Table S1. Checklist to assess the quality of the NMCR cycle at hospital level and matrix to develop local recommendations

Checklist to assess the quality of the NMCR cycle at hospital level and matrix to develop local recommendations

Facility name _____ _____ Date _____

INSTRUCTIONS

Sources of information:

- ► Direct observation and evaluation of a NMCR session
- ► Discussion with participants
- ► Discussion with coordinators and managers
  - ➢ Documents from the NMCR sessions: Records/notes of the sessions: templates, cases summaries, summary of the interviews with women and other care-takers (family, documents in support of the recommendations and their implementation, other related documentation (photo etc.)
- ► Other related documents:

  National documents
  - ➢ National policies, and guidance documents
  - ➢ National clinical guidelines
  - ➢ National documents related to quality assurance, monitoring and supervision
  - ➢ National summary reports on NMCR implementation

  Local documents
  - ➢ Regional/local policies, and guidance documents
  - ➢ Local clinical protocols and standards for care provision
  - ➢ Local documents related to quality assurance, monitoring and supervision
  - ➢ Local summary reports

Reference: the reference for all key items is the WHO manual "How to implement the maternal Near-Miss Case Review (NMCR) cycle at hospital level"

Methods of scoring:

1) Score each single item as follows: Score 0= totally inappropriate; Score 1= major problems; Score 2= some deficiencies; Score 3= appropriate.
2) In the blue row calculate the mean of the scores for each key item in the group. This is the score for that group of items.

	SCORE	Comments
INTERNAL ORGANISATION/PREPARATION		
1. A local written procedure to implement the NMCR cycle exists		
2. Support from management is adequate		
3. Regular meetings are held		
4. Each meeting has adequate duration		
5. All key staff involved in the NM case is invited to the session		
6. Very limited (and justified) participation of people who were not involved in the management of the NM case reviewed		
7. All material need is prepared before the session		
CASE IDENTIFICATION AND SELECTION		
8. The agreed NM definition is used (same definition in all the country)		

9. The NM cases are correctly identified		
10. A NM case is appropriately selected for review among those identified		
GROUND RULES		
11. Ground rules for the NMCR are respected, especially confidentiality, respect of other people's opinion and refrain from blaming single individuals		
NMCR SESSION: CASE PRESENTATION		
12. The case is appropriately summarised and presented by one participant (paper copies; flip charts; slides)		
13. A "door to door" reconstruction, with all relevant details, is provided by all staff involved in care provision		
14. The clinical records of the patient, whose case is reviewed, are available during the meeting, if additional information is needed		
NMCR SESSION: INCLUSION OF USERS VIEWS		
15. The opinions of the woman (*i.e. informative contents on real facts, and her perceptions and views*), and if appropriate of relatives and/or friends, is collected (interview), for each NM case reviewed		
16. The interview(s) is/are appropriately summarised and presented		
17. The key findings from the interview (i.*e. same definition as above*) are appropriately taken into consideration in the case analysis		
18. The key findings (i.*e. same definition as above*) from the interview are appropriately taken into consideration for the prioritisation and development of solution		
NMCR SESSION: CASE ANALYSIS		
19. The case-analysis is performed following a structured analytical approach		
20. The case management is analysed from admission to discharge: a "door to door" approach is used		
21. The case is reviewed comparing actual management versus evidence (clinical guidelines, protocols and standards)		
22. The positive aspects of care provision ("what we did good") are identified and documented		
23. The staff is praised for the positive aspects of care provision		
24. The critical aspects of care ("what did not go well") are appropriately identified, focusing on the most important issues ("getting to the real point")		
25. The real underlying reasons for substandard care ("why but why?") are identified, discussed and documented		
26. The facilitator ensures that ground rules are respected, all steps of the session are completed, notes are taken		
27. Staff of all types and roles (including midwives and nurses) actively and openly participate in the case analysis		
28. The results of the case-analysis are documented (using the templates)		
NMCR SESSION: DEVELOPMENT OF RECOMMENDATIONS		
29. A list of SPECIFIC recommendations linked to the NM case is always developed, including responsible people and timelines		
30. The recommendations target the main problem (s) and the main underlying factors		

31. Most of the recommendations refer to actions to be carried forward at the hospital performing the review		
32. The recommendations use as reference clinical guidelines, protocols and standards		
33. The recommendations are SMART (specific, measurable, achievable, realistic, time-bound)		
34. The recommendations give due consideration to women's rights in hospital: effective communication, emotional support, respect and dignity		
35. The recommendations include an adequate division of tasks among hospital staff		
36. Recommendations that need action at regional/national level are effectively identified		
37. The facilitator ensures that ground rules are respected, all steps of the session are completed, notes are taken		
38. Staff of all types and roles (including midwives and nurses) participate actively and openly		
39. The recommendations are documented (using the templates)		
IMPLEMENTATION OF RECCOMENDATIONS		
40. The agreed recommendations are implemented (at least 75%)		
41. Managers/local health authorities actively support implementation of recommendations		
42. The implementation of recommendations is documented (using the template)		
NMCR SESSION: FOLLOW UP		
43. The NMCR session starts with a follow up of the previous session, checking that recommendations have been implemented		
44. In case the agreed actions were not taken, reasons are discussed, and a new recommendation is developed, including responsible people and timelines		
DOCUMENTATIONS ON THE NMCR CYCLE AND EFFECTIVE DIFFUSION OF RESULTS - AT FACILITY LEVEL		
45. A folder is kept for each NM case containing all key documentation, including the follow up phase (see manual); cases are recorded in a register/log book		
46. At hospital level, an appropriate summary of relevant information regarding the NMCR cycle is regularly disseminated and discussed, without compromising confidentiality, among staff, managers, and health authorities (see manual)		
47. Effective communication of key information is provided by hospital coordinators to national coordinator(s)		
ENSURING QUALITY IN THE NMCR CYCLE		
48. Collaboration of the local team with the national/regional coordinator has been effective		
49. Periodical evaluations of the quality of the NMCR has been planned		
50. Previous recommendations from quality assessment has been taken into consideration and translated into actions		

SUMMARY TABLE

MAIN STRENGTHS: **1.** **2.** **3.** **4.**
MAIN WEAKNESSES: **1.** **2.** **3.** **4.**
COMMENTS: **1.** **2.** **3.** **4.**

MATRIX. Recommendations for improving the quality of the NMCR cycle at hospital level (expand as needed)			
Priority areas that need to be improved	**Action agreed**	**Responsible person**	**Timeline**

Table S2. Reported impact of the NMCR on quality of care at facility level

- Use of national clinical guidelines
- Development and use of protocols at facility level (for doctors and for midwives) for obstetric complications (eg post-partum haemorrhages, eclampsia, sepsis)
- Development and implementation of standards of care
- Development of capacities among staff of all levels (doctors, midwives, nurses) to critically analyse cases identifying real underling reasons for near-miss (eg lack of organisation or lack of communication), comparing management to guidelines, protocols and standards of care, and to successfully carry forward a self-assessment
- Improved autonomy of mid level staff, in particular midwives providing first emergency care without doctors
- Availability of emergency team 24/24h in case of emergencies ~~case~~
- In the admission and on labour ward, a system in place which allows to call all relevant staff in case of an emergency (emergency button)
- Availability of emergency lab 24/24h
- Availability of staff 24/24h in the event of a need for blood transfusion, especially in rural areas
- Set up of separate room for managing emergency cases
- Availability of emergency kit for managing emergency cases
- Improved availability of essential drugs, such as misoprostol, i/v antihypertensive
- Enhanced collaboration between clinical staff and management of the facility, for improving practical aspects of organisation of care (eg supplies, maintenance, staff shifts)
- Development of clear job description to specific roles and responsibilities, facilitating effective team work
- Improved monitoring after caesarean section and/or obstetric complications (eg training and use of checklists)
- Improved team work
- Reported improvement in quality of care delivered *

*not further specified in available local/national reports.