



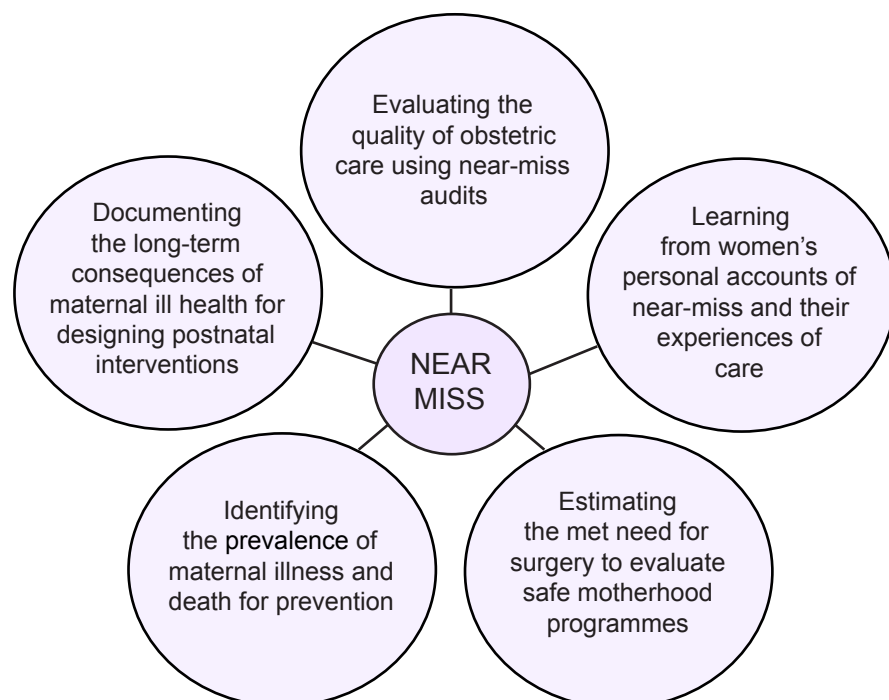
Maternal near-miss

A valuable concept for improving safe motherhood in low income countries

Maternal near-miss refers to situations where women experience severe life-threatening obstetric complications during pregnancy, delivery or post pregnancy which they survive either by chance or because they receive good care at a facility. Cases of near-miss occur in larger numbers than maternal deaths - it has been estimated that up to 9 million women survive obstetric complications every year, and the consequences of these may be permanent and wide-reaching¹. Thus, the concept has become increasingly important for public health scientists working in maternal health, in particular those who seek to better understand the causes of maternal morbidity and death.

This briefing paper demonstrates some of the different ways that the near-miss concept has been used, drawing on examples from a team of researchers based at the London School of Hygiene & Tropical Medicine (LSHTM) and more recently supported by the Towards4+5 Research Programme Consortium. Uses of near-miss include: reviews of near-miss cases in audits to improve the quality of obstetric care; in-depth interviews with women who nearly died to understand delays in seeking, reaching and receiving appropriate care; comparing near-miss cases with normal deliveries to identify the determinants of morbidity and to document the consequences of maternal ill-health; and quantifying the met needs for life saving obstetric surgery to evaluate maternal health interventions. This evidence has helped generate new knowledge and solutions for improving safe motherhood in several low income countries.

The uses of maternal near-miss in health research:



Evaluating the quality of obstetric care using near-miss audits

Near-miss audits are increasingly used to improve the quality of obstetric care in developing countries. Clinical audits aim to identify deficiencies in care and establish measures to overcome these. Different clinical audit approaches exist including individual case reviews, confidential enquiries and criterion-based assessments. Investigations of near-miss cases are useful for several reasons: they are more common than maternal deaths enabling a more detailed quantitative analysis of risk factors and determinants; they may be less threatening to providers than reviews of maternal deaths which are more likely to assign blame; and, as will be shown, they can be supplemented with information gained through interviews with women and their relatives and take their concerns into account.

Researchers at LSHTM have tested, with their partners, the feasibility of near-miss audits in several African countries including Cote d'Ivoire, Ghana, Morocco and Benin². In these audits, areas of deficiencies in care were identified through a chronological (gate-to-gate) approach, which reviewed the appropriateness of care from the time the woman arrived in the hospital to the time she was discharged. Audits also helped to identify areas where quality of care could be improved through, for instance, the development of protocols and guidelines, the allocation of new resources for emergency drugs and re-organisation of staff rosters.

This research has been documented in a World Health Organization publication entitled "Beyond the Numbers" – a guide translated in many languages for health professionals, health-care planners and managers working in maternal and newborn health³. It shows different approaches for reviewing maternal deaths, and developing an understanding of why they happened and how they can be averted. Workshops, which aim to introduce the guide and demonstrate how audits can be used as tools for improving clinical management and quality of care, have also taken place in many parts of the world.

Learning from personal accounts of near-miss and experiences of care

In-depth interviews with women who survived a near-miss event or with members of their family have generated important evidence about the factors that contribute to delays in accessing obstetric care. In safe motherhood literature, delays are commonly divided into three consecutive time periods: the first delay in deciding to seek medical care on the part of the individual or family; the second delay in reaching a facility; and the third delay in receiving adequate care.

A cochrane review implies that audit is moderately effective in improving the quality of health care. However, which audit approach is most cost effective?



Research is currently assessing the effectiveness and cost effectiveness of facility-based audits in improving the responsiveness of West African hospitals to obstetric emergencies in Burkina Faso, Benin and Niger. Two types of facility-based audits are being examined and compared: criterion-based clinical audits (CBCA) and patient-centred case reviews (PCCR) of near-miss women.

36 hospitals have been randomised into the three trial arms CBCA + EmOC training vs. PCCR + EmOC training vs. + EmOC training only. The outcome variables are (1) quality of EmOC score, (2) delay decision-start in emergency caesarean sections, (3) perinatal mortality. The research also aims to identify the barriers and facilitators for effective facility-based audits. Results will be reported in 2011.

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A review of literature on near-miss cases found that in sub-Saharan Africa, a high proportion of women who arrived at hospital were already in a life threatening condition, and highlights the significance of the first two delays in contributing to maternal morbidity and death⁴. Interviews with women reveal a range of interconnected factors that explain the delays including: gender issues (women's lack of decision making power regarding prenatal care and place of delivery); perceptions of illness (not recognising the severity of the symptoms); costs or poverty (prohibitive user fees or high cost of transport) and a lack of

facilities or providers to treat the patient.

Interviews are also powerful tools for understanding women's perceptions about the quality of care they received. For example, personal accounts of women at a hospital in Benin exposed several problems including long delays, neglect, poor hygienic conditions and dysfunctional working relationships between staff. These are problems that might not have been identified through examination of case notes alone.

The information obtained from women's personal accounts has been used to identify solutions to reduce delays in accessing care. For example, research from Afghanistan highlights the need for renewed focus on uptake of antenatal care as such sessions appear to be successful in encouraging women to use health facilities for delivery and to present early in hospital when complications arise⁵.

Insights on quality of care provided by a near-miss sepsis patient in an African hospital

“One day, my husband was with me, when a doctor came to visit and talk to us, but when he tried calling the others [doctors, hospital staff] to come over, no one wanted to; they all refused because they would say – and this, my husband heard clearly with his own ears – that they did not want to venture in this ‘state of affairs’. They said that they would not deal with a problem created by another physician. They refused and did not really come”

Identifying the prevalence of maternal morbidity

Retrospective interviews with women have been tested as a tool to obtain data on the prevalence of maternal ill-health. In South Benin, the near-miss concept was used by researchers to identify women who had had severe obstetric complications in the past, to document their recall of the events through face to face interviews and compare these with hospital records. The questionnaire was able to detect, with some accuracy, eclamptic seizures, abnormal bleeding in the third trimester and all episodes of bleeding within a period of 2 years. The survey was less successful in detecting less recent bleeding, postpartum infections or difficulties experienced during labour. This is because many women whose medical records indicated “uncomplicated childbirth” reported complications during the interview.

Whilst incorporating women's reports of obstetric complications into household surveys would be

particularly useful in settings where health-services coverage is low, potentially large errors in women's self-reporting (particularly among women with uncomplicated childbirth) means that the questionnaire could not provide accurate data on the prevalence of obstetric complications.

Estimating the met need for life saving surgery to evaluate safe motherhood programmes

Evaluating the impact of interventions that aim to increase the coverage of emergency obstetric care (e.g. insurance schemes), requires indicators and targets against which performance can be measured. The met need for emergency obstetric surgery is one such indicator that has been estimated to show levels of health-facility utilisation in several settings in Asia and Africa and to document inequalities in access to care. Such facility-based data, which reveals not only the huge number of near-miss cases but also any variations in access to life-saving surgery, are powerful sources of information for guiding safe motherhood policies and advocating for more resources to ensure that facilities can adequately respond to maternal emergencies.

Documenting the costs and consequences of obstetric complications

In Bangladesh, Burkina Faso and Benin, longitudinal research has tracked near-miss women and their infants for one year after delivery and compared a range of health, economic and social indicators with women who experienced uncomplicated births. The aim was to document the long lasting effects of severe obstetric events on women's health and life. In Burkina Faso and Benin it found that the consequences of near-miss events can be substantial: infants born to women with severe obstetric complications were more likely to die after hospital discharge up to a year after birth, and women who initially survived complications were also more likely to die from causes directly related to their complications. Further, near-miss women who experienced a pregnancy loss or whose babies died were at risk of mental health problems and more often experienced marital problems and spousal abuse.

The research also draws attention to the high burden of health care costs faced by women who require emergency obstetric care. In one medical facility in Burkina Faso, the cost of a caesarean section was 63,001 CFA (£64.88) – over a quarter of annual per capita income. In many cases, women and their families faced substantial difficulties paying for hospital fees and often resorted to selling assets, borrowing from family members or accruing new debt.

Conclusions

This briefing paper demonstrates the considerable potential of the near-miss concept for researchers, policy makers and programmers working to improve safe motherhood. In particular, documenting women's experiences of receiving emergency care and of coping with the long-term consequences of obstetric complications helps reveal the barriers to access and quality of care problems that often cause maternal deaths, and which interventions are appropriate to overcome these. Recounting these experiences in public arenas provides compelling accounts that have been used to advocate for better coverage of health facilities and to support efforts to remove user fees for emergency obstetric care.

Over several years spent studying, applying and refining the near-miss concept, researchers have developed significant expertise that has informed policy and practice at international and national levels

including the UK All Party Parliamentary Group on Population, Development and Reproductive Health and World Health Organization technical working group on maternal near-miss. Audit processes that were implemented in several African hospitals have been simplified and sustained, and have been used to inform quality assurance guidelines and practices around the world. Current research as part of the AUDOBEM project hopes to add new knowledge by showing which audit approaches are most cost-effective in low-income settings.

Currently, researchers are contributing towards a process of finding a standard definition of maternal near-miss that is being coordinated by the World Health Organization. Although challenges remain, it is hoped that a standard definition and criteria for identifying near-miss cases will enable researchers to use the concept more widely, for instance to compare cases between facilities and over time.

References and further reading

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About Towards 4+5

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