# CHAPTER 4
# EMOC REGISTERS AND RECORDS REVIEW

## PURPOSE AND DESCRIPTION

Completed registers and records are important to improving quality of service because they provide the basis for monitoring client care, tracking utilization, service delivery, and medical statistics, and for facilitating case review. The purpose of the registers and records review is to help the team that conducts the review to evaluate the current status of facility registers and client records for completeness in recording EmOC information, to identify areas for improvement, and to develop an action plan to implement solutions. Specifically, this review will help team members to:

- Identify register or record types necessary to capture complete information on clients with obstetric complications and emergencies (see examples below)
- Identify categories of essential information that need to be added to existing registers or records
- Identify registers and records not filled out correctly, completely, or in a timely fashion
- Use the four steps in the QI process to gather information, find and implement solutions to problems, and to review progress on improvements

This tool includes forms and guidance for reviewing:

- Facility registers (those that include EmOC information)
- Individual client records
- Death reports
- Statistics register

The tool also provides general guidance about how to fit this information into the QI process.

A registers and records review can be done in conjunction with the initial EmOC assessment; also, if registers and records are identified as a problem during any assessment or during a medical monitoring visit, a review can be done at any time.

Registers and records should be reviewed at least once a year. The EmOC team members should do this more frequently if other assessments identify the need. The team can choose to review one of the facility registers or client records in rotation every two months as part of routine staff meetings.

## REGISTERS AND RECORDS: WHAT'S NEEDED FOR QI

The sources of EmOC information vary from facility to facility. The types of registers and client records to consider for review are:

- *Labor and delivery register:* information on each client admitted to labor and delivery
- *Maternity ward register:* information on each client admitted with antepartum and postpartum complications

- *Female ward register:* information on each client admitted with postabortion complications and ectopic pregnancy, including a column to indicate if any client is currently pregnant or was pregnant within the past 42 days
- *Operating room register:* information on each client who undergoes a procedure, including a column to indicate if the client is currently pregnant or was pregnant within the past 42 days
- *Emergency-evaluation area register* (i.e., emergency room, treatment room): information on each client admitted with postabortion complications or ectopic pregnancy, including a column to indicate if the client is currently pregnant or was pregnant within the past 42 days
- *Client record:* an individual record for each client, including those with ectopic pregnancy, abortion complication, postpartum admission, or any other obstetric complications.
- *Death report:* a record for any client who dies within the facility. This death report should have a specific space to indicate whether or not the client was pregnant at the time of death or within 42 days of death. This indication enables the capture of "maternal death," which is defined as death occurring within 42 days of the termination of a pregnancy.

Medical monitoring, case review, and tracking of statistics depend heavily on the quality of information found in registers and client records. Taken together, these documents, therefore, need to provide at a minimum:
- The client history, physical exam, and diagnosis
- The course of hospital visit, including procedures, treatment, and condition (at least daily and at discharge)

…for **all** clients who:
- Are pregnant or were pregnant within the last 42 days seen in the emergency room, operating room, or female/maternity ward; and discharged
- Have a diagnosis of ectopic pregnancy or abortion complication
- Are admitted with a postpartum complication, such as sepsis or retained placenta
- Are admitted antepartum but not in labor
- Are admitted for normal labor and delivery or a complication in labor or delivery

The quality of these data will profoundly affect the efficacy of medical monitoring, tracking statistics, and case reviews and their contribution to the QI of EmOC services.

In conjunction with this review of specific registers and records, facility management might also review the facility's system of client information recording as a whole, as well as consider reorganizing it to capture all EmOC-relevant information more efficiently. The WHO recommends **one** "maternity register," for example, as the source of all information on obstetric complications and maternal death—from admission to discharge—including such key events as delivery, ectopic pregnancy, and abortion complications. It is beyond the scope of this tool to address these larger, health information system issues; however, if team members feel systems changes are desirable, the team leader should bring these ideas to the attention of appropriate people in the health system.

## PREPARING FOR REGISTER AND RECORDS REVIEW

### Instructions for the Team Leader or Review Organizer

- *Select participants:* The team to conduct this review should include medical and supervisory staff, as well as staff who:
  - Keep registers, records, or logs
  - Admit clients (in the emergency room, labor and delivery rooms, female/maternity wards)
  - Maintain the record room
  - Maintain statistics
  - Conduct case reviews
- *Read* through the instructions on how to conduct the review and be familiar with the questions on each form.
- *Determine* which facility registers (such as labor and delivery, female/maternity ward, operating room) will need to be reviewed to capture information on the clients from different departments listed above.
- *Make copies* of the review forms for the team.
- *Decide on a date to conduct the review.* Consult with site management to determine a time when the review is least likely to disrupt services. Have a plan to cover emergencies while staff are conducting the review.
- *Inform the review team* of the time and place for the initial meeting and the amount of time they should expect to participate in this process.
- *Organize times and places* for the following meetings:
  - A *preparatory meeting* (30 minutes) to go over with the team the instructions for the review.
  - The *information gathering and analysis* meetings where team members actually conduct the review itself and analyze the findings. These meetings may take place over the course of one or two days if several different registers are being assessed, or one or two registers could be assessed every few months.
  - An *action plan development meeting* (two hours) to review the findings from the review and to integrate them into an overall action plan.
  - A *debriefing for site management* on the findings and the action plan developed.
- *Review* how to facilitate meetings as described in Chapter 4 of the QI Leadership Manual.
- *Ensure seating arrangements* are comfortable and allow for maximum participation at all meetings.
- *Prepare flipcharts* required for explaining the registers and records review, and cover them up until they are needed in the discussion. Collect other supplies as needed.
- *Conduct the preparatory meeting*
  - *Advise staff* of the purpose of the registers and records review and why they were selected to conduct it.
  - *Explain how* they will conduct the review.
  - *Review samples* of each register and record type to be reviewed and discuss the important elements to look for and why they are important.
  - *Demonstrate how to fill out* review forms by using sample registers and records.
  - *Review where to access* registers and records (in the record room or client-care area).

- *Divide staff into preassigned groups*, divide the records and registers among the groups, and advise them of the assessment timeline.
- *Discuss* how and when they will analyze their findings.
- *Answer* any questions.

## USING THIS TOOL IN THE QI PROCESS

## Conducting the Review: Information Gathering and Analysis

*Instructions for Staff*
- **Follow instructions** included in the review form for the register or record type selected.
- **Fill out** the appropriate review form.
- **Calculate the percentage** of client record or register entries that are complete for each row of information, for each facility register or client record reviewed. For example, if 20 client entries are reviewed in a facility register, and 14 are complete for name and address, then 70% are considered complete for this information. Although the aim is to have 100% complete in the initial review, staff may choose to focus on items completed at a lower percentage decided by staff (80%, for example).
- **Share findings** with other staff members and begin to analyze the root causes during the initial analysis. They should focus on incomplete registers and records, on specific pieces of information within the registers or records that are below the decided cutoff, and on missing categories of information. For each deficiency found, staff should
  - *Discuss* the importance of the particular missing information
  - *Try to identify the root cause* of the missing information by asking "multiple whys" (see Chapter 3 of the QI Leadership Manual.)
  - *Brainstorm* and identify potential solutions.
- **Use the action plan format** below (Figure 10) to record the preliminary problem analysis. Discuss problems, find root causes, and identify solutions.   Bring the draft action plan to the next action plan meeting.

## Developing an Action Plan

- The **small working groups** that conducted the review **present their draft action plan** to the overall action plan meeting for discussion. The larger group may have useful suggestions or findings from other assessment tools to integrate into the action plan. Problems and/or resources from other departments may also influence solutions.
- **Find a solution** for each root cause of a problem identified.
- **Prioritize solutions,** taking into consideration such issues as client and/or staff safety and the ease with which a solution can be carried out using existing resources.
- **Assign a person** responsible for implementation and completion dates that reflect each item's priority. These steps are described in detail in Chapter 3 of the QI Leadership Manual.

Figure 10 shows a sample action plan drawn from a review of registers and records that would be integrated into the overall action plan for improving EmOC services.

**Figure 10: Sample Action Plan from a Records Review**

| Problem | Root Cause(s) | Solution(s) | By Whom | By When | Status |
|---|---|---|---|---|---|
| Complication column isn't filled out in Labor and Delivery Register. | • Client record isn't filled out. <br> • Staff don't know how to keep register. <br> • Staff don't see utility of information from register. | • Orient staff on how to fill in registers and records correctly. <br> • Do monthly analysis of obstetric complications from register <br> • Discuss in staff meeting. <br> • Orient newly hired staff. <br> • Conduct record reviews once a month. | • Head nurse maternity <br><br> • Team leader | Next month (Dec. 15) <br><br><br> Start next month: (Dec. 21) | |

## Implementing Solutions

- *Implement solutions* as agreed upon in the action plan. Suggestions for facilitating implementation are in Chapters 3 and 4of the QI Leadership Manual.
- The team leader or QI committee members can periodically *check in with staff* assigned to a particular intervention on the action plan to determine their progress and provide support as needed.

## Evaluating Progress and Following Up

- *Review the findings* from previous registers and records reviews to determine if there has been improvement. If yes, then celebrate! If not, then begin the problem analysis and action plan steps again.
- *Review the action plan* during routine staff meetings to determine progress and to discuss any modifications or additional support needed.
- During these meetings, *decide on further information gathering needed,* and repeat or use different assessment tools as appropriate.

## FACILITY REGISTER REVIEW FORM

Review any register that captures information on the following type of client:

- Is pregnant or was pregnant within the last 42 days, seen in the emergency room, and discharged
- With diagnosis of ectopic pregnancy
- With diagnosis of postabortion complication
- With a postpartum admission (e.g., sepsis, retained placenta)
- With an antepartum admission who is not in labor
- With admission for a complication in labor or delivery
- With admission for normal labor and delivery

## Instructions

1. At the top of the Facility Register Review Form, indicate which register (e.g., labor and delivery, female/maternity ward, emergency room) is being reviewed.
2. Fill out a separate Facility Register Review Form for each type of facility register reviewed.
3. You will be reviewing 20 entries overall, 10 each in two quarter-years.
   On initial review:
   - Select one sample page for the first and third quarters of the preceding year—for example, the fifth day of the third month and the fifth day of the ninth month.
   - Review the first 10 obstetric entries on each page. Make a note of which pages were reviewed by entering the date(s) on the form next to "Item recorded for."
4. On subsequent reviews:
   - Select one sample page for each quarter since the last review.
   - Review the first 10 entries on each page. Make a note of which pages were reviewed by entering the date(s) on the form next to "Item recorded for."
5. Check to see if the information listed in the form is filled out completely for **each** of the 10 clients per page, and put a "tick" mark (or ✓) if it is.
6. If the information is not filled out (*including if the information is only partially filled out*), put a "Ø".
7. For all information not completed (or for all Ø 's), enter comments in the "Remarks" column. For items that are partially complete, specify what is missing in the "Remarks" column.
8. Calculate the number of "ticks" (or ✓'s) for the total out of 20 for each row for analysis.
9. Calculate the % complete by multiplying the total out of 20 by 5. For example, if 20 client entries are reviewed in a facility register and 14 are complete for name and address, then 14 x 5 = 70% are complete for this information.
10. Analyze the registers from different areas separately.

# Facility Register Review Form

**Register type:** _____
**(e.g., labor and delivery, female/maternity ward, emergency)**

| **Item recorded for: _____ (date)** | **First Quarter** **First 10 Entries** | | | | | | | | | | | **Remarks** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | | **Remarks** |
| Client information (name, address, age, record number) | | | | | | | | | | | | |
| Date and time of admission | | | | | | | | | | | | |
| Diagnosis on admission | | | | | | | | | | | | |
| Date and time of any treatment or procedure (including delivery type) | | | | | | | | | | | | |
| Complications either noted or stated as "none"[*] | | | | | | | | | | | | |
| Client outcome (discharged stable or transferred to ward/recovery) | | | | | | | | | | | | |
| Baby outcome if delivery (live birth, still birth, birth injury, infection) | | | | | | | | | | | | |
| Attendant's name/initials (if delivery) | | | | | | | | | | | | |

| **Item recorded for: _____ (date)** | **Third Quarter** **First 10 Entries** | | | | | | | | | | **Total /20** | **% com-plete** | **Remarks** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **Total /20** | **% com-plete** | **Remarks** |
| Client information (name, address, age, record number) | | | | | | | | | | | | | |
| Date and time of admission | | | | | | | | | | | | | |
| Diagnosis on admission | | | | | | | | | | | | | |
| Date and time of any treatment or procedure (including delivery type) | | | | | | | | | | | | | |
| Complications either noted or stated as "none"[*] | | | | | | | | | | | | | |
| Client condition (discharged stable or transferred to ward/recovery) | | | | | | | | | | | | | |
| Baby outcome if delivery (live birth, still birth, birth injury, infection) | | | | | | | | | | | | | |
| Attendant's name/initials (if delivery) | | | | | | | | | | | | | |

*Individual register specifications:*
Female/maternity ward: Register *must* include a column to indicate if any client is currently pregnant or was pregnant within the past 42 days.
Operating room: Register *must* include a column to indicate if the client is currently pregnant or was pregnant within the past 42 days.
Emergency-evaluation area: Register *must* include a column to indicate if the client is currently pregnant or was pregnant within the past 42 days.

[*] To receive a "✓", item *must* be filled out; a blank space is not sufficient evidence that there was no complication.

## CLIENT RECORD REVIEW FORM

Client records for the following clients should be reviewed:
- Is pregnant or was pregnant within the last 42 days, seen in the emergency room, and discharged
- With diagnosis of ectopic pregnancy
- With diagnosis of abortion complication
- With a postpartum admission (e.g., sepsis, retained placenta)
- With an antepartum admission who is not in labor
- With admission for a complication in labor or delivery
- With admission for normal labor and delivery

## Instructions

1. Randomly select 30 clients from the facility registers distributed over the past 12 months (or since the last record and register review). Make an attempt to choose at least one client from each category listed above.
2. Note the client record number and name and information needed to locate the client records.
3. Pull the first 20 client records you can find easily for review.
4. Review records and fill out the Client Record Review Form. Review records in a quiet area where the group can sit.
5. Check to see if the information listed in the form is filled out completely for **each** of the 20 clients, and put a tick mark (or ✓) if it is.
6. If the information is not filled out (*including if the information is only partially filled out*), put a "Ø".
7. For all information not completed (or for all Ø's), enter comments in the "Remarks" column. For items that are partially complete, specify what is missing in the "Remarks" column.
8. For each row, calculate the number of "ticks" (or ✓'s) out of the total number of records reviewed (20).
9. Calculate the % complete by multiplying the total out of 20 by 5.
10. For example, if 20 client records are reviewed in a facility register and 12 are complete for "diagnosis on admission", then 12 x 5 = 60% are complete for this information.

| Client Record Review Form | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RECORDS 1–10** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **Total /10** | **Remarks** |
| **Admission/discharge information** | | | | | | | | | | | | |
| Date and time of admission | | | | | | | | | | | | |
| Diagnosis on admission (e.g., normal labor, eclampsia, infection) | | | | | | | | | | | | |
| Vital signs on admission (blood pressure/ pulse/temperature) | | | | | | | | | | | | |
| Date and time of procedure, treatment, delivery | | | | | | | | | | | | |
| Date and time of discharge | | | | | | | | | | | | |
| **For complications** | | | | | | | | | | | | |
| Diagnosis (i.e., eclampsia, hemorrhage, postabortion complications, sepsis, or obstructed/prolonged labor) | | | | | | | | | | | | |
| Diagnosis time | | | | | | | | | | | | |
| Treatment | | | | | | | | | | | | |
| Treatment start time | | | | | | | | | | | | |
| **For labor client** | | | | | | | | | | | | |
| Vaginal exam details every four hours | | | | | | | | | | | | |
| Fetal heart beats | | | | | | | | | | | | |
| Completed partograph | | | | | | | | | | | | |
| Mode of delivery | | | | | | | | | | | | |
| Birth weight | | | | | | | | | | | | |
| Baby's condition | | | | | | | | | | | | |
| Qualification of attendant at delivery (e.g., doctor, nurse, midwife, traditional birth attendant [TBA], family member, other) | | | | | | | | | | | | |
| Medications (name, dose) used—written legibly | | | | | | | | | | | | |
| **For cesarean section, blood transfusion, uterine evacuation, laparotomy** | | | | | | | | | | | | |
| Start time and end time of procedure | | | | | | | | | | | | |
| Complications during procedure | | | | | | | | | | | | |
| Medications (name, dose) used—written legibly | | | | | | | | | | | | |
| Informed consent signed by client and doctor (Note: This may not be done in emergencies—if so enter "not applicable" or "N/A.") | | | | | | | | | | | | |

*continued*

Client Record Review Form *(continued)*

| Client Record Review Form | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RECORDS 11–20** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **Total /20** | **Remarks** |
| **Admission/discharge information** | | | | | | | | | | | | |
| Date and time of admission | | | | | | | | | | | | |
| Diagnosis on admission (e.g., normal labor, eclampsia, infection) | | | | | | | | | | | | |
| Vital signs on admission (blood pressure/ pulse/temperature) | | | | | | | | | | | | |
| Date and time of procedure, treatment, delivery | | | | | | | | | | | | |
| Date and time of discharge | | | | | | | | | | | | |
| **For complications** | | | | | | | | | | | | |
| Diagnosis (i.e., eclampsia, hemorrhage, postabortion complications, sepsis, or obstructed/prolonged labor) | | | | | | | | | | | | |
| Diagnosis time | | | | | | | | | | | | |
| Treatment | | | | | | | | | | | | |
| Treatment start time | | | | | | | | | | | | |
| **For labor client** | | | | | | | | | | | | |
| Vaginal exam details every four hours | | | | | | | | | | | | |
| Fetal heart beats | | | | | | | | | | | | |
| Completed partograph | | | | | | | | | | | | |
| Mode of delivery | | | | | | | | | | | | |
| Birth weight | | | | | | | | | | | | |
| Baby's condition | | | | | | | | | | | | |
| Qualification of attendant at delivery (e.g., doctor, nurse, midwife, traditional birth attendant [TBA], family member, other) | | | | | | | | | | | | |
| Medications (name, dose) used—written legibly | | | | | | | | | | | | |
| **For cesarean section, blood transfusion, uterine evacuation, laparotomy** | | | | | | | | | | | | |
| Start time and end time of procedure | | | | | | | | | | | | |
| Complications during procedure | | | | | | | | | | | | |
| Medications (name, dose) used—written legibly | | | | | | | | | | | | |
| Informed consent signed by client and doctor (Note: This may not be done in emergencies—if so enter "not applicable" or "N/A.") | | | | | | | | | | | | |

**DEATH REPORT REVIEW FORM**

Death reports should be completed for any client who dies within the facility. This death report should have a specific space to indicate whether or not the client was pregnant at the time of death or within 42 days of death. Since maternal deaths are often missed due to nonspecific diagnoses, such as "vaginal bleeding," this indication enables the capture of "maternal death," which is defined as death occurring within 42 days of the termination of a pregnancy.

## Instructions

1. Select all death reports of pregnant or recently pregnant female clients in the facility over the past year.
2. Review each death report for the presence of the information in the form below. Put a "tick" mark (or ✓) if the item is completed on the death report.
3. If the item is not completed (*including if the information is only partially complete*), put a "Ø".
4. For all items not completed (or for all Ø's), enter comments in the "Remarks" column. For items that are partially complete, specify what is missing in the "Remarks" column.
5. Fill out one sheet for every 10 death reports reviewed.
6. Use the "Comments" section for any additional notes about individual cases that you think are relevant for your discussions.

| Death Report Review Form | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | **Remarks** |
| Name and record number of client | | | | | | | | | | | |
| Noted if client was pregnant at time of death or within past 42 days | | | | | | | | | | | |
| Cause of maternal death (i.e., eclampsia, hemorrhage, postabortion complications, sepsis, or obstructed/prolonged labor) | | | | | | | | | | | |
| Neonatal outcome | | | | | | | | | | | |
| Autopsy result or note that autopsy refused (if autopsy available to facility) | | | | | | | | | | | |
| Reported to national level (if required, or put "not applicable" or "N/A") | | | | | | | | | | | |
| Case reviewed by staff | | | | | | | | | | | |

**Comments:**

## STATISTICS REGISTER REVIEW FORM

Service statistics showing monthly totals for deliveries, cesarean sections, etc., are gathered for review. Statistics are important for following the utilization of services and also the quality of care. They should be shared and discussed with staff. It may also be useful to present some key statistics in graph form and to post these visual representations in a place where staff can review them.

## Instructions

1. For the five statistics mentioned in the Key Statistics Register Review Form below (i.e., total number of births; number of cesarean sections; total number of complications; total number of maternal deaths; and number of early neonatal deaths and stillbirths), note if they are:
   - *Tracked* and recorded on a monthly basis
   - *Presented as a graph* showing progress over time
   - *Posted* in a place where staff can review them
   - *Discussed* periodically at staff meetings to celebrate successes or to determine if action is needed to correct any problems

**Note:** Staff may also graph and post additional locally relevant statistics; those listed in the key statistics register review tool are meant to serve as an example of important statistics for which posting in graph form may prove useful.

2. For each set of statistics mentioned in the comprehensive statistics register review tool below, note if they are:
   - *Tracked* and recorded on a monthly basis
   - *Discussed* periodically at staff meetings to celebrate successes or to determine if action is needed to correct any problems

In using the tool below, note the following marks:
   - "*" marks those statistics that should be followed in all facilities, regardless of level.
   - "#" marks those statistics that should be followed in all facilities where the procedures are performed.

## Key Statistics Register Review Form

| | Tracked | Graphed | Posted | Discussed | Remarks |
|---|---|---|---|---|---|
| *Total number of deliveries | | | | | |
| # Number of cesarean sections | | | | | |
| *Total number of complications** | | | | | |
| *Total number of maternal deaths | | | | | |
| *Number of early neonatal deaths and stillbirths | | | | | |

## Comprehensive Statistics Register Review Form

| | Tracked | Discussed | Remarks |
|---|---|---|---|
| **General** | | | |
| *Total number of deliveries | | | |
| * Number of maternal deaths *by cause* | | | |
| * Number of clients referred to another facility for pregnancy-related complications | | | |
| **Complications** | | | |
| Number of cases of hemorrhage (antepartum and postpartum) | | | |
| Number of cases of pregnancy-induced hypertension (pre-eclampsia and eclampsia) | | | |
| Number of cases of prolonged/obstructed labor | | | |
| Number of cases of ruptured uterus | | | |
| Number of cases of postpartum sepsis | | | |
| Number of postabortion complications | | | |
| Number of cases of ectopic pregnancy | | | |
| # Number of surgical complications (organ trauma) | | | |
| * Number of still births (fresh and macerated) | | | |
| * Number of early neonatal deaths | | | |
| **Procedures** | | | |
| * Number of assisted vaginal deliveries (breech, vacuum extraction, and forceps) | | | |
| # Number of cesarean sections | | | |
| # Number of manual removal of placentas | | | |
| # Number of postpartum hysterectomies | | | |
| # Number of repair of cervical tears | | | |
| # Number of uterine evacuation procedures (MVA and D&C) | | | |
| # Number of salpingectomies for ectopic pregnancy | | | |
| # Number of blood transfusions related to pregnancy | | | |
| **Infections** | | | |
| # Number of infections of abdominal incision | | | |
| # Number of infections of the bladder (catheter-related) or intravenous (IV) site | | | |

** Includes the five major complications of pregnancy: eclampsia, hemorrhage, postabortion complications, sepsis, and obstructed labor.
  * = statistics that should be followed in all facilities, regardless of level
  # = statistics that should be followed in all facilities where the procedures are performed