

Participants training manual

Training programme for quality improvement for maternal & newborn health

3rd QI training workshop for health care providers



Partnership for Reviving Routine
Immunisation in Northern Nigeria;
Maternal Newborn and Child Health Initiative

www.prrinn-mnch.org

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ABBREVIATIONS

ANC	Ante Natal Care
ARV	Anti Retro Viral
BEmNC	Basic Emergency Obstetric and Newborn Care
CBA	Criteria Based Audit
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CQI	Continuing Quality Improvement
CS	Caesarean Section
DFID	Department For International Development (UK)
EmONC	Emergency Obstetric & Newborn Care
ENC	Essential Newborn Care
FANC	Focused Ante-Natal Care
FGD	Focus Group Discussion
FMOH	Federal Ministry Of Health
FP	Family Planning
HF	Health Facility
HIV	Human Immuno-deficiency Virus
HMIS	Health Management Information System
HPI	Health Partners International
LGA	Local Government Area
LSS	Live Saving Skills
LSTM	Liverpool School of Tropical Medicine
MCH	Maternal and Child Health
MD	Maternal Death
MDG	Millennium Development Goals
MDR	Maternal Death Review
MMR	Maternal Mortality Ratio
MNH	Maternal & Newborn Health
MNCH	Maternal Newborn and Child Health
NPHCDA	National Primary Health Care Development Agency
NGO	Non Governmental Organisation
PAC	Post Abortion Care
PHC	Primary Health Care
PMTCT	Prevention of Mother to Child Transmission (of HIV)
PNC	Post Natal Care
PNDR	Peri Natal Death Review

PRRINN	Partnership for Revitalising Routine Immunisation in Northern Nigeria
QI	Quality Improvement
RH	Reproductive Health
SBA	Skilled Birth Attendance
SHSMB	State Health Services Management Board
SMOH	State Ministry of Health
SPHCMB	State Primary Health Care Management Board
SRH	Sexual and Reproductive Health
TBA	Traditional Birth Attendant
ToR	Terms of Reference
TQM	Total Quality Management
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

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1. INTRODUCTION

Nigeria has some of the highest rates of maternal, neonatal and child mortality in the world. These mortality rates show wide disparities between the north and the south. Although the national IMR and U5MR are 75 and 157 per 1000 live births respectively, rates in the North West geopolitical zone, for example, are 91/1000 (IMR) and 217/1000 (U5MR) respectively. Maternal mortality ratios in the North are far above the national figure of 545/100,000 and are unacceptably high (NDHS, 2008). A population-based study of maternal mortality in Northern Nigeria over the 1990's found a Maternal Mortality Ratio (MMR) of 2,420 deaths per 100,000 live births (Adamu, 2003), while a household survey conducted by the PRRINN-MNCH programme in 2011 in four northern states reported a MMR of 1,271 maternal deaths per 100,000 live births (Doctor, Findley, Afenyadu, 2011).

Key strategies to reduce maternal and newborn mortality are, increasing access to skilled attendance at birth for all pregnant women and to Emergency Obstetric Care (EmOC) for those mothers who experience life-threatening complications during pregnancy, childbirth and the post-partum period. Essential Newborn Care (ENC) is crucial to save newborn lives. Also increasing access and utilisation of Family Planning (FP) services and Focused Antenatal Care (FANC) are important to reduce maternal mortality, as is prevention of unsafe abortion. To increase access and utilisation of these services health facilities which provide such services must be available and accessible. This requires functioning health systems, which ensure that sufficient professional staff is available to provide these services and that they have the necessary knowledge and skills as well as the enabling environment to do so. This includes adequate infrastructure, equipment, drugs and other medical supplies. In addition to this, communities need to be sensitised on Maternal Newborn & Child Health (MNCH) issues and mobilised to ensure that women are supported to use essential health services and socio-cultural determinants which affect maternal and newborn health are addressed.

However, increasing availability and access to skilled attendance at birth, EmONC, FANC and FP services is not enough to reduce mortality rates. In order for such services to be effective in reducing maternal & neonatal mortality and morbidity and in attracting clients and patients and increase utilisation of essential MNCH services, we must ensure adequate and acceptable quality of care. This can be achieved by introduction of Quality Improvement (QI) processes at MNCH facilities, which can make a significant impact on pregnancy outcomes and service utilisation.

Confidential enquiries into maternal deaths and analysis of findings from facility-based maternal death reviews in various countries have shown that across the world a considerable proportion of maternal death cases result from avoidable factors and sub-standard care. In the latest edition of "Why Mothers Die 2000-2002: Sixth report of the confidential enquiries into maternal deaths in the UK" it was reported that 67% of direct maternal deaths in the UK were the result of sub-standard care and 47% of these were considered to be major, where a different treatment might have prevented the death. The 3rd report of confidential enquiry into maternal deaths in South Africa 2002-2004 found that 36.7% of maternal deaths were clearly avoidable within the health care system (Moodley & Pattinson, 2006). In another study in West Africa it was found that 69% of direct maternal deaths were the result of sub-standard care (Bouvier-Colle, 2001).

The previous figures indicate that in order to reduce maternal and perinatal mortality it is important to improve quality of MNH care within health facilities. The World Health Organization (WHO) advises, to go beyond the numbers in order to reduce maternal mortality and

recommends several methods to improve quality of care of MNH services (WHO, 2004). These include facility and community-based maternal and peri-natal death reviews, criteria-based audit, working with standards and confidential enquiries into maternal and perinatal deaths. Several studies have demonstrated that maternal and perinatal death reviews, followed by remedial action, can improve quality of care and reduce maternal and perinatal mortality (Pattinson, 2009).

Against this background the Partnership for Reviving Routine Immunisation in Northern Nigeria and Maternal Newborn and Child Health (PRRINN-MNCH) programme initiated in 2010 ongoing QI processes in the EmONC facilities which were supported by the programme. The programme developed a training programme of three QI workshops. These QI workshops aim to build capacity of health workers to improve quality of care of MNCH services at their health facility in an ongoing manner.

The QI training programme has been developed and initiated with technical support from staff of the Maternal & Newborn Health (MNH) Unit of the Liverpool School of Tropical Medicine (LSTM), assisted by a Consultant Obstetrician from the Federal Medical Centre in Gusau, Zamfara state.

This training manual contains the content of the 3rd QI workshop for health care providers.

2. PURPOSE AND APPROACH OF THE QI TRAINING

2.1 Purpose of the QI training

The purpose of the QI training programme is to initiate ongoing QI processes in health facilities, whereby in a continuing process these facilities identify quality of care problems, analyse the root causes and come up with interventions to address these problems and improve quality of care with the ultimate aim to reduce maternal, peri-natal and child mortality and morbidity and increase client, patient and staff satisfaction.

2.2 Expected Outcomes

It is expected that health care providers and health service managers who participate in the QI workshops will:

- Become aware of the importance of quality of care for the reduction of maternal, newborn and child mortality and reduction of morbidity;
- Become more knowledgeable about the meaning of quality, quality of care and approaches and methods which can be used to improve quality of care of MNCH services;
- Be able to assess quality of care in health facilities, considering different perspectives, aspects and dimensions of quality of care, analyse root causes and develop interventions to assess the identified quality of care problems and monitor and evaluate their effectiveness in improving quality of care.
- Be able to initiate, organise and conduct facility-based maternal and peri-natal death reviews as well as to develop standards for quality of care for various health services, develop criteria for audit of MNCH service provision and conduct criteria-based audit;
- Establish QI teams in their health facilities, which will be responsible for assessing quality of care, initiating and monitoring QI activities and evaluating their effectiveness in improving quality of care.

2.3 Approach

The QI training consists of a series of 3 workshops, each lasting between 2 and 4 days. The workshops are conducted at 3 month intervals. In this way participants gradually build up their knowledge and skills for QI. Each subsequent workshop starts with a recap of the key issues discussed during the previous workshop, reinforcing the earlier acquired knowledge. This is followed by sharing of experiences with QI. At the end of each workshop participants discuss and agree on the next steps for the way forward after the workshop. In between these workshops participants apply the knowledge and skills developed during the workshops within their own health facilities, assessing quality of care, identifying quality of care problems, analysing the root causes, and initiating QI activities.

After the first QI workshop QI teams are formed in the health facilities, which are responsible to lead the QI activities in their facilities. These QI teams report to the Management of the health facility. QI teams apply the knowledge and skills acquired during the workshops within their own health facility by identifying quality of care problems, analysing the root causes, using the QI methods which have been explained during the workshops, and initiating, monitoring & evaluating activities to improve quality of care.

Within 2 weeks after each QI workshop, the members of the QI teams who attended the workshop must organise a QI step-down training for the other members of the health facility QI team. In this they will be supported by one of the QI trainers from the state.

To support the health facility QI teams and institutionalise QI processes it is important that these teams receive regular supportive supervision, which should start already after the first QI workshop and continues in between the various QI workshops.

3. STRUCTURE AND CONTENT OF THE QI WORKSHOPS

3.1 Structure of the QI Training Programme

The QI training is delivered in a series of three QI workshops.

3.2 General Content of the QI Workshops

The first QI workshop will make participants familiar with the concepts of quality and quality of care and they will learn why quality of care is important for MNCH. During the workshop the different dimensions and perspectives of quality of care are explored, as well as the different aspects of quality of care from a health systems perspective. General approaches to improve quality of care are discussed as well as specific QI methods which have been used to improve quality of MNH services. Participants are encouraged to form QI teams in their health facilities, which will be responsible for quality of care. The composition and roles & responsibilities of these QI teams are discussed. Finally methods and tools to assess quality of care are presented. At the end of the workshop participants are asked to inform other staff at their health facility, particularly the Management, about the proceedings of the workshop, to establish a health facility QI team, conduct a QI step-down training for other members of the health facility QI team, and carry out an assessment of quality of care in their health facility.

The 2nd QI workshop, after a recap of the content of the previous workshop, starts with sharing of experiences. Each QI team presents what they have done since the 1st workshop, what quality of care problems they have identified, as well as their root causes, what they have done

to address these issues, what was achieved, what challenges they faced in improving quality of care and what lessons they have learnt. The main content of the 2nd QI workshop includes facility-based Maternal Death Review (MDR) and Peri-Natal Death Review (PNDR) as well as how to measure quality of care and how to monitor and evaluate QI activities. With a case scenario participants are introduced to the “three delays model”, which is used as an analytical framework for MDR and PNDR. It is explained how MDR and PNDR can help to understand why mothers and babies are dying and to identify weaknesses in the provision of MNH care, which have to be analysed and translated into action in order to address the shortcomings in care. The concept, principles, advantages and limitations of these methods are explained and participants conduct a MDR and PNDR in small groups, using case scenarios, in order to better understand the process. Data recording and reporting forms for facility-based MDR and PNDR are presented and reviewed. The rest of the workshop is spent on two main issues: 1) How to measure quality of care; 2) How to monitor & evaluate QI activities.

The 3rd QI workshop also starts the 1st day with a recap of the content of the previous workshop, sharing of experiences and discussion of issues arising. In particular, workshop participants share their experiences with initiating and conducting MDR and PNDR. Workshop participants are asked to bring cases of maternal and perinatal deaths which have been reviewed and some of these will be presented and discussed on the 2nd day of the workshop. The next workshop topic is, working with standards to improve quality of care, explaining how to set and use standards. The workshop participants develop and formulate in small groups minimum standards for various aspects of MNCH services, which are further discussed in a plenary session. After this the QI method of Criteria-Based Audit (CBA) is introduced. During small group work participants explore what aspects of service delivery and care can be audited and how to develop criteria for audit, which will form the audit checklist. They also carry out two practical criteria-based audit exercises in small groups.

4. CONTENT OF THE 3rd QI WORKSHOP

4.1 Workshop Objectives

The objectives of the 3rd QI workshop are as follows:

- Share experiences to improve QI activities and MDR and PNDR.
- Learn how to set and use standards for MNCH care and service provision.
- Learn the principles of criteria-based audit.
- Explore what aspects of MNCH care & services can be audited.
- Learn how to set criteria for audit of MNCH care and service provision.
- Learn how to conduct criterion-based audit in a health facility.

4.2 Workshop Programme

DAY 1:

08.30 am	Registration
08.45 am	Welcome address and opening prayer
08.45 am	Introductions and ground rules Objectives and programme of the workshop
09.15am	Pre-test
09.30 am	Recap of content of 3rd QI workshop
10.15 am	Tea/coffee break
10.30 am	Reports of QI teams on progress with QI activities and sharing of experiences, including experiences with initiating MDR and PNDR (20 minutes per group)
13.00 pm	Prayers + Lunch
14.00 pm	Report of QI teams on progress with QI activities, and sharing of experiences, including experiences with initiating MDR and PNDR (20 minutes per group)
15.30 pm	End of day evaluation form Tea break & closing prayer

DAY 2:

08.30 am	Registration + opening prayer Presentation of programme for day 2
08.45 am	Recap of day 1
09.15 am	Discussion of emerging issues of the previous day.
10.30 am	Tea/coffee break
10.50 am	Presentation and discussion of MDR and PNDR cases
12.30 pm	Introduction to setting and using of standards
12.45 pm	Reviewing an example of a standard for MNCH service provision
13.00 pm	Prayers and lunch
14.00 pm	Group work on setting standards for MNCH service provision
15.00 pm	Presentation of results of group work
15.30 pm	Prayers and tea break
16.00 pm	Presentation of results of group work
16.45 pm	End of day evaluation form Closing prayer

DAY 3:

- 08.30 am Registration and opening prayer
Presentation of programme for day 3
- 08.45 am Recap of day 2
- 09.15 am Introduction to criteria-based audit
- 09.30 am Group work on identifying topics for audit
- 10.00 am Presentation of results of group work
- 10.30 am Tea/coffee break
- 10.50 am Further introduction to criteria-based audit
- 11.00 am Review of case definitions for obstetric complications
- 11.20 am Steps of the audit process
- 11.40 am Introduction to selection of criteria for audit
Group work on selection and formulation of audit criteria
- Antenatal care booking visit
 - Care during labour and delivery, using the partograph
 - Women-friendliness of intra-partum care
 - Newborn care during 24 hours after birth
 - Postnatal care
- 12.40 pm Presentation of results of group work (group 1)
- 13.00 pm Prayers and lunch
- 14.00 pm Presentation of results of group work
- 14.45 pm Group work: Selection of audit criteria for clinical audit of EmOC
- Primary PPH
 - Puerperal sepsis
 - Pre- and post-operative care of a patient with a caesarean section
 - Eclampsia
 - Blood transfusion
- 15.45 pm End of day evaluation form
Prayers and tea break

DAY 4:

08.30 am	Registration + opening prayer Presentation of programme for day 4
08.15 am	Recap of day 3
08.45 am	Presentation of results of group work of previous day (15 minutes per group)
09.45 am	Introduction to group work: audit of the use of the partograph Group work on criteria-based audit of the use of the partograph
10.30 am	Tea/coffee break
10.40 am	Presentation of results of group work.
11.00 am	Next steps for the way forward after this workshop
11.45 am	Post-test and filling in workshop evaluation form
12.00 pm	Closing remarks and handing out of certificates
12.30 pm	Prayers and lunch

4.3 Detailed Workshop Content

DAY 1

Recap of the content of the 2nd QI workshop

Key issues of the 2nd QI workshop are briefly reviewed.

Presentations from Health Facility QI Teams

Representatives from each health facility QI team give a brief presentation on what they have done since the previous workshop, reporting on priority quality of care problems which they have identified, their root causes, the QI activities they have planned and managed to carry out, achievements and challenges and lessons learnt. Reports include experiences with maternal and perinatal death reviews (MDR and PNDR). During the presentations and discussions the different QI teams share their experiences.

DAY 2

Recap of Previous Day and Discussion of Emerging Issues

After a brief recap of what participants learnt the previous day, some emerging issues are discussed in more detail.

Presentation and Discussion of MD and PND Cases

Representatives from hospitals which have reviewed maternal and peri-natal death cases present one MD case and one PND case, indicating the key findings, the causes and contributing factors of the death, the modifiable factors and shortcomings in care which were identified, the action plan which was formulated and the achievements of implementing the

action plan. Workshop participants are given an opportunity to ask questions and give comments. PHC facilities which have conducted PNDRs are also given an opportunity to present a case.

Health facility QI teams should ask the PHC Director of their LGA to organise quarterly meetings, at which selected cases of MDs and PNDs are presented and discussed together.

Introduction to Setting and Using of Standards

Standards are statements of the expected quality of care that a service aims to offer. They specify what is expected of health care providers in terms of service provision, treatment and care. Thus standards provide guidance to health care providers on what services to provide and how. They are evidence-based and respect human rights. Standards also provide an evaluation framework and help to identify shortcomings in quality of care. They can be used by QI teams, health workers themselves and by supervisors during supportive supervision. Standards can be related to:

- S: structure (what has to be in place)
- P: process (what has to be done and how)
- O: outcomes (what is to be achieved)

The purpose of standards is:

- To assist health care planners and programme managers in planning and management.
- To provide guidance to health care providers on effective service delivery and patient care.
- To provide a bench mark to assess quality of care and current practice.
- To maintain and improve quality of care.
- To increase patient, client and the community's satisfaction with health care

Examples of standards

- A woman's right to privacy and confidentiality is respected.
- Every woman in labour in a health facility is monitored with a partograph and active management of the third stage is practiced.
- All staff implement infection prevention measures.
- At each antenatal visit the blood pressure is measured and position of baby and foetal heart are assessed.

When formulating health care standards it is helpful to keep in mind the following key components of standards:

- Title (which identifies the standard)
- Standard statement (specific issue(s) to be addressed by the standard)
- Standard objectives
- Structure aspects (resources for provision of care)
- Process aspects (practices)
- Outcome aspects (achievements, deliverables)
- Audit indicators
- Rationale for the standard
- References to evidence-based literature

Structure aspects of standards refer to the resources that need to be in place, such as:

- Infrastructure
 - Buildings and space
 - Water supply
 - Electricity supply and light source
 - Drainage and waste disposal
- Human resources
- Essential drugs
- Equipment and supplies
- Protocols and guidelines

Process aspects of standards refer to what has to be done in terms of treatment, care and interpersonal communication, such as:

- Counselling
- Providing information
- Obtaining informed consent
- Assessment of a patient
- Prescription of treatment
- Providing treatment
- Providing nursing care
- Monitoring of patient's condition
- Psycho-social support

Outcome aspects of standards refer to what has to be achieved, such as:

- Early diagnosis
- Reduced case fatality
- Reduced incidence of complications
- Reduced delay in receiving care and treatment
- Improved client/patient satisfaction
- Improved knowledge
- Improved health seeking behaviour
- Increased service utilisation
- Reduced unmet need for EmONC

Steps in setting standards include:

- Form a multidisciplinary review group.
- Select service component or topic for the standard.
- Review available evidence and existing policies and guidelines.
- Jointly develop the standard, with the following key components:
 - Objectives
 - Process criteria
 - Structure criteria
 - Outcome criteria
- Get standard officially approved
- Disseminate standard

Useful references for setting standards and development of criteria for audit of MNCH services are the following documents:



Table 1: Example of a standard from Kenya for provision of Post Abortion Care

Structure	Process	Outcome
Room set aside for evacuation (MVA)	History taken and client examined	Reduced incidence of complications
MVA set and protocols available for MVA	Uterus evacuated using MVA or D+C as per protocol	Reduced delay in case management
Room with privacy for counselling	Broad spectrum antibiotics given	Reduced case fatality
FP services available, including contraceptives	Post abortion counselling given, including FP and HIV counselling	Reduced recurrence of abortion
Screening services for STIs available	HIV testing offered	Women and community aware of dangers of unsafe abortion and signs of complications
Staff available who are trained in PAC	Blood transfusion if Hb < 7 gr%	

Reviewing of an Example of a Standard for MNCH Service Provision

In the PRRINN-MNCH programme simple and practical minimum standards have been developed for MNCH services, which are easy to use as a reference. They have a simplified format with objectives and formulated standards for structure, process and outcome aspects of quality. One of the MNCH standards is distributed to the workshop participants as an example and reviewed.

Group work on setting standards for MNCH services

In small groups workshop participants develop standards for a particular component of MNCH services. These standards should include objectives and statements related to structure process and outcomes.

For the group work each group is given as a reference a copy of the WHO book “Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice”. They can also use copies of the WHO manuals on obstetric and newborn care.

A copy of the set of standards for MNCH and RH service delivery is distributed to workshop participants for each health facility.

DAY 3

Introduction to Criteria-Based Audit (CBA)

Criteria-based audit (CBA) is a method to **assess the performance** of health care providers or health services by auditing or assessing certain aspects of treatment or care using specific evaluation criteria. The criteria are based on standards.

The methods discussed in the previous workshop reviewed cases of patients who died or almost died. CBA is different and is concerned with actual quality of care and aims to assess performance of health care providers and quality of services, which are evaluated (audited) and compared with standards, which describe what is supposed to be done and how. The audit is done by **using a checklist** with criteria, which are the check points.

Definition of Criteria-Based Audit

“An objective, systematic & critical analysis of the quality of care against set criteria:

We can assess performance by looking at records, by observing health workers performance or observing the health facility and its working environment. Each audit looks at a specific aspect of care, which is assessed by using specific criteria, which are based on standards, guidelines or protocols.

Sets of criteria are not the same as protocols. A protocol or clinical guideline sets out step by step in detail all actions to be taken. Criteria are clearly defined selected practices in patient care or treatment or related to aspects of health care management, which are essential, evidence-based and which can be measured and are realistic for the level of care. CBA is basically assessing performance with a checklist.

The objective of CBA is to improve quality of care by increasing the number of ‘best practices’ used in the health facility. CBA can improve clinical and nursing practice; it can promote rational use of limited resources and it can improve staff morale and motivation.

To carry out CBA of care provided to patients by reviewing patient records we need:

- Evidence-based standards that are the source of the criteria used to assess performance.
- A checklist with specific criteria for audit .
- Written records (‘if it is not written down, it did not happen!’)

The panel below lists the steps for preparing for the audit process.

Preparing for the audit process

1. Form audit team
2. Select topic for audit
3. Define cases / unit for analysis
4. Set criteria of evidence-based good care
5. Identify information sources
6. Design data extraction sheet

The health facility QI team could be the audit team. Possible membership includes the health facility in charge or hospital director, the hospital administrator, the in charge of the maternity ward, the MCH clinic and the gynaecological ward, doctor(s), nurse-midwife(s), other health professionals, such as a lab technician, a pharmaceutical technician, as well as cleaners.

What can be audited?

CBA is not restricted to audit of clinical care, which is known as clinical audit. Different aspects of health care provision can be audited such as various aspects of service provision, clinical obstetric & midwifery practice, inter-personal communication, management and organisation of health services as well as human rights aspects.

Workshop participants are asked to brain storm in small groups for 30 minutes on what can be audited.

<p>Possible topics for Criteria-Based Audit</p> <p>Related to RMNCH service provision:</p> <ul style="list-style-type: none"> • Antenatal care • Care of mother in labour • Newborn care • Pre-operative care (preparation for C/S) • Post-operative care (care after C/S) • Post partum care • Post abortion care • Blood transfusion service • Family planning services • Adolescent-friendly health services

<p>Possible topics for Criteria-Based Audit</p> <p>Related to clinical obstetric & midwifery care, e.g. management of obstetric complications, such as:</p> <ul style="list-style-type: none"> • Puerperal sepsis • PPH • (Pre-)eclampsia • Obstructed labour • Ruptured uterus • Patient with a caesarean section • Anaemia in pregnancy • Use of partograph

Some of these topics can be further narrowed down for more detailed audit, such as specific aspects of ANC like counseling, health education, history taking, clinical examination.

For clinical audit, such as assessment of the management of emergency obstetric complications, we take a number of patient case notes for review - e.g. 10 or 20 - and scrutinise the case notes whether the selected criteria for proper care and treatment are met.

<p>Possible topics for Criteria-Based Audit</p> <p>Related to management and organisation:</p> <ul style="list-style-type: none"> • Record keeping • Referral system • Availability of essential life-saving drugs • Waiting time before being attended • Delay between prescribing and receiving treatment, e.g. blood transfusion, C/S • Punctuality of staff • Cleanliness of health facility • Infection prevention • Waste disposal

<p>Possible topics for Criteria-Based Audit</p> <p>Related to human rights aspects:</p> <ul style="list-style-type: none"> • Woman-friendliness of intra-partum care • Is treatment explained to patients • Are patients treated with respect and in a welcoming manner • Is confidentiality maintained • Is privacy ensured during ANC consultation • Is informed consent sought for certain procedures (e.g.: surgery, blood transfusion, HIV testing)
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Case Definitions

If we carry out CBA of the management of certain types of patients we call this clinical audit. In order to identify cases we need case definitions, which help us which case notes to include in the CBA. The IMMPACT project in Ghana and Jamaica formulated case definitions of emergency obstetric complications. For example, the case definition for cases of primary post partum haemorrhage has as essential feature “genital tract bleeding within 24 hours of delivery” and as additional features at least one of the following; “estimated blood loss more than 500ml” or “any blood loss with clinical signs of shock”, which can be further defined as a pulse rate of more than 100 or a systolic blood pressure below 90.

A list of case definitions of major obstetric complications are presented in annex 1. This list was adapted from a list, which was developed in a project of IMMPAC, a research group in Aberdeen. Similarly case definitions can be drawn up for newborn health problems or other clinical conditions.

Criteria for CBA

A set of selected criteria is used as a checklist to assess the quality of health services or of the performance of health workers. A data extraction sheet is used as the actual checklist with the selected criteria as check points. Standards and guidelines (national, international) can be used as a reference to formulate criteria, such as WHO’s “Managing complications of pregnancy and child birth”.

What are criteria?

Criteria are systematically developed statements that can be used to assess the quality of specific health care decisions, services, treatment, care and outcomes.

Criteria must be:

- relevant to case management for the level of care (availability of test or treatment).
- indicative of essential practice.
- evidence-based.
- measurable from patient case notes or direct observation.
- restricted to not more than 10 per complication or practice to be audited.
- preferably developed by an expert panel

Criteria of good care can relate to: **P:** process of care (what has to be done); **S:** structure of care (what has to be in place, such as different resources); **O:** outcome of care (what is to be achieved).

Example from Ghana:

Criteria for optimal management of obstructed labour:

- Prompt delivery of foetus should be < 2hours of diagnosis.
- Urinary bladder should be drained.
- Observation chart should be maintained (pulse, BP, urine output, temperature).
- Intravenous access and hydration should be achieved.
- Broad-spectrum antibiotics should be given.
- Typing and cross-matching of blood should be carried out.

Example from Malawi:**Criteria for an effective emergency referral system for obstetric complications:**

- All referred patients come with a referral form filled in by the referring health facility.
- Ambulances and drivers are available 24/7 to transport patients.
- Health centre staff inform referral hospital through mobile phone when an emergency case is referred.
- All emergency referrals are attended to by a clinician within 30 minutes of arrival.
- Health centres receive feedback on patients referred

A list of criteria for management of common obstetric complications has been developed by the IMMPACT project in Ghana and Jamaica (Graham, Wagaarachchi, Penney et al, 2000) and is presented in annex 2.

Data Collection Sheet for Criteria-Based Audit

The audit form or data collection sheet is the checklist which is used during CBA. It makes recording of information and calculation of the audit scores easy. The PRRINN-MNCH programme has developed a simple audit form, which is presented in annex 3.

Steps of the Audit Process

- Select topic for audit
- Agree on criteria for audit
- Agree on case definition
- Identify cases
- Measure current practice
- Identify and analyse problems
- Develop solutions
- Implement changes
- Repeat measurement of practice to assess change

Selection of topics for audit depends on the quality of care problems which have been identified by the health facility QI team. Some important issues for more detailed audit may arise as a result of MDR and PNDR.

Measuring current performance is done by either review of a number of patient records from a certain period (e.g. 10) using a checklist with specific audit criteria, or by review of practice by direct observation using a checklist with specific criteria, e.g. by observing of a number of health care provider interactions with clients or patients. For each observation or patient case note each criterion is assessed whether it was done or not (by ticking Yes or No). After this, for each criterion the total of “Yes” scores is added up for all the observations. Problem areas in quality of care can be identified by criteria which have a low score.

After quality of care problems have been identified based on the findings from the CBA, (criteria with low scores) the audit team must discuss why these problems exist by analysing these problems and identifying contributing factors & root causes. This is followed by finding possible

solutions for solving the problems and tackling the root causes and selection of the most appropriate solutions, which result in an action plan. The action plan must specify what has to be done, when and by whom and must clarify who is responsible for the implementation of different activities. Finally all staff must be informed and the action plan has to be carried out. This analytical process is similar to the MDR and PNDR process.

After the agreed time that changes should have been implemented the same audit should be repeated. Then compare the findings of the 2nd audit with those of the 1st audit. Results are measured by the change in the score % of the criteria of good care. Finally, give feedback to staff about the changes in their performance and congratulate them with the achievements.

Selection of Criteria for CBA

Workshop participants learn through small group work how to select and formulate criteria for CBA.

During the first exercise they select criteria for audit of certain aspects of MNCH services, such as care during labour using the partograph, women-friendliness of intra-partum care, antenatal care booking visit, newborn care of a healthy newborn in the first 24 hours after birth.

During the second exercise they select criteria for clinical audit of the management of certain obstetric complications, such as PPH, eclampsia, septic abortion, and blood transfusion services in a general hospital. As reference material each group uses a copy of the WHO publication "Managing complications of pregnancy and child birth: a guide for midwives and doctors."

Criteria must be formulated in such a way that checking them can be answered by either "Yes" or "No".

Workshop participants can find more detailed background information on criteria-based audit in the following publications:

- WHO (2004). Beyond the numbers. Geneva, WHO.
- Graham W, Wagaarachchi P, Penney G, et al (2000). Criteria for clinical audit of the quality of hospital-based obstetric care in developing countries. *Bulletin of the WHO*; 78 (5): 614-620.
- Wagaarachchi P, Graham WP, Penney GC, McCaw-Bins A et al (2001). Holding up a mirror: changing obstetric practice through criterion-based clinical audit in developing countries. *Int J Gynecol Obstet*; 74: 119-130.
- Kongnyuy, E.J. & van den Broek, N. (2008). Criteria for clinical audit of women friendly care and providers' perception in Malawi. *BMC Pregnancy and Childbirth*, vol. 8.

DAY 4

Recap of Previous Day

As usual, after welcoming the workshop participants and the opening prayer, the 4th day of the workshop starts with a recap of the key issues discussed during the previous day.

Presentation of Results of Group Work of Previous Day

The results of the group work on CBA of aspects of EmONC are presented and discussed.

Criteria-based Audit of the Use of the Partograph

In small groups, workshop participants carry out a criteria-based audit of the use of the partograph for which they use the 10 filled in partographs they were asked to bring from their health facility. In this way they can identify weaknesses in the care of a woman during labour.

Next Steps for the Way Forward after this last QI Workshop

Because this is the last QI workshop it is very important to discuss the next steps for the way forward. Workshop participants discuss how to ensure that QI teams continue to function actively by continuously assessing and improving quality of care and evaluating the results of their activities and to ensure that QI activities will continue in the health facilities.

Regular supportive supervision of the QI teams is important. It would be useful to have QI teams at LGA and state level, which play a more leadership and supportive role in the QI process.

Staff transfers may affect the functioning of health facility QI teams, but should not lead to discontinuation of QI activities. If members of the QI team leave the health facility, they should be replaced. Particularly if the chairperson leaves the QI teams must ensure that the QI team continues and QI activities do not stop. Therefore it is good that the QI teams have a vice-chair person and secretary, who will carry on and that in the next meeting a new chair person is elected.

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ANNEXES

ANNEX 1: CASE DEFINITIONS FOR CBA OF MANAGEMENT OF OBSTETRIC COMPLICATIONS

Complication	Essential features	Additional features
Abortion-related haemorrhage	Gestation < 28 weeks.	At least one of the following: <ul style="list-style-type: none"> Vaginal blood loss > 500 ml Any blood loss with clinical signs of shock (syst BP < 90; Pulse > 100).
Ruptured ectopic pregnancy	Pregnancy outside uterine cavity with blood in abdominal cavity, diagnosed by abdominal centesis, ultrasound or laparotomy	The following may be present: <ul style="list-style-type: none"> Missed monthly period(s) and lower abdominal pain. Clinical signs of shock
Primary Post Partum Haemorrhage (PPH)	Genital tract bleeding within 24 hours of delivery	At least one of the following: <ul style="list-style-type: none"> Significant vaginal blood loss. Clinical signs of shock.
Secondary Post Partum Haemorrhage	<ul style="list-style-type: none"> Genital tract bleeding > 24 hours of delivery, but within 42 days. Gestation of foetus \geq 28 weeks. 	At least one of the following: <ul style="list-style-type: none"> Vaginal blood loss > 500 ml Soft non-involuted uterus
Antepartum Haemorrhage	<ul style="list-style-type: none"> Gestation \geq 28 weeks. Clinically observed vaginal bleeding. 	<ul style="list-style-type: none"> May have abdominal pain Uterus feels woody hard in abruption placenta Presenting part not engaged or abnormal in placenta praevia Amount of bleeding irrelevant <u>Confirmation:</u> placenta praevia – with scan or at operation abruption – retroplacental clot
Eclampsia	Generalised fits in an obstetric patient without previous history of epilepsy.	<ul style="list-style-type: none"> Elevated BP Proteinuria
Obstructed labour	<ul style="list-style-type: none"> Prolonged labour > 12 hours with adequate contractions. Caput and/or moulding. 	At least one of the following: <ul style="list-style-type: none"> Uterine tetany Offensive vaginal discharge Bandl's ring Uterine rupture Temperature \geq 37.5 °C Haematuria Clinical signs of shock
Uterine rupture	Rupture of uterus before or during labour with confirmation at laparotomy.	<ul style="list-style-type: none"> Bleeding per vagina Easily palpable foetal parts Clinical signs of shock
Puerperal sepsis	Temperature \geq 37.5°C within 42 days of delivery	At least one of the following: <ul style="list-style-type: none"> Odorous vaginal discharge Tender non-involuted uterus Clinical signs of shock
Septic abortion	<ul style="list-style-type: none"> Gestation < 28 weeks. Temperature \geq 37.5°C. History of vaginal bleeding or clinically observed bleeding. 	At least one of the following: <ul style="list-style-type: none"> Abdominal pain/tenderness Injury to genital tract Odorous vaginal discharge Tender fornices Open cervix with products of conception
Chorio-amnionitis	<ul style="list-style-type: none"> Evidence of prolonged ruptured membranes (> 24 hrs) by draining of liquor. Maternal tachycardia (P > 100) 	At least one of the following: <ul style="list-style-type: none"> Temperature > 37.5°C Odorous vaginal discharge Tender uterus

Adapted from Graham et al (2000), Criteria for clinical audit of the quality of hospital-based obstetric care in developing countries. Bulletin of the WHO; 78 (5): 614-620.

ANNEX 2: CRITERIA FOR CBA OF EMERGENCY OBSTETRIC CARE

I	Common criteria for optimal management of any obstetric complication
1	Patient's history should be documented in case notes on admission (age, parity, complications in current and previous pregnancies)
2	General clinical state on admission should be recorded (pulse, blood pressure)
II	Common criteria for optimal management of obstetric haemorrhage
1	Experienced medical staff should be involved in the management of obstetric haemorrhage within 10 min of the diagnosis Ghana: 'experienced' = medical officer with 2 years training or a practising midwife with 5 years experience Jamaica: 'experienced' = senior registrar or consultant obstetrician
2	Intravenous access should be achieved
3	Patient's haematocrit or haemoglobin should be established
4	Typing and cross-matching of blood should be performed
5	Coagulation tests should be performed if indicated (clotting time, bleeding time, platelet count)
6	Crystalloids and/or colloids should be infused until cross-matched blood is available
7	In the face of continuing haemorrhage, after infusing up to 3 L fluids, blood must be given (cross-matched if possible)
8	Clinical monitoring to detect early deterioration should be done at least every 15 min for 2 h (pulse, blood pressure)
9	Urine output should be measured hourly
10	Oxytocics should be used in the treatment of postpartum haemorrhage
11	Genital tract exploration should be performed in cases of continuing postpartum haemorrhage
12	Women with antepartum haemorrhage should not have a vaginal examination unless placenta praevia has been excluded by ultrasonography or vaginal examination is conducted where emergency operative delivery is possible

III	Criteria for optimal management of eclampsia
1	Senior medical staff should take responsibility for formulating a management plan for the patient Ghana: 'senior' = medical officer Jamaica: 'senior' = senior registrar or consultant
2	Anti-hypertensive treatment should be given to patients with severe hypertension
3	The treatment and prophylaxis of seizures should be by magnesium sulfate
4	Respiratory rate and tendon reflexes should be monitored when magnesium sulfate is used
5	Ante/intrapartum fluid balance chart should be maintained
6	Haematological and renal investigations should be done at least once (bleeding time, clotting time, platelet count, urine albumin test)
7	Ghana: delivery should be achieved within 24 h of the first convulsion Jamaica: delivery should be achieved within 12 h of the first convulsion
8	Monitoring of blood pressure and urine output should continue for at least 48 h after delivery
IV	Criteria for optimal management of obstructed labour
1	Ghana: prompt delivery of the fetus should occur within 3 h of diagnosis Jamaica: prompt delivery of the fetus should occur within 2 h of diagnosis
2	Urinary bladder should be drained
3	An observation chart should be maintained (urine output, pulse, blood pressure, temperature)
4	Intravenous access and hydration should be achieved
5	Broad spectrum antibiotics should be given in obstructed labour
6	Typing and cross-matching of blood should be carried out
V	Criteria for optimal management of uterine rupture
1	In suspected or diagnosed uterine rupture, emergency surgery should be performed Ghana: within 2 h Jamaica: within 1 h
2	Urinary bladder should be drained
3	An observation chart should be maintained (urine output, pulse, blood pressure, temperature)

VI	Criteria for optimal management of genital tract sepsis associated with pregnancy
1	Delivery should be expedited in chorio-amnionitis irrespective of the gestation
2	Blood should be taken for culture
3	Treatment of genital tract sepsis should be with broad-spectrum antibiotics
4	Metronidazole should be included in the antibiotic regimen
5	An observation chart should be maintained (urine output, pulse, blood pressure, temperature)
6	Exploration and evacuation of uterus should be performed if retained products are suspected

Source: Graham et al (2000), Criteria for clinical audit of the quality of hospital-based obstetric care in developing countries. Bulletin of the WHO; 78 (5): 614-620.

ANNEX 3: CRITERIA-BASED AUDIT DATA EXTRACTION SHEETS

3.a Blank Criteria-Based Audit Data Extraction Sheet

Identify a topic for criteria based audit

Develop criteria to measure practice, considering Structure, Process and Outcomes

List the criteria in the first column

Identify 10 cases which comply to the case definition

Review 10 cases, one at a time, and check whether criteria are met

Write Y (for yes) in the column if criterion is met an N (for no) if it is not met

Topic:	Cases										Total no Y
Criteria for criteria-based audit	1	2	3	4	5	6	7	8	9	10	/10

3.b Criteria-Based Audit Data Extraction Sheet – Example of Management of PPH

Identify a topic for criteria based audit

Develop criteria to measure practice, considering Structure, Process and Outcomes

List the criteria in the first column

Identify 10 cases which comply to the case definition

Review 10 cases, one at a time, and check whether criteria are met

Write Y (for yes) in the column if criterion is met an N (for no) if it is not met

Topic: PPH	Cases										Total no Y /10
	1	2	3	4	5	6	7	8	9	10	
Criteria for criteria-based audit											
Two intravenous lines put up with normal saline or ringers lactate											
Uterus massage done to make uterus contract and clots expelled											
Indwelling urine catheter inserted and bladder emptied											
10 Units oxytocin given im stat or 20 Units oxytocin given in 1 litre IVI at 60 drops/min											
Placenta inspected (completeness)											
Vital signs monitored and recorded ¼ hourly											
Estimated blood loss recorded											
Oxytocin available in maternity ward											
Standard treatment protocol for PPH available in labour ward											

3.c Criteria-Based Audit Data Extraction Sheet - Example of Use of Partograph

Identify a topic for criteria based audit

Develop criteria to measure practice, considering Structure, Process and Outcomes

List the criteria in the first column

Identify 10 cases which comply to the case definition

Review 10 cases, one at a time, and check whether criteria are met

Write Y (for yes) in the column if criterion is met an N (for no) if it is not met

Topic: Management of woman in labour, using the partograph	Cases										Total no Y /10
	1	2	3	4	5	6	7	8	9	10	
Criteria for criteria-based audit											
Past and present obstetric history taken and recorded on partograph											
Foetal heart rate recorded at least hourly											
Contractions assessed and recorded at least hourly											
Maternal blood pressure measured and recorded 4 hourly											
Cervical dilatation assessed through VE and recorded 4 hourly											
Commencement and duration of 2 nd stage of labour recorded											
Oxytocin 10 Units given im immediately after birth of baby											
Placenta inspected for completeness and findings recorded											
Vital signs (BP, pulse), bleeding and fundal height assessed and recorded after delivery ½ hourly for 2 hours											

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