Special Article

Audit in Maternal and Child Health

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ABSTRACT

Audit in medicine is a well tried means of assessing the quality of practice by using acceptable measures of outcome. Audit in maternal and child health has been limited to fatal outcomes such as maternal and perinatal deaths. The outcome of audit is of interest to the providers, the health authorities and the consumers. The utility of audit lies in effective use of data to improve quality of service. Quality control of instruments and education of junior staff are some other benefits of audit. The limitations of manpower, money, means, fear of litigation and above all dislike of clinicians for handling data are hurdles in the way of effective audit. The concept of 'Standard Primipara' and 'Total Fetal Wastage' are likely to add new dimension to perinatal audit.

Key words: *Medical audit, Maternal and child health, Obstetric audit, Perinatal audit.*

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The saying that "Self analysis or introspection is the secret of success" holds good as much for an institution or **a** system as for an individual. Audit in medicine is a well tried means of assessing the quality of practice by using acceptable measures of outcome. Traditionally, audit in maternal and child health care has been limited to only fatal outcomes such as maternal or perinatal deaths(l,2). Of late, there has been an increase in litigations in the medical practice. The purpose of the present communication is to critically analyse the process of audit, its clinical applications and implications as well as the limitations with particular reference to maternal and child health.

The maternity services in developed countries like Great Britain and Australia have a long history of undertaking regular clinical audit, *e.g.,* 'Confidential enquiry into maternal deaths in England and Wales' and 'National perinatal mortality survey'(2-4). Individual maternity units have also issued annual reports reviewing clinical practice and outcome.

As far as our own country is concerned, no such organized audit is undertaken at national level. The data regarding the MCH care is mainly derived from the Sample Registration System (SRS), Model Registration System (MRS), the census and sometimes from micro level studies or occasionally, the multicentric hospital based or community based studies by organizations like Indian Council of Medical Research (ICMR), National Neonatology Forum (NNF) and Federation of Obstetric and Gynecological Societies of India (FOGSI)(5-9).

What is Audit?

Audit is neither a routine data

collection, nor is it research. Audit is concerned with the way that the currently accepted methods of care or management are put into practice. It helps a periodic review and mid course modifications of methods in practice: a unit of inbuilt evaluation exists in audit. A distinction can be made between audit and research; audit is to ensure that clinicians carry out existing management protocols efficiently, and research is the development and improvement of management protocols. Thus, audit is concerned not only with optimal care but also with cost effective use of limited resources(l0).

Audit Cycle

In epidemiology we ask questions like (a) What is the event (the problem)?; *(b)* What is its magnitude?; (c) Where did it happen?; *(d)* Who are affected; and *(e)* Why did it happen?(11), but in case of audit, we ask Uiree questions: *(i)* What do we think we are doing?; *(ii)* What are we really doing?; and *(iii)* How can we improve what we are doing? This constitutes the first phase of audit cycle. During an audit cycle those involved in the process set standards of care and then compare their practice to these standards. If the practice falls short of these standards, either specific recommendations to improve the practice should be made, or possibly standards should be reset. To complete the cycle, the result of these recommendations should be monitored (Fig.1)(12).

Audit in maternal and child health is most easily understood at a unit level in the hospital or at a primary health centre/ subcentre level in the community. It is possible to examine individual case records to assess the standards of recording. Records could also be examined against agreed protocols. This should be followed up by an appropriate initiative to improve the education of staff. A second review after a reasonable interval, completes the audit cycle *(Fig. 2)*.

Scope of Audit

The outcome of audit will be of interest to three groups of persons: *(i)* The providers-Health professionals such as obstetricians, pediatricians, perinatologists and midwives; *(ii)* Purchasers-The health authorities; and (HI) Consumers-The patient and their relatives.

A system of audit must supply information that is both credible and of interest to

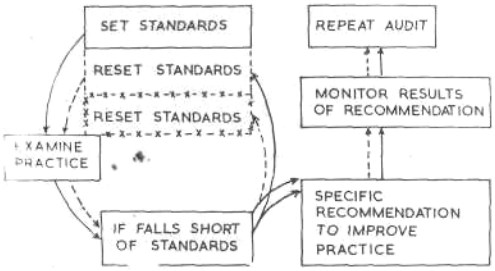

Fig. 1. The audit cycle.

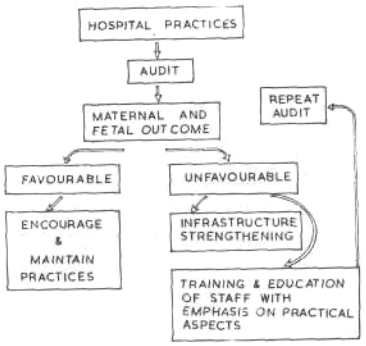

Fig. 2. Scope of audit

health professionals, managers and consumers. The information should be suitably adjusted for populations for valid comparisons to be made from one community to the other or between hospitals. It should be preferably presented in an easily understood visual representation of digested data(l).

For the inter-unit, inter-hospital or inter-regional comparison, corrections must be made for high risk variables, viz., parity, extremes of age, short stature, maternal anemia, malpresentations, multiple pregnancy, previous obstetric complications, pretcrm births, intrauterine growth retardation, perinatal care and level of neonatal intensive care facilities, *etc.* Paterson *et al.(2)* suggest that intervention rates should be measured against a tightly defined sample of 'standard primiparae' which is designated to eliminate the confounding effects of age, ethnic origin, race and geography. This has the major advantage of simplicity over the alternative means, *i.e.,* multivariate analysis, in which statistical techniques are used to take into account the many variables present in a population sample. The use of such a clearly defined sample opens up real possibilities for seeking to explain and possibly change the rising incidence of operative delivery(1,2).

Traditionally, audit in maternal and child health (MCH) has been concerned with survival of mother and child (maternal, perinatal, neonatal and infant mortality rates). In developed countries, these mortality parameters have currently been of progressively decreasing value for audit because the mortality rates have decreased to very low level. Therefore, the morbidity rates are likely to find more attention in the days to come. Currently, the concept of "total perinatally related wastage" (death before 28 weeks and after first week can be classified into the same pathological categories as applied to conventional perinatal deaths) to achieve a more realistic assessment of pregnancy loss and to clarify where priorities for research, prevention and management should lie is also gaining popularity (13,14). Valuable lessons can also be learnt from what is called the "near miss," *i.e.,* those cases where although the outcome is satisfactory, shortcomings of management provide lessons for the future(l,2). However, in most of the developing countries, the mortality rates are still unacceptably high and will serve for quite sometime to come as the standard for audit in maternal and child health(15-18).

Application of Audit to Alter Health Care Practice

Audit in MCH care is thus not an end in itself but it is merely a means of improving outcome. Audit will not be effective unless data are used to maintain or improve the service provided to the consumer(19). Health professionals involved in MCH care are unlikely to change long established practice unless they are convinced that such a change will result in an improved outcome for their patients. It is essential to obtain confidence of those involved in the exercise by ensuring that they are integral part of the process. They should also be involved at the start in the interpretation of data, formulating recommendations emanating from the results and in determining how these recommendations should be implemented. Bhat and Puri(20) observed that mean consultation of time was 5.2 minutes at the Outpatient Pediatric Department of a teaching hospital while the mean waiting time in the hospital was 167.7 minutes. Simple reorganization of work pattern also can facilitate the patient care as well as medical manpower management. Regional perinatal

health care systems, through periodic reviews, may identify potentially preventable deaths in small hospitals in which normally low neonatal death rates may mask previously unconsidered problems(21). In a nationwide survey conducted by the National Neonatology Forum in 1987, none of the responding medical colleges or institutions had adequate Level III facilities whereas Level II facilities with grossly inadequate doctors (62%), nurses (88%) and monitoring facilities (80%) were available in 66.6% of the neonatal units.

The ICMR Survey(18) of over 100 primary health centres and subcentres carried out on quality of MCH care services revealed abysmally low quality of antenatal and intrapartum care provided at primary health centres and subcentres. There was lack of even basic facilities such as weighing scale, BP record, urine analysis and essential drugs in all such centres. The various components of Level I neonatal care like environmental temperature control, anticipation and management of birth asphyxia and detection with appropriate referrals of 'at risk' neonates were non-existent in most of the primary health centres. ICMR is currently experimenting upon the intervention strategies for improving the quality of maternal and child health care by *(i)* re-orientation of training of the medical officers and health functionaries at PHC and subcentre level, *(ii)* community education, *(iii)* decentralization of targets for MCH and family planning, and *(iv)* development of a referral system. The initial process indicators, after two and half years of intervention period, show that the underlying process such as antenatal registration, identification of high risk mothers and infants, minimum services rendered to the registered mothers and referral of high risk cases have improved(23). External audit has been advocated as one of the strategies for reducing the rising rate of Cesarean section(24). Similarly, prescription audit can be done by a peer and this will definitely help to see retrospectively which might have been committed and helps one to take corrective measures(25). Quality control of instruments and equipments utilized for. health care is also one of the utilities of 'Medical Audit'.

Educational Value of Audit

Education is one of the great benefits of audit and possibly the most useful(26). It is also an useful tool in the assessment of the education and training of the junior staff.

Improvement in Record Keeping

There is likelihood of improvement in note keeping since there is a clear positive correlation between good and concise note keeping and good management. Prakash and Swain(27) have stressed the need for a combined mother and child health card. This will not only facilitate good MCH care but also will facilitate audit. To enable regular audits to be held accurate record keeping is absolutely essential(28).

Limitations and Problems

1. All of us are aware of increasing litigations in medical practice. There is a concern that the process of audit and critical self-examination will provide ammunition for lawyers. The litigation is likely to result in defensive approach (health professionals will be tempted to produce strict protocols for care) and it might discourage innovations in management.

2. *Time* is to be made available and some clinicians are to be encouraged to devote time to become experts in this field.

3. If audit is to be done properly, more money and manpower would be needed.

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