Use of criterion-based clinical audit to improve the quality of obstetric care: a systematic review
Kongnyuy EJ, Uthman OA

CRD summary
The authors concluded that criterion-based audit has been used to improve quality of obstetric care from one perspective, namely the midwives/doctors’ perspective. Although methods used to conduct the review were not reported, the authors’ conclusions reflected the evidence and seem likely to be reliable.

Authors’ objectives
To examine the use of criterion-based audit to improve the quality of obstetric care as perceived by midwives/doctors and women/mothers.

Searching
MEDLINE, EMBASE and the Cochrane Central Register of Controlled Trials (CENTRAL) were searched from inception to June 2008. Search terms were reported. In addition, unnamed specialist journals and reference lists of identified studies were handsearched. No language restrictions were applied to the search.

Study selection
Eligible for inclusion were randomised controlled trials (RCTs) and non-randomised studies that compared criteria-based audit with no intervention or any other intervention; criteria-based audits that compared results of an initial audit with results of a re-audit (before/after studies); and criteria-based audits that compared different types of feedback in pregnant, labouring or postpartum women receiving care in a health care setting. Studies had to objectively measure provider performance, health outcomes or women/mothers’ perceptions of care. The review defined criterion-based audit as ‘an objective, systematic and critical analysis of the quality of health care against set criteria (standards) of best practice’. Studies of women experiencing abortion or miscarriage were excluded.

All of the studies evaluated midwives/doctors perceptions. None of the studies compared different types of feedback. The method of feedback was unclear in about half of the studies; most studies provided feedback via educational meetings either alone or in combination with another feedback method. The included studies conducted audits on ten different areas of obstetric care. Areas examined in more than one audit were caesarean section and pre-eclampsia/eclampsia; other areas examined were emergency obstetric complications; induction of labour; third degree perineal tear; external cephalic version for breech presentation; pregnancy hand-held records; antenatal corticosteroids; intrapartum group B streptococcus prophylaxis; and early diagnosis and treatment of pregnancy complications. Studies assessed a wide variety of outcomes (details were reported).

The authors did not state how papers were selected for the review.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
Dichotomous data were extracted as odds ratios (ORs) and 95% confidence intervals (CI) and continuous data as means and standard deviations. Where only median values were reported, these were assumed to be equal the mean and standard deviations were estimated from ranges.

The authors did not state how data were extracted for the review.

Methods of synthesis
The studies were grouped by medical condition (antenatal care, peripartum care, emergency obstetric complications and
caesarean section) and generally combined in a narrative synthesis. Where appropriate, pooled odds ratios and 95% confidence intervals were calculated using a fixed-effect method in the absence of significant heterogeneity and random-effects models when significant heterogeneity was found. Heterogeneity was assessed using the $\chi^2$ test.

**Results of the review**

Nineteen studies were included ($n=32,972$ participants). These included one RCT ($n=2,496$ participants) and 18 before/after studies. Sample size ranged from 16 to 21,125 participants.

Eighteen of the 19 studies reported significant improvement in at least one standard measured; in the nineteenth study, the method of feedback was unclear.

Results of multiple outcome measures were reported for antenatal care, peripartum care, emergency obstetric complications and caesarean section.

The RCT reported that hospitals receiving an opinion leader educational intervention had a reduction in inappropriate caesarean sections compared to control hospitals or hospitals receiving criterion-based audits. The reviewers stated findings were difficult to interpret due to co-interventions.

**Authors' conclusions**

Criterion-based audit was used to improve quality of obstetric care from one perspective, namely the midwives/doctors' perspective.

**CRD commentary**

The review question was clearly stated and inclusion criteria were appropriately defined. Several relevant sources were searched. Attempts were made to minimise language but not publication bias; the potential for publication bias was acknowledged. Methods used to select studies and extract data were not described, so it is not known whether efforts were made to reduce reviewer errors and bias.

Study validity was not assessed, so results from these studies and any synthesis may not be reliable. Studies were generally pooled in a narrative synthesis. Findings from the RCT were discussed separately, with some comment on methodological issues.

Although methods used to conduct the review were not reported and validity was not assessed, the authors’ conclusions reflected the evidence and seem likely to be reliable.

**Implications of the review for practice and research**

**Practice:** The authors stated that audit should be considered as a method of improving the quality of care in maternity units from women's/mothers’ perspective.

**Research:** The authors stated that well-designed RCTs are required to evaluate the effectiveness of different types of feedback. There is a need for improved reporting of: methods used to set standards and make baseline measurements; feedback methods; targeted behaviour; and description of participants.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.