilitate a formalised way of maternal and infant death review facility based with a community component with PHO and DHOs.

**Community**
- Concentrate GTZ supported Desa Siaga implementation activities into districts with above level MMR and IMR.
- Support promotion activities in regard to ANC attendance and feeding practices.

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\(^{16}\) Ein Geoinformationssystem (Kurzform GIS) oder Geographisches Informationssystem ist ein „rechnergestütztes Informationssystem, das aus Hardware, Software, Daten und den Anwendungen besteht. Mit ihm können raumbezogene Daten digital erfasst und redigiert, gespeichert und reorganisiert, modelliert und analysiert sowie alphanumerisch und grafisch präsentiert werden.“ (Lit.: R. Bill, 1994)

Es vereint eine Datenbank und die zur Bearbeitung und Darstellung dieser Daten nützlichen Methoden (Kurzdefinition nach Fédération Internationale des Géomètres).
Partner organisations

- Introduce daily/regular meetings in all Puskesmas/hospitals where case management and outcome of critical cases are discussed in a constructive way
- Introduce quality circles (e.g. on response time for emergencies,
- Propose to agencies involved in food supplementary programs to assist Lombok Barat (and others) in the actual economic and food crisis
- Follow up the M/C emergency unit in RSU Mataram
- Emphasise on integrated monitoring and supervision visits including monitoring of the use of partographs and service/functionality of equipment
- Introduce incentives for midwives in remote areas as done in Sumawera Barat
- Implement the principles of IMCI

Political authorities

- Treat IMR an MMR as a general socio-economic indicator to be prioritized in an inter-sectoral committee on district level.
- Advocate towards the local government, planning office, health and education commission that investment into human capital by allocating a sufficient budget for the fight against IMR and MMR is worth while. Show the linkage between IMR and MMR with macro-economical loss and (non-) achievement of the MDG especially poverty reduction
- Advocate an adequate maintenance budget in local government and privatise/outsource PAM (Physical asset management) by calculating the cost efficiency of maintenance versus new purchase
Specific recommendation

Immediately (act on individual case based information)

- Debrief Counterparts immediately about the findings and discuss first actions on findings (workgroup on verbal autopsy)
- Establish a work group to agree on an adapted and simplified format of doing verbal autopsy/facility-review based on the WHO Verbal autopsy standards and recommendations from WHO ‘Beyond the Number’ (9) consisting out of personnel from PHO, hospitals, DHO and Puskesmas as well as SISKES staff.
- Consider in the format statistical considerations for qualitative and quantitative data analysis and design the questionnaires following principles explained in Beyond the Number (9) page 34
- Interrogate and document cases in areas, where occurrence is above average retrospectively as well as in each new case by CP/project staff
- Use the district of Lombok Barat (district with highest case number of maternal deaths) on Lombok island as pilot district to try the developed format
- Do mapping of the reported cases and concentrate the immediate follow-up interventions in critical areas
- Establish the work group as a team which will analyse the case based collected information, has the authority to recommend and act and will follow-up interventions. The group should implement principles of QM
- Most cases of maternal deaths in NAD are facility based. Use the Method of facility based maternal death review
- Adapt the questionnaire for maternal deaths into a format for infant deaths and start immediately to use these forms for inquiries into infant deaths

Intermediate-term (act on collective/aggregated case based information)

- Apply the piloted and adapted format throughout the province
- Establish a maternal mortality surveillance cycle by collecting all questionnaires (PHO) and analyse the data statistically to identify trends and patterns

Translate findings into action with all stakeholders (e.g. health and social departments, political authorities, other agencies)

Author: Dr. Hildegard Weyers-Faraj, MPH, Specialist Obs/Gyn, Senior Technical Advisor, GTZ
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Annex

1. MoM Debriefing 02.06.08
2. Presentation Debriefing 02.06.08
3. Observations and Interviews from visit to medical facilities in NTB
4. Pictures of district tour, information gathering
Date: 27.05.08
Name of institution: RSU Mataram
Function of institution: Provincial Hospital
Name and title of interviewees: Dr. Agus Wisaya, director
Dr. I.G.G. jelante, Paediatrician
Dr. Rusdhy Hamid, Obs/Gyn

General comments: The hospital serves as the highest referral unit and as class B hospital as a teaching institution also for medical students. By decree teaching institutions have now to be class A hospital, which needs an adapted structure and the accreditation of minimum 18 services. All doctors and nurses working in the hospital need to pass a credential and competency test. At present 12 services are accredited. BLU status is another target. The referral system is not kept in reality as geographical conditions interfere with the set up. Many patients come direct from a PKM without going through a district hospital, which is accepted (no specialist, no budget)

1. How does your maternal and neonatal audit function? Do you do it in a formalised way? Who participated? How often do you do it? Which cases do you audit? How do you follow up the defined problem? Elements of QM?
   There is a monthly audit chaired by PHO for doctors to discuss maternal death. Internally the hospital discusses cases, which might have legal consequences

2. How do you maintain/service you equipment? By whom? Which intervals?
   Maintenance unit with own (insufficient) budget for preventive services is available. Equipment serviced on IR and Maternity ward on a weekly basis. There is no trained person for repairs and equipment is useless if it breaks down and the guarantee time is over. All equipment seen during the visit was functional and with sufficient standard.

3. Do you do internal education? If yes in which way?
   All specialists are considered to be part time lectures. They teach internal personnel, personnel from PKMs and district hospitals as well as students

4. Do you have daily meetings, where critical cases are discussed?
   The obstetric department has a daily morning meeting for doctors and medical students, where cases of the last day are discussed. No midwives are present
5. Do your staffs write summary reports about cases, which were referred? For Puskesmas in 2 directions
Most of the patients do come without referral letter. The Prov. Hospitals discharges patients without accompanying letters (at least from the obstetric department. No feed back down is given.

6. For PKMs: How often are you supervised and by whom? With which consequence or action?

7. Average preparation time for CS, who decides on a CS, decision mechanism?
During day time 30 min
At night 60-120 min
Final decision by Obstetrician on call

In 2006
- In patient (delivery room)
  - Deliveries (total) : 2901
  - Spontaneous vaginal deliveries : 2034
  - Caesarean section : 700 (24%)
  - Vacuum extraction : 144
  - Forceps extraction : 1

Check on

- SOP available and on display? Available x functional □
- Midwives available in institution 24h per day yes x No □
  Obstetricians yes □ No □ RSU Mataram has 5 Obs/Gyn m on call
  Paediatrician yes □ No □ on call
  Anaesthesia yes □ No □ on call
  laboratory yes x No □
  x-ray yes b No □
  blood bank yes

- Equipment available and functional all was functional
  1. oxygen Available □ functional □
  2. laryngoscope Available □ functional □
  3. Vacuum extractor Available □ functional □
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>sterilised delivery kit</td>
</tr>
<tr>
<td>5.</td>
<td>atropine/adrenalin</td>
</tr>
<tr>
<td>6.</td>
<td>oxytocin</td>
</tr>
<tr>
<td>7.</td>
<td>disposable needles</td>
</tr>
<tr>
<td>8.</td>
<td>iv-fluid</td>
</tr>
<tr>
<td>9.</td>
<td>Blood</td>
</tr>
<tr>
<td>10.</td>
<td>resuscitation unit close to delivery bed available and functional</td>
</tr>
</tbody>
</table>

There exists a huge emergency unit with 14 resident doctors existing, who work in shifts. All patients have to pass through this unit, even though at present no maternal/neonatal emergency treatment or assessment is possible. Long walking distance to the maternity ward or neonatal unit is aggravating the situation. Neonatal resuscitation and delivery bed for obstetric assessment is available in the IR, but is not functioning yet. Possible solution is to allow clients to assess maternity direct. Alternatively a midwife has to be called to the ER in advance.

Summary:
Sufficient system is in place in regard to In-Puts like personnel and equipment as well as a set-up of continuous education and audit system. The hospital management tries to apply quality standards, which could not be evaluated personally due to time constraints. The same applies for standards of teaching. Changes should be made in the set up for emergency care for maternal cases. A QC on preparation time for C/S should be set up.

Date: 28.05.08
Name of institution: **PKM Labuati Lobar, Lombok Barat**
Function of institution: Puskesmas non PONDEK
Name and title of interviewees:  dr. Ngurah Agaung, Head of PKM

General comments: The PKM is situated on the main road. It is on old structure, but seems to be maintained well and very clean. The Head of PKM seems to implement a good leadership. No emergency equipment for maternal services. Head of PKM feels under challenged, because he has all trainings needed for PONEK emergency care.
1. How does your maternal and neonatal audit function? Do you do it in a formalised way? Who participated? How often do you do it? Which cases do you audit? How do you follow up the defined problem? Elements of QM?

In case of a maternal death the PKM sits for an internal maternal audit with all persons involved after receiving the case file from the hospital. The documents are sent to DHO for the district audit. Verbal autopsy form is exists for neonatal deaths.

2. How do you maintain/service your equipment? By whom? Which intervals?

The person in charge of the warehouse is responsible up to the time of equipment distribution. Regular preventive service is/should be done by a person of each unit.

3. Do you do internal education? If yes in which way?

Yes, training is conducted for nursery and midwifery students as well as for personnel.

4. Do you have daily meetings, where critical cases are discussed?

No. Meetings are held in response to critical cases.

5. Do your staffs write summary reports about cases, which were referred? For Puskesmas in 2 directions

Patients are given a referral letter. In most cases there is no feedback from higher institutions.

6. For PKMs: How often are you supervised and by whom? With which consequence or action?

2 times yearly from DHO as integrated supervision and 2 x by MCH units. Done in 07

Incomplete abortion: 21 for referral
Amount of deliveries in sub district: 623
Assisted deliveries: 601
In Puskesmas: 140
By TBAs: 22
Partographs used in all delivery

- SOP available and on display? Available x functional □
- Midwives available in institution 24h per day yes x No □ on call but live on the compound
• laboratory  yes x  No  □  during working hours, but sticks for blood and urine available

• Equipment available and functional  nearly all was functional
  11. oxygen  Available □  functional  □  bottle was empty, but replacement available
  12. laryngoscope  Available □  no
  13. Vacuum extractor  Available □  no
  14. sterilised delivery kit  Available  x
  15. Vitamin K  Available  x
  16. oxytocin  Available  x
  17. disposable needles  Available  x
  18. iv-fluid  Available  x
  19. Blood  needs to be applied for with Ind. Red Cross
  20. resuscitation for baby unit close to delivery bed  yes

Date: 28.05.08  
Name of institution: PKM Kediri, Lombok Barat  
Function of institution: Puskesmas  PONDEK  
Name and title of interviewees:  dr Joho Purmono, Head of PKM  

General comments:  The PKM is situated on the main road. It is on old structure with partly newer buildings. The place is spacious with 3 postpartum beds (23). Emergency unit is situated close to entrance and in short distance to the delivery rooms. Generally the PKM is not very clean, especially part of the equipment. All emergency devices are available and functional.

1. How does your maternal and neonatal audit function? Do you do it in a formalised way? Who participated? How often do you do it? Which cases do you audit? How do you follow up the defined problem? Elements of QM?  
In case of a maternal death the PKM sits for an internal maternal audit with all persons involved after receiving the case file from the hospital. The documents are sent to DHO for the district audit. Verbal autopsy form is exists for neonatal deaths.

2. How do you maintain/service you equipment? By whom? Which intervals?
Non functional equipment is reported to DHO. You can see old models of equipment not in use but standing around for several years. One person of each unit is in charge of maintenance or servicing.

3. Do you do internal education? If yes in which way?
Yes, training is conducted every month for ‘knowledge transfer’.

7. Do you have daily meetings, where critical cases are discussed?
No. Meetings are held in response to critical cases

8. Do your staffs write summary reports about cases, which were referred? For Puskesmas in 2 directions
Patients are given a referral letter. There is no feedback from higher institutions.

9. For PKMs: How often are you supervised and by whom? With which consequence or action?
In 2008 (up to May) there was no supervision done by DHO. Normally a supervision form is handled out but no real follow-up.

Amount of deliveries 30-40 per months
Vacuum extraction and classical Curettage possible
Partograph used on all deliveries

- SOP available and on display? Available x functional □
- Midwives available in institution 24h per day yes x No □ on call but live on the compound
- Laboratory yes x No □ during working hours, but sticks for blood and urine available

- Equipment available and functional all was functional
  1. Oxygen Available □ functional □ bottle was empty, but replacement available
  2. Laryngoscope Available □ functional x
  3. Vacuum extractor Available □ functional x
  21. Sterilised delivery kit Available □ functional x
22. Vitamin K  Available x
23. oxytocin  Available x
24. disposable needles  Available x
25. iv-fluid  Available x
26. Blood  from Ind. Red Cross
27. resuscitation for baby unit close to delivery bed  yes

28.05.08

Introduction to the Desa Siaga approach in
Desa: Banyu Mulek, Lombok Barat

The village midwife (Ibu Sulhayati) is running the Polindes since 15 years. Her qualification is a 1 year training. 2 x a week she works at the Puskesmas and she herself works in partnership with the local TBAs. 99% of all her cases (in average 20 deliveries per months) are paid through the Askes scheme. Drugs are bought by herself (FP, Norplant, Vit. K, Oxytoxin etc.). Place clean and well kept and organised. SOP displayed on the wall. Sterile material was available. Functional autoclave exists and in use. Pre- and post natal care and FP clinic organised, which is the link to the Desa Siaga program.

A meeting was called with the committee. 6 members were present, among them the facilitator, the coordinator and a representative of the PKM in charge of the area. The 4 areas, represented by 4 register books, were explained and shown. Actual cases were described. The program is in place since 2/07 and works well (statement of all members) not only used for maternal cases but also in case of other emergencies. No case of maternal deaths in along time. 1 neonatal deaths happened recently and was followed up by the facilitator (reason: Pneumonia not treated in time due to counterproductive traditional habits and wrong perception of what and for what reason treatments are given in a medical institution). The communities traditionally had common funds for events like funerals, weddings etc., but not for health related issues.

During the discussion the question turned up why the district still suffers a high mortality rate. None of the members blamed the providers but the transport system as well as traditional attitudes and hierarchical family structures. The facilitator emphasised on the fact (?) that the Desa Siaga approach empowers women and decision concerning their own health can be done by them now.
Summary: Very good impression of the quality of services delivered by the midwife. The community is dedicated to the program, which appears to be sustainable.
Concepts to improve Maternal and Neonatal Health based on Mortality reporting + suggestions to speed up referral system improvement for the Province Nusa Tenggara Barat, Indonesia
General objective

- to identify and obtain information in regard to stagnant numbers of Infant Mortality and a still high Maternal Mortality in the first months of 2008
- to prepare this baseline information for SISKES Plus, HRD, and SPH Projects in NTT and NTB Provinces for consecutive action.
Specific objectives

- to identify problems in clinical case management of pregnancy and delivery related cases as well as infant emergencies
- to recommend approaches on further kind of in-depth information collection in regard to IMR and MMR on different levels of the health system based on the WHO guideline: Beyond the numbers, which can serve in future as a base for translation of findings into action
- to recommend sustainable practical, local solution to improve the quality of maternal, neonatal and infant health care based on the identified problems
- to identify and obtain information in regard to the integrated referral system in NTB and link it to the Maternal and Infant Health Care
Methodology

- assessment of 5 proposed approaches of in-depth information gathering in respect to MMR in the WHO guideline: Beyond the numbers
- review of relevant documents, assessments and surveys
- interviews with key stakeholders
- random visits to different levels of health service providers
Documents studied

- The Health Services Baseline Survey
- The Household Survey on Maternal and Child Health Practices and Care-Seeking Behaviour at Community Level in West and East Nusa Tenggara
- Mapping of Human Rights in Maternal and Neonatal Health Using WHO Tool in NTB and NTT
- Data from PHO, DHO and MCH unit
MMR in NTB per district 2005-07
## IMR in NTB in 2006 per district

<table>
<thead>
<tr>
<th>District</th>
<th>IMR 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mataram</td>
<td>8.8</td>
</tr>
<tr>
<td>Lobar</td>
<td>15.5</td>
</tr>
<tr>
<td>Loleng</td>
<td>0.0</td>
</tr>
<tr>
<td>Lotim</td>
<td>18.1</td>
</tr>
<tr>
<td>Sumbawa Barat</td>
<td>20.4</td>
</tr>
<tr>
<td>Sumbawa</td>
<td>15.2</td>
</tr>
<tr>
<td>Dompu</td>
<td>9.7</td>
</tr>
<tr>
<td>Bima</td>
<td>8.1</td>
</tr>
<tr>
<td>Kota Bima</td>
<td>8.1</td>
</tr>
<tr>
<td>NTB</td>
<td>13.0</td>
</tr>
</tbody>
</table>
Neonatal Mortality in NTB 2005-07 per district
Findings

- The number of maternal deaths in NTB is decreasing over the last years
- The number of neonatal and infant deaths is stagnant or increasing
- The antenatal coverage is good
- The decreasing socio-economic status of the population and the consecutive bad nutrition status of pregnant women and infants especially in rural areas might influence the high numbers of babies born with low birth weight (small for date as well as premature)
- In 2008 the already reported number of deaths in NTB are above expected level
Findings

- Quantitative data exist sufficiently
- Qualitative data answering the question: ‘Why does it happen?’ exist rudimentary
- Audits and reviews are partly done but not in a formalised way and without systematic analysis and follow-up actions on all possible levels of intervention
- Referral system guidelines are out-dated
Findings

- A system of different level maternity care is in place PONED/PONEK
- The different levels of health care delivery are mostly adequately equipped in regard to instruments, material, sterilisation devices, resuscitation units and drugs.
- Processes are systematised and SOPs in place
- Maintenance of equipment is questionable, no PAM system is in place and the maintenance budget is too low
Findings

- Trained personnel is available, but might not be distributed to needs
- Partographs are in use, but not always used correctly
- On community level the ‘Alert Village Approach’ / ‘Desa Siaga’ is in place with an already high coverage
- The quality of care and related negative outcomes are determined by the possibility and willingness to adhere to the existing standards
Summary of Findings

- Adequate inputs in place
- Mostly adequate system of service delivery with standardised processes is in place
- Good ANC coverage
- Problems are tackled already (e.g. Referral System)
- Community involvement exists
- Quantitative data are available

But

- Outcome is not adequate
- Quality of services still questionable

That leaves the **WHY?** question
General recommendation

Referral System

- Monitor the use of the **Partograph** randomly. DHO and/or the reimbursing institution (e.g. ASKES) need to create a punishment system for midwives, who do not apply to the standard management of delivery, and set in place a controlling committee to guard the implementation of the SOPs in the field.

- Introduce and emphasise on **back referral letters** for feedback to referring facilities and socialize the benefits to all stakeholders. All divisions/sections of the CPs need to be involved and need to integrate this aspect into their supervision visits.

- Consider in the **revision of the integrated referral system** for NTB the local conditions (geographical and HR matters)
General recommendation

SISKES

- To initiate and facilitate an **inter-sectoral approach** and integrate the activities into the general district planning (advocacy)
- To do an internal **mapping** of the occurrence of maternal and neonatal/infant death in NTB (cooperation with DED and BAPPEDA NTB) for the whole province or manual mapping
- To initiate and facilitate a formalised way of **maternal and infant deaths review** facility based with community considerations with CP (PHO and DHOs)
- Concentrate GTZ supported **Desa Siaga implementation** activities into districts with above level MMR and IMR.
General recommendation

Counterparts

- Introduce **daily/regular meetings** in all Puskesmas/hospitals where case management and outcome of critical cases are discussed in a constructive way
- Introduce **quality circles** (e.g. on response time for emergencies,
- Propose to agencies involved in **food supplementary programs** to assist Lombok Barat (and others) in the actual economic and food crisis
General recommendation

Counterparts

- Follow up the **M/C emergency unit in RSU Mataram**
- Emphasise on **integrated monitoring and supervision visits** including monitoring of the use of partographs and service/functionality of equipment
- Introduce **incentives for midwives/doctors** in remote areas as done in Sumbawa Barat
- Implement the principles of **IMCI**
General recommendation

Political authorities

- Treat **IMR an MMR** as a general **socio-economic indicator** to be prioritized in an inter-sectoral committee on district level.

- **Advocate** towards the local government, planning office, health and education commission that investment into human capital by allocating **a sufficient budget** for the fight against IMR and MMR is worth while. Show the linkage between IMR and MMR with macro-economical loss and (non-) achievement of the MDG especially poverty reduction.

- **Advocate** an adequate **maintenance budget** in local government and privatise/outsource PAM (Physical asset management) by calculating the cost efficiency of maintenance versus new purchase.
Specific recommendation

Immediate

- Establish a workgroup to develop a standardized questionnaire for maternal and infant deaths
- Concentrate on areas with high MMR and IMR
- Use this workgroup for data analysis and act accordingly
- Pilot in Lombok Barat
- Adjust questionnaire if needed
- Implement principles of Quality management (QM)
- Use a facility based method with community aspects
Specific recommendation

Intermediate

- **Apply** the piloted and adapted format **throughout the province**
- Establish a maternal mortality **surveillance cycle** by collecting all questionnaires (PHO) and analyse the data statistically to identify trends and patterns
- **Translate findings into action** with all stakeholders (e.g. health and social departments, political authorities, other agencies)
Apply principles of QM

- Identification of cases
- Data collection
- Analysis of findings
- Recommendation and action
- Evaluation and refinement

Maternal mortality /infant mortality surveillance cycle
MINUTES OF MEETING

Debriefing of Dr. Hildegard Short Consultation

Sign: Karina  Date: 02.06.08 (11.00 – 14.00)

Meeting: Debriefing Short Consultation on Analysis on Improvement of referral system on Maternal & Neonatal Health

At the request of: Dr. Hildegard Weyers-Faraj

Participants: Abdullah, Ida Rosida – DHO Lombok Barat, Agus Wijaya, Dr. IGG Ngurah Djelantik, SpA – Mataram Hospital, dr. Wayan, dr. IB Djelantik – PHO, Rahmi, Karina, Fahmi - SISKES

Absent Excused: Dr. Rusdhy Hamid, SpOG

Report distribution: NTT, NTB, Jakarta

<table>
<thead>
<tr>
<th>Points to discuss</th>
<th>Results</th>
<th>Responsible for follow up /dead line</th>
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<tbody>
<tr>
<td>1. Introduction</td>
<td>• Short introduction from Dr. Hildegard regarding her task and the background of the consultancy which is mainly to make suggestion and recommendation on MNH &amp; referral system improvement based on mortality report from Lombok Barat</td>
<td></td>
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</tbody>
</table>
| 2. Presentation   | • Presentation from the preliminary of consultancy report  
• It is highlighted the need to give more attention of the equipment maintenance system as part of routine service.  
• There is also need attention to the use of partographs not only for reimbursement but as a tool for observe the delivery and part of referral system at different setting.  
• General recommendation is given to SISKES (initiate inter sectoral approach through advocacy), counter part which focus on improving maintenance system and also for political authorities.  
• Establishing a workgroup to develop a standardized questionnaire for maternal and infant death and data gathered from it could be use for statistical purposes for the long run program is one of the immediate specific | |
### Points to discuss

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<tr>
<td><strong>3. Discussion</strong></td>
<td><strong>recommendation</strong></td>
<td></td>
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<tr>
<td></td>
<td>• The standardized questionnaire should be apply in piloted districts – Lombok Barat and adapted the format throughout the province. The survey is not meant to be action spot but more to collect questionnaire to see trend 7 patterns and developed plan of action.</td>
<td>Dr. Hilda answer that if we do pure facility base approach then we might missed some aspect to see problems from community on deciding the referral which contribute on the patient condition before reach the health facility</td>
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<tr>
<td></td>
<td>• Apply the principles of QM cycle for maternal and infant mortality surveillance</td>
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<td>• Pak Abdullah agree on the question on quality of service as he did some survey currently and found out that less than 50% of mother attending ANC does not have sufficient time for consultation. He also found that 60 – 65% of mother in Lombok Barat don’t know much about the content of Buku KIA. He also admitted that during supervision activity, they have lack of interest to the quality of equipment in regard to maintenance service. No calculation has been made to see the cost efficiency of maintenance versus new purchase.</td>
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<td></td>
<td>• Pak Abdullah also ask the meaning of doing verbal autopsy using facility base approach with community aspect</td>
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<td></td>
<td>• Agus Wijaya mentioned that sometimes the district/provincial authority forget the current condition of maternal &amp; neonatal health here in NTB is still an impact of malnutrition condition which happen on the 90’s. He propose that district need to improve their capacity to analysis the data in order to find root causes and then presented to decision maker to get sufficient budget. We must see the root causes and not just the input given.</td>
<td>Dr. Hildegard gave an example of prematurity. From many references it is link to social economy problems; therefore it is multi sectoral problems. But it is long term issues. What should we know to improve the situation for</td>
</tr>
<tr>
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<td>• For referral system, Agus Wijaya said the need of coordination and communication at all level and improved the understanding of personnel on</td>
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Office: Jl. Swara Mahardika No. 16 Mataram, Indonesia  
Phone: ++62 - 370 - 647 847/ 647848 / Fax: ++62 - 370 – 635 605  
Email: health_mataram@telkom.net
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</thead>
<tbody>
<tr>
<td>4. Closing</td>
<td>Basically all audience agree with the recommendation and dr. Hildegard will finish the report. But partner request to have the report on both language (bahasa &amp; English)</td>
<td>Karina will responsible for the translation and send it to partner as soon as the report finish</td>
</tr>
</tbody>
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**Points to discuss**

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**Results**

- Dr. Djelantik from PHO highlighted the distribution of midwives as one weakness within referral system. Many referred cases are late due to many delays which occur before the patient reach the hospital or HC. It need more clear policy regarding trained personnel distribution especially midwives and not only focus on the facility.

- Dr. Djelantik, SpA fro Mataram Hospital highlighted the importance of advocacy to get sufficient budget, but he also see that most DHO is still hesitate to present their data to the parliament. He said that it is part of professional obligation for the specialist and assisting agency to help the DHO to improve advocacy capacity.

- Pak Abdullah mention again the need to consider the problems from community since we all know that the government create facility based on need and not based on demand. So need more focus on Health Promotion and Education. We also need to focus the programs which are relevant to problems. In Lombok Barat the focus on 2009 planning are:
  1. Accelerate the reduction of MMR & IMR
  2. Reduce and prevent malnutrition
  3. Prevent and do surveillance on potential outbreak diseases
  4. Improving the quality of service.

**Long terms result? ADVOCACY and intervention at different level with different approach.**

If we only look at the number of midwives, it is sufficient but not on the distribution. From the data 20% of deliveries were done in the patient house, it does not mean they were not assist by trained professional. To overcome that, it sure need policy to make more attractive benefits for midwives and doctors who is place in remote areas.

For Mataram Hospital, dr. Hildegard suggested to improve the case management in the ER.

So there is a need to add on community awareness with focus effort in specific area.

**Mataram, 2 June 2008**

Dr. Karina Widowati
Anda
SAHABAT KEL

Ruang Tunggu

Para Ibu Hendaklah Menyusukan Anak-anak-Nya Selama Dua Tahun Penuh, Yaitu Bagi Yang Ingin Menyempurnakan Penyusuan, Selagi 239

POSKO
Pelayanan Kesehatan Reproduksi

Melayani:
- Keluarga Berencana (KB)
- Pemeriksaan Infeksi Saluran Reproduksi
- Kesehatan Ibu dan Anak / Pemeriksaan Cacingan
- Konsultasi Kespro

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