Immpact Toolkit

A guide and tools for
maternal mortality programme assessment

MODULE 4, Tool 3

Tracing adverse and favourable events in pregnancy care (TRACE)

Version 2.0

List of Acronyms

BdD	*Bidan di Desa*
CEMD	Confidential Enquiry into Maternal Deaths
TBA	traditional birth attendant
TRACE	Enquiry to trace adverse and favourable events in pregnancy care

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INTRODUCTION

TRACE helps to explain why maternal deaths or 'near misses' (severe and life threatening obstetric complications) occur, tracking events in the progress of pregnancy and birth from the home to the hospital to the community. The approach can be used to generate recommendations for improvements in clinical practice and for programme intervention. TRACE is presented here as a means to evaluate clinical practice in low resource settings.

The version of TRACE described here is a generic tool that can be applied in many different settings with local adaptation, but it is based on country-specific experience which we provide as examples (see case studies in section 4(3).7).

4(3).1 What is TRACE?

TRACE is a modified version of the method of reviewing individual deaths in Confidential Enquiry into Maternal Deaths (CEMD) that also includes analysis of favourable factors and near misses (Hussein, 2007). It can be used to investigate why maternal deaths or near misses occur and how clinical practice might be improved.

The TRACE tool helps to identify factors concerned with the characteristics of care or care-seeking in pregnancy, from a woman's home to the place of the final outcome – which may take the form of a maternal death, a near miss, or a safe and successful delivery. The factors are identified by collating the opinions of a panel of individuals who have experience in providing pregnancy care of a high standard. The panel uses various anonymized data sources such as clinical case notes, nursing notes, or people's accounts of events during the provision of care, and assesses the relevant events according to a pre-specified framework. Their findings are collated and used to provide general conclusions on the standard of care provided, focusing on both positive and negative aspects.

The CEMD instrument 'tells the story' of why women die in pregnancy and childbirth (see Lewis, 2004 in WHO, 2004). The main difference in the TRACE approach is the identification of not only adverse factors, which are usually the focus of CEMD, but also favourable factors. In situations where high-quality care can be expected as the norm, CEMD's focus on adverse factors is justifiable. However, in some situations where resources are limited and conditions difficult, a focus on negative aspects only may be discouraging and sometimes overwhelming. Identifying favourable events may help to redress this imbalance and also alleviate some of the anxiety and defensiveness felt by health professionals and health authorities when an audit or a CEMD is undertaken (Hussein, 2007).

Regarding the focus on adverse factors, Rankin et al (2006) reflect on the experiences and opinions of participants on enquiry panels in the UK. For further detail on the use of favourable factors in CEMD in Ghana and Indonesia, see section 4(3).7.

There are three other ways in which TRACE modifies CEMD:

1. *In-depth assessment of community factors*

   Traditionally, CEMD has included community factors as part of its assessment. However, the assessment may sometimes be incomplete (because of lack of information about events before admission), biased (it can be easy for health professionals working in facilities to place the blame on community factors) and poorly assessed (it is possible that some health professionals on CEMD panels have little or no experience of working in the community, or in remote areas).

   El Kady et al (1989) discuss how the testimonies of those involved in maternal deaths have been used in Egypt. For information on experiences of using interview transcripts for determining community events in Indonesia, see section 4(3).7.

2. *Inclusion of near misses as well as deaths*

   These are included because the underlying hypothesis is that a near miss may be viewed as a positive or a negative outcome. If considered as a positive outcome, the complication was such that a near miss was unavoidable, but good quality clinical care resulted in averting a maternal death. As a negative outcome, the complication that resulted in a near miss was such that earlier prompt management might have prevented the near miss from occurring.

   Pattinson and Hall (2003) give recommendations regarding the conduct of confidential enquiries on near misses. For Immpact's experience of using TRACE to conduct confidential enquiries on near misses in Indonesia, see section 4(3).7.

3. *Successfully managed delivery complications*

   Inclusion of these cases has two purposes. First, more favourable factors may be identified than in cases of deaths or near misses. This may help to reinforce the good points of the service provided. Second, this group of cases may be used to compare events with deaths and near misses. If the same types of adverse event are repeatedly detected in these cases as in deaths or near misses, it becomes less likely that a death or near miss can be attributed to the factors identified as related to provision of care.

All of these modifications are optional and users of the approach may choose those which are relevant to their situation and what they wish to explore. See Step 1.

Immpact has used TRACE in Ghana and Indonesia, adapted for use in two different geographical and cultural contexts (see country case studies in section 4(3).7). In Ghana, clinical case notes were used as the basis for the data, while in-depth interview transcripts were found to be more appropriate in Indonesia. For a description of how TRACE was used as part of the Ghana evaluation, see Module 3 of this Guide. For general information on evaluation tool adaptation, see Technical Annex C in Module 5.

4(3).2 Why use TRACE?

The modifications to the CEMD methodology proposed here are intended to encourage the use of the confidential enquiry process in settings where health services are being provided under difficult conditions, with resource constraints and where health personnel may not be optimally motivated. The confidential enquiry process is favoured over other similar clinical reviews (such as maternal death reviews and audits), and is used as a basis for TRACE because confidential enquiries usually involve collations of data at a level higher than the places where the clinical care is being provided, and involve some degree of national policy commitment. This means that the findings are highly anonymized, protected against punitive attitudes, and are highly visible.

4(3).3 Limitations of TRACE

TRACE should be considered as complementary to other methods of exploring quality of care. Used alone, it will provide information on clinical quality of care, and the reasons why a maternal death or near miss might have occurred. However, it does not 'measure' quality of care in any quantifiable way. Like confidential enquiries, it cannot provide information on the characteristics of pregnant women, and it can be resource-intensive and time-consuming. Enquiry into referral of near miss or maternal deaths from the community to health facility adds greatly to the understanding of issues around referral and delay in accessing care.

4(3).4 Using TRACE

This section provides a step-by-step guide to conducting a TRACE study. It assumes that no confidential enquiry process is already in place, that your evaluation objectives as a whole have been determined, and that you feel TRACE will satisfy the requirements of your evaluation. The TRACE study may be the single study component of your evaluation (if the evaluation is very narrow in scope), or it may be one of several different components looking at different aspects.

Step 1: Design your study

Decide on modifications to the TRACE methodology

Start by identifying whose clinical practice you wish to study, and where these providers of service are located. This will help you decide how to modify the TRACE methodology to suit your context and also help to identify the appropriate data sources for your needs.

As an example, two country case studies are provided in section 4(3).7 based on Immpact's experience of applying this approach.

Population

Your study population will be women who have either experienced a near miss, who have died during pregnancy, or who have experienced a successful delivery despite occurrence of a complication. The study site will normally have been selected during the evaluation design process (see Module 3). The care to be evaluated through TRACE should have been provided within the study site.

The time period from which cases can be drawn depends on the data source. If clinical case notes are being used, recall bias is not a problem, and so cases can be drawn from whatever period of time is of interest. This type of study can be conducted either retrospectively or prospectively. If interviews are being used, recall bias needs to be considered, and a long retrospective period is probably not suitable. In general, the occurrence of the event of interest should be within the last six months, or the study conducted prospectively and the interviews done as soon after the event as possible.

Sample

Sampling would follow standard sampling principles for qualitative studies (see Module 3). The aim would be to obtain as wide a mix of cases as possible, representing different types of complication and being as representative of the study area as possible. Depending on the objectives of the study or evaluation, the cases could be gathered from a range of different direct obstetric complications (haemorrhage, eclampsia/pre-eclampsia, obstructed labour, sepsis) as well as indirect complications (malaria, HIV etc.). The sample could be limited by considering only the commonest complications, or by focusing on a specific condition of interest. The sample size is likely to be restricted by feasibility and time issues. Immpact's experience is that, on average, panels can probably review a maximum of four cases in one sitting, usually lasting between six and eight hours. Where maternal deaths are few in number, it may be feasible to investigate all deaths. However, if small numbers of maternal deaths are a result of a study restricted to one facility or one small geographical area, it can be difficult to maintain anonymity of cases.

Data sources

There are likely to be two possible data sources – clinical case notes (and other supplementary clinical notes such as maternal death audit reports, nursing notes, antenatal cards, vital sign charts etc.) and in-depth interview transcripts. Your data sources will probably be determined by the evaluation aims and objectives as described in the country case studies (section 4(3).7). There is no reason why both data sources may not be used together, provided you have study objectives and evaluation needs that require both data sources to be used.

Identifying cases of death, near misses and complications

Cases of maternal death in health facilities could be identified from delivery and other registers or by looking up maternal death audit reports. In general, the case notes will be available in the medical records section and are sometimes kept in a special section. Users should be aware that these sources are potentially biased and often incomplete. It is common to find that the records of some maternal deaths cannot be found. If the study is prospective, then a daily or weekly visit to the wards may help to minimize losing any cases. Cases of maternal death which occur outside health facilities can also be difficult to trace. Many of them are not reported, but the usual sources of information are through:

- Community practitioners;
- A village representative (a chief, or the traditional birth attendant, or an elder);
- District registers of births and deaths.

Maternal complications are less difficult to find, especially if the complication is resolved. Delivery ward registers are the usual source in health facilities. If the complication was resolved outside a facility, the community practitioners' notes or their recall might be used. Near misses are probably the hardest to identify, and will require establishing a set of criteria to categorize a severe complication as a near miss. If the TRACE study is being conducted as part of a larger evaluation, look for opportunities to find cases from other components of the evaluation, such as near miss or maternal death studies (see the RAPID tool in this guide). If interview transcripts are to be used, the knowledge of local people will have to be used to find the individuals involved in the chain of care provided during the event of interest.

Step 2: Obtain permissions

At this stage, the design of your study should be fairly clear and documented in a research protocol. The usual ethical permissions should apply. It is clear that the study involves dealing with information that is sensitive in nature. Recounting the event leading up to a death may be traumatic for an individual. There are issues of litigation and medical negligence to consider, although the TRACE study should be fully confidential, and all data use anonymized and presented in a collated manner which prevents any punitive action being taken. In order to ensure that your study will have the highest impact, it is a good idea to inform high-level authorities that the study is taking place, and receive their support from an early stage.

Step 3: Set up your panel

The role of the panel is to:

- Review the transcripts of interviews independently, using an assessment form;
- Review the records independently in preparation for the monthly meeting, completing individually an assessment form for each case;
- Meet monthly over a period of six months to review cases using the same instrument, coming to consensus about the content of one completed instrument as an agreed report from each of the committees, for each case;
- Synthesize the data, interpret the results and make recommendations, identifying substandard care, avoidable factors and positive opportunities for improving pregnancy care.

Usually, panels will comprise a group of six to eight practising clinicians including one or more individuals from obstetrics, midwifery, anaesthesiology and public health. A pathologist will also be important, especially if autopsies are practised. One alternative to this type of medical expert panel will be to set up a panel of 'peers' – for example, if evaluating the practice of village midwives, a panel of experienced village midwives would be appropriate.

The choice between these alternatives would depend on the purpose of the research. If the care being assessed is being provided by a team of different practitioners (doctors, midwives, etc.), then the multidisciplinary panel would be appropriate. If the care being assessed is that of a specific type of practitioner (e.g. only midwives practising at village level), it could be argued that the average hospital physician will have little experience of this particular context. Also, there needs to be acknowledgement that hierarchies do exist between health professionals, and in some situations midwives, for example, may not feel free to voice their opinions in the

presence of senior doctors, making homogenous groups more desirable. A panel of 'peers' is likely to have additional advantages of increasing ownership of recommendations and reflections on their own day-to-day practice, which might in itself constitute an intervention to improve practice.

It is recommended that the same panel assess all the cases targeted, to minimize biases. When selecting panel members, it is likely that local knowledge can be used to identify potential members. It is generally advantageous to include panel members who have good skills in providing critiques, but also have the ability to be positive and constructive. Panel members should also try to commit themselves to the whole series of assessments, and for this reason the roles, duration of study and what is expected of the panel should be made clear when inviting them to participate.

Step 4: Conduct pilot test

We recommend that a pilot is conducted before embarking on a full enquiry. The purpose of the pilot is to ensure that the case assessment form is adequate to elicit all necessary information from the data available on each case. The pilot can be conducted using two cases which fulfil the criteria for inclusion into the study. A panel meeting should be called, (see Step 6) and the panel should use the case assessment form provided to review the two cases included in the pilot.

After the pilot review, the panel may have suggestions to alter or amend the process, or the case assessment forms. If these suggested changes are helpful, you, as the researcher, may make the amendments requested. The structure of the form will also be affected by the specific modifications to the TRACE methodology that you are using. For example, if you are assessing near misses rather than death, you may need to change the references from death to near miss.

Pilots on the TRACE approach were conducted in both Ghana and Indonesia. In both settings, the first two cases included in the study were assessed during a pilot panel meeting using a draft case assessment form. Panel members suggested changes and additions to the case assessment form to help identify particular subheadings within the sections of the case assessment form. For example, the original draft form asked generally about availability of information. In Ghana, the suggestion was to list specific types of information, so that no essential investigation or test was forgotten. Since the changes made did not affect the actual assessments, it was decided to include the piloted cases in the main study. The case assessment form provided in section 4(3).8 is the form resulting from the combined pilots in Ghana and Indonesia and adapted from the CEMD in South Africa (see NCCEMD, 1998).

Step 5: Collect data

In Step 1 you will have decided what data to collect and how to collect them.

- If you are using clinical case notes:

Researchers will be needed to select the sample from the possible cases, collect the data, transcribe interviews, recheck for completeness and clarity, anonymize and translate if necessary. As many different types of clinical case notes as possible should be collected – include nursing notes, partographs, maternal death audit reviews, vital sign charts, drug cards, hand-held cards, etc. Sometimes these are not all available together, and the data collection should seek out all these sources of information. Researchers familiar with health facilities are probably needed.

- If you are using in-depth interview transcripts:

You will need to set up arrangements to meet and interview people. Experienced social scientists who have conducted in-depth interviews will be required as interviewers. The usual means of conducting these interviews will be adequate, although specific prompts may be required to elicit clinical issues. We have found that for this purpose the main interviewer requires support from a clinician with obstetric or midwifery skills in order to elicit clinical issues during these interviews.
It is important to ensure that you inform the individuals being interviewed that you are trying to find out the story of how they dealt with the woman in the particular case being discussed. Reassure them that there is no right or

wrong answer, and that you simply want to put together a picture of the circumstances. A list of clinical information required from in-depth interviews is given in section 4(3).8. Note that the usual principles of in-depth interviewing should apply. The list provided should not be used to elicit information directly from interviewees as an 'interview guide' because if used in this way, it will not generate the richness of information required.

Once the first set of four cases is collected, the first panel meeting can be conducted while data collection continues. Copies of the data (clinical records or interview transcripts), fully anonymized and checked for completeness, should be sent to each panel member. There may be several documents pertaining to one case, so the documentation should have identifying codes which allow the panel members to identify all documents related to each case.

> **Tip:**
> Panel members may be given either a summary of the data, or the raw data itself. During application of TRACE in the Immpact study, panel members felt that the raw data would provide them with a comprehensive view of events, and therefore despite the amount of documentation, the 'raw' information was made available to them.

Step 6: Conduct panel assessment meetings

How the panel operates will depend somewhat on what is appropriate to the local situation. Panel members will first need time to read and review the cases. They should be warned that this reading (clinical case notes and/or large volumes of interview transcripts) can be onerous, and the documentation should be sent to them in advance.

You will need to decide if the panel can work 'remotely' or whether they need to meet as a group. Working individually will be less time-consuming for the panel.

> **Tip:**
> We have found that, in general, panels prefer to meet in addition to completing their reviews individually, and the discussion during the panel meetings often generates additional information and interpretation of the events.

If you have panel meetings, there will be extra costs, and a suitable venue with refreshments will need to be provided.

The panel meetings can be conducted using the principles of a focus group discussion, with the researcher acting as a moderator and recording findings. It may be advantageous for at least some of the researchers involved to be medically trained and familiar with maternal health issues. The role of the researcher during the panel meetings is to facilitate the process and clarify any uncertainties (for example to clarify the language to be used on the assessment form; to ensure interpretation is avoided; to make notes of progress and record queries that came up which were then resolved by senior researchers if they could not be resolved at the meeting), but they should not state their opinions or influence the decision of the panel (especially if the researcher is medically qualified; it can be difficult not to get involved in the process!).

The maternal death assessment form (see section 4(3).8) will be completed by the panel. It is a structured form which allows adverse and favourable factors (in terms of provision of clinical care) to be identified and arranged according to a set of pre-defined themes. These themes relate to:

- the individual, the family and the community;
- the health system;
- the standard of clinical care.

If no panel meeting is held, then the individual forms are collected by the researcher and compiled to represent all the responses. If panel members attend a meeting, they agree on a compiled case assessment form reflecting the assessment of the group as a whole.

The final feedback provided by the panel should be anonymous and provided not as individual cases, but as collated findings from all cases reviewed.

Step 7: Analysis

The analysis is completed in two parts:

1. ***The panel assessment.***
   The interview transcripts are read and analysed by the panel members. The panel members take the raw data available from the transcripts and distil the information into the framework provided by the case assessment forms, thus focusing the information on the issues relevant to clinical quality of care.

2. ***Review of the case assessment forms.***
   This step of the analysis is conducted by the researchers and aims to identify key issues relevant to quality of care and thus to identify any deficiencies, as well as good (favourable) practices. Recurring practices (whether bad or good) should be noted and highlighted, as these practices are likely to be more widespread. Comparisons and contrasts between cases should also be noted.

During the analysis, researchers should examine the possible sources of bias and ascertain whether these have been problematic in their particular setting. The usual types of bias seen in this study would include:

- Difficulty in finding certain types of case notes, especially relating to deaths. This is discussed in Step 1 above, and can be minimized by using multiple sources of information to identify and find the relevant cases of deaths (see Immpact's RAPID tool contained in this module for information on how to do this).

  Recall bias – also explained in Step 1 above.

  Quality of case notes and/or interview transcripts.

The lack of information available from interview transcripts can be minimized by ensuring that the interviewers are well trained and aware of clinical issues. The information available from case notes can be very poor in some instances. This in itself is an indication of poor care provision, and it may be one of the recommendations for improvement in practice. Panel members should also be instructed to take the position that what is not written down is not done. Although this may not always be true, it allows for consistency across cases and prevents speculative assessments. It is an important part of the role of the researcher(s) to familiarize themselves with this kind of quality control and pass it on to panel members.

Step 8: Disseminate findings and recommendations

From this analysis, recommendations for improvements in the clinical quality of care can be developed. These recommendations should be elaborated in conjunction with the panel so as to maximize ownership and to improve the likelihood of the study findings being taken up and used locally.

A high-level event can be organized to sensitize policy- and decision-makers to the results of the study. Consider the direct involvement of your panel members in this process. Remember that the findings of this sort of study can be sensitive because they may bring up issues of medical negligence and litigation, so be aware of these matters and plan to deal with them early in the process. This may be done by means of prior discussions with experienced policy-makers and clinicians to obtain their advice on appropriate management of such matters before they arise. The panel must be made aware and accept the key guiding principles of confidential enquiries (that data is collated and that the data sources are anonymized) at the beginning of the work. The production of research papers and government publications can also help to raise the profile and action related to the study.

If TRACE is being applied as part of a broader evaluation on the quality of maternal health care, the findings from this arm of the evaluation should be integrated with other study results.

4(3).5 Follow-up to study

The TRACE approach does not necessarily end here. In situations where you might need to determine whether actions that have been put in place have resulted in better care, you may want to repeat the whole process to see if you can identify any changes in practice.

Alternatively, you could plan for routine panel assessments at regular intervals – say every two to four years, as with the CEMD, with associated publications and dissemination activities on a regular basis.

4(3).6 Budget implications of using TRACE

TRACE requires time commitments from senior or experienced panel members, especially clinicians who may spend valuable time as panel members instead of providing much-needed clinical services. The resource needs for TRACE have been collated from the experience of applying the method in Ghana and Indonesia and are summarized below.

The table below shows recurrent costs associated with the use of TRACE. No capital costs (such as vehicles, buildings or equipment for general research work) are included. Table 1 shows resources required for a study of 20 cases.

Table 4(3).1 (table1): TRACE resource requirements

	Quantity	***Time***
Supplies	Minimal copying of case notes, interview transcripts and case assessment forms for 6–10 panel members.	Not applicable.
Personnel	One experienced qualitative scientist for in-depth interviews (not necessary if no interviews).	8 hours training and orientation. 40 hours to interview 20 cases, plus travel time.
	One clinician experienced in obstetric/midwifery practice to accompany interviewer and to collect case notes.	8 hours training and orientation. 40 hours to interview 20 cases, plus travel time. If no interviews, and only collection of cases, 40 hours required to find cases, plus travel time to facilities.
	One senior research supervisor to attend all panel meetings.	40–60 hours of time to attend panel meetings. 80 hours for analysis and write-up.
	6–10 panel members to be reimbursed time.	40–60 hours of time to read case information and to attend meetings.
Travel and communication	Vehicle to travel to interview sites and to health facilities. Travel reimbursement to study participants and panel members. Phone calls, emails, postage to post out materials for panel meetings.	Not applicable.
Building operation and maintenance	Shared premises with other researchers.	Over a period of 6 months.

4(3).7 Country case studies

Ghana evaluation: focus on health professionals in health facilities

In Ghana, TRACE was used to explore the clinical quality of care provided by health professionals in health facilities, because the overall evaluation within which TRACE was used was identifying the effect on quality of care of fee exemption for delivery care. Virtually all health professionals (doctors, nurses and midwives) in Ghana provide delivery services in health facilities; it is extremely rare for deliveries to be conducted by professionals outside facilities. The evaluation also focused on maternal death as an outcome, rather than including any other studies of maternal morbidity. It is known in Ghana that most maternal deaths occur in hospitals, rather than in health centres at primary level. For these reasons, it was decided to focus on maternal death cases occurring in hospitals, and so the findings of TRACE were relevant to the practice of health professionals in hospitals only. An in-depth assessment of community factors was not included in this instance, apart from what could be found in clinical case notes. Cases of maternal morbidity were also not included in TRACE for this particular evaluation.

Indonesia evaluation: focus on midwives working in the community

The use of TRACE in Indonesia provides an interesting contrast to the Ghanaian situation. The evaluation in Indonesia focused on the quality of care being provided by one specific type of health worker – a fully trained professional midwife working in the community. This midwife (in Bahasa Indonesia, *Bidan di Desa* (BdD)) may conduct deliveries or manage pregnant women either in the woman's home or in the midwife's own home. One BdD is responsible for every village in Indonesia. The BdD does not usually keep detailed clinical notes, so these could not be used as a data source for assessment of the BdD's clinical practice. Instead, we used in-depth interviews from a range of lay people as well as health professionals to assess their perspectives of the practice of the BdD. Because there were concurrent studies investigating near misses as well as maternal deaths as part of the evaluation, we found it useful to include these two optional modifications to TRACE in Indonesia (i.e. evaluation of midwife practice using in-depth interviews). Since the BdD did not provide services in health facilities, case notes were not used as a data source.

4(3).8 TRACE data collection instruments

The following pages include two key TRACE research instruments:

1. List of clinical information required from in-depth interviews;
2. TRACE maternal death assessment form.

List of Clinical Information Required from In-depth Interviews

This list was developed by Immpact for the use of TRACE in Indonesia, and is included here as an illustration of the kinds of clinical information necessary.

Before the interview begins:
Ensure that you inform the health worker being interviewed that you are trying to find out the story of how they dealt with the woman in the particular case being discussed. Reassure them that there is no right or wrong answer, and that you simply want to put together a picture of the circumstances.

The following list is to be used as a series of prompts, or a checklist to ensure that all necessary information has been collected from an interview when conducting the referral interviews, but not as an interview guide. It is highly recommended that clinicians supporting the main interviewer familiarize themselves with this list in preparation for interviews.

ANTENATAL CARE/PREPARATION FOR LABOUR

- Birth plan available
- Screening for pre-eclampsia, anaemia, syphilis, HIV
- Management of any abnormal conditions detected (e.g. vaginal discharge, urinary problems)
- Preventive measures (tetanus toxoid, iron folate, mebendazole)
- Advised on nutrition, family planning, danger signs
- Emergency plan available
- Recording form available

NOTIFIED OF COMPLICATION

- Information requested on condition of woman from person who notifies (*Bidan di Desa*) of complication (is she bleeding, feverish, conscious, convulsing?)

MANAGE DELIVERY

- Clinical history. Any previous treatment given by others (private practitioner, TBA, healer)
- Assess labour pains, ruptured membranes
- Any assistance from helper, TBA? Was this assistance useful or not?
- Determine if any danger signs such as bleeding, long labour, severe headaches, swelling, visual disturbances
- Decide stage of labour – examine abdomen, cervix (or not, if any contraindications)
- Supportive care: communication, privacy, cleanliness, mobility, urination, pain relief, birth companion
- Postpartum
- Routine care: temperature, assess uterus, check for bleeding, discharge, infection, blood pressure, pallor, repeated monitoring (how many times, what intervals)
- Assess/manage complications (see below)

RECOGNIZE COMPLICATION

- Clinical history
- Quick assessment – unconscious, convulsing, bleeding, discharge, abdominal pain, headaches, visual disturbances, difficulty breathing, fever, vomiting

MANAGE COMPLICATION

- Maintain airway and breathing
- IV line
- Fluids
- What was done if IV line not possible?
- Keep warm
- Stay with woman
- Specific complications:
- Bleeding: massage uterus, expel clots, bimanual compression, aortic compression, oxytocin, ergometrine, remove placenta and retained products of conception, what was done after removal of placenta (repeat oxytocin, massage, antibiotics if fever etc.), repair/pressure on tear, empty bladder
- Eclampsia/pre-eclampsia: magnesium sulphate, diazepam, antihypertensive
- Infection: antibiotics
- Obstructed labour: length of time, presentation of the baby (breech, shoulder), reason for obstruction, offensive discharge, fever, bleeding
- Malaria: antimalarials IM, glucose IV
- Is there a written record of all the events?

DECISION TO REFER

- Diagnosis of complication made
- Diagnosis of stage of labour made
- Was birth imminent? If so, what was done?

SUPPORT FROM HOSPITAL

- Nothing to add to referral guide

REACHING THE HOSPITAL

- Continuing assessment – state of consciousness, onset convulsion, bleeding getting worse
- Management during transportation
- Maintain airway and breathing
- IV line
- Fluids
- Keep warm

ARRIVAL AT FACILITY

- How long was the wait before the woman was assessed by a health professional?
- Did the health professional in the facility take the clinical history from the village midwife?
- Were there appropriately trained staff present?
- Was the health care facility satisfactory in the midwife's opinion?

TRACE Maternal Death Assessment Form

TRACE Maternal Death Assessment Form

CASE NUMBER:

CAUSE OF DEATH:

Primary (underlying) cause of death	Specify:
Final cause of death	Specify:
Contributory (or antecedent) cause/s	Specify:

ADVERSE/FAVOURABLE FACTORS/EVENTS:

1. PATIENT ORIENTED

	Adverse factors	***Favourable factors***
a) Personal circumstances		
b) Family		
c) Community		

2. ADMINISTRATIVE / HEALTH SYSTEM FACTORS		
	Adverse factors	***Favourable factors***
a) Transport		
Give explanation for factors related to transport		
b) Means of entry to facility		
Give explanation for factors related to means of entry		
c) Access to health care facility		
Give explanation for factors related to access		
d) Availability of health care facilities		
Give explanation for factors related to availability of facilities		

2. ADMINISTRATIVE / HEALTH SYSTEM FACTORS (continued)		
	Adverse factors	***Favourable factors***
e) Availability of personnel		
Give explanation for factors related to availability of personnel		
f) Appropriately trained staff		
Give explanation for factors related to training		
g) Communication		
Give explanation for factors related to communication		

3. MEDICAL CARE		
	Adverse factors	***Favourable factors***
Antenatal care		
Intrapartum care		
Intra-operative care (if applicable)		
Postpartum care		
Did an emergency occur? If so, when? (early pregnancy, antenatal, intrapartum or postpartum)		
Emergency event during:		
Initial assessment		
Problem identification or diagnosis		
Management plan		
Continued monitoring		
Resuscitation		
Anaesthesia		
Professional conduct of health providers		

4. AVAILABILITY OF INFORMATION	
State what sort of information was missing from the case notes, or if you think the records available are illegible, missing, good, complete, incomplete, timely etc.	
	Comments
History taking	
Clinical examination	
Lab, radiology, etc investigations	
Diagnosis	
Post mortem reports	
Antenatal card	
Anaesthesia records	
Nursing notes	
Maternal death audit	
Operation notes	
Observation chart	
Drug charts	
Fluid input/output	
Front index sheet	
Any others (please state)	

5. GENERAL COMMENTS AND SUMMARY	
Provide a summary of your opinion on your case and comment on any other positive or negative issues related to the case.	
Date:	
Name of assessor: (one for individually completed forms, names of all committee members present if a committee completes the form)	

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