Iranian J. Publ. Health, 1999, Vol. 28, Nos. 1 - 4

QUALITY ASSESSMENT OF ANTE-NATAL CARE USING THE METHOD OF LOT QUALITY ASSURANCE SAMPLING

Sh. Salarilak[1], PhD; A. Gashtasbi[2], PhD; A. Nadim[2], PhD

Key words: *Ante-natal care, evaluation, quality assessment, lot quality assurance sampling*

Abstract

To determine the coverage rate, timeliness and quality of ante-natal care in rural areas under the coverage of Health Houses in West Azarbaijan province, 30 Health Houses (HH) were randomly selected out of 731 HH in the province. In each HH, using the method of Lot Quality Assurance Sampling (LQAS) 28 women having recently born babies were selected.

Data were collected using check-list for facilities, and questionaires and forms to be completed from the files by interview.

The study showed that the method of LQAS is quite effective for evaluation of this service at HH level. The weighted total coverage of ante-nateal care was 46.2%. Quality of care was acceptable for 53.9% of mothers. The wighted average of time liness of care was 49.8%. Availability of facilities in delivery of this service was 100% showing there was no short comings in this respect.

Introduction

Maternal and child health programs are carried out to reduce mortality and morbidity due to various causes both in mothers and in children. One of these programs in ante-natal care the purpose of which is the reduction of maternal mortality, decreasing the complications of pregnancy and safe guard the health of mother for delivering a health baby.

Ante-natal care for each mother includes a number of health service activities as follows:

- Preparation of health file.

1- Provincial Health Center, West Azerbaijan, Iran.

2- Dept. of Epidemiology and Biostatistics, School of Public Health and Institute of Health Research, Tehran University of Medical Sciences, P.O.Box. 14155-6446, Tehran, Iran.

- Clinical examination of each time (measurement of height, weight, blood pressure, auscultation of the heart beats of fetus, listening to the complaints of mother and giving necessary instruction,
- Referral to the laboratory for a given set of tests,
- Examination by a physician or an experienced midwife during the last trimester of pregnancy to be sure about the situation of the fetus,
- Anti-tetauns vaccination during pregnancy,
- Identifying at risk mothers and sending them for specific cases,
- Treatment of any medical problem mother may have,
- Dental care (at least once every 3 mothers),
- Arranging health education classes for, mothers,
- Giving 30 iron tablets each month (from 4th month enward),
- Instruction about proper diet and nutrition,

According to the reports of the Ministry of Health and Medical Education (MOH) in 1985, maternal mortality rate (MMR) in Iran was 77 per 100000 live births in urban areas and 233 in rural areas.

With arrangements for ante-natal case as part of primary health care (PHC), these figures were reduced to 26 per 100,000 live births in urban and 53 in rural areas.

Although reports are encouraging on the coverage of pregnant women by this service, quality of care has not been studied and it is not known to what extent all the above services take place on time.

A preliminary investigation in Greater Tehran has shown that quality of care was not at an acceptable level in MCH centers (6).

Evaluation of the efficiency and effectiveness of each health service, usually a cluster sampling of the units is carried out which gives a total picture of quality. Lot quality assurance sampling (LQAS) enables us to identify those units in which quality of case in not acceptable and to implement necessary measures to improve the situation (8).

This paper reports the results of quality assessment of ante-natal case in rural population of West Azerbaijan province in 1996 using the method of LQAS.

Material and methods

Houses (HHs).

As menthioned before, we used the method of LQAS which has the capacity of evaluating quantitative and qualitative aspects of services by selecting relatively small samples (9).

According to LQAS methods, the following steps were taken:

1- Identification of services to be evaluated,

2- Identification of all units in the province delivering these services,

3- Selection of a sample out of these units,

4- Indentification of mothers who should have been users of these services (all mothers having children 10 to 36 months of age in rural areas under study),

5- Deciding on a triage system for classification of units into high, medium and low level of acceptability according to the rules of LQAS. For this purpose, we selected 80% for high acceptability and 50% below which the service is unacceptable. The figures were used for evaluation of coverage and sufficiency. As regard quality of care, we selected the figures of 60% and 30% because otherwise, the majority of units would fall into groups with unacceptable level,

6- Lowest combined provider risk and consumer risk were identified and on this basis, according to LQAS tables, number of cases to be studied in each unit was identified as 28 (8).

To carry out this study, we selected 30 HHs out of 731 existing in the province. Check-lists and forms were prepared according to instruction manuals of the MOH. Interviewers were trained for collection of data under direct supervision of the senior author. Data analysis was carried out using EPI 6 and SPSS softwares.

Results

Table 1 shows the situation of coverage of ante-natal care services. The details of what is shown in the table are as follows:

1- Coverage of ante-natal care (life availability) weighted average was 89.7%. In all 30 HHs this was above upper acceptability level (UAL);

2- provision of complete ante-natal care services (at least 9 out of 12 necessary

visits during pregnancy) weighted average for this item was 49.7%. Only 3 HHs reach UAL. Twenty HHs were at medium acceptability level (MAL) while 5 of them were below low acceptability level (LAL);

3- Knowledge of mothers about the intervals of the visits- Weighted average for this item was 89.2%. All 30 HHs were above UAL;

4- knowledge of mothers about importance of ante-natal care- Weighted average for this item was 78.6%. Twenty seven HHs were at UAL, 2 at MAL and 1 at LAL;

5- Complete ante-natal care according to the recommendations of MOH-Weighted average for this item was only 49.6%. Although we decided to change upper level to 70% and lower level to 40%, only 3 HHs were at UAL , 22 at MAL and 5 at LAL.

Table 2, shows the quality of care in HHs under study the details of which are as follow:

1- Wieghted average of sufficiency of supplies, equipments and facilities was 76.7%. Twenty three HHs were at UAL and 7 at MAL;

2- Quality of ante-natal care (according to the instructions of MOH). Weighted average for this was 53.9%, although the upper level was reduced to 60% and lower level to 30%.

Even with this change, only 13 HHs were at UAL, 5 at MAL and 12 at LAL. This means that in most HHs, the quality of ante-natal care does not reach the standards identified by MOH.

Discussion

One of the advantages of using LQAS for quantitative and qualitative evaluation of the services is that it enables us to identify the units in which the quality of case is unacceptable so that it is possible to concentrate the efforts to improve the situation in these units. The present study was the first application of this method in Iran. We were interested to know its feasibility for evaluation of services and the results were encouraging.

Although this study has shown that comparing with some other services such as immunization, the coverage, quality and acceptability of ante-natal care is at a lower level , but comparing it even with industrialized countries, the

situation is almost the same. In the United States, only 56% of pregnant women are under coverage and only 32% of them receive all principal services (1,5). The situation is worse for women covered by private sector (5). In the same country, in women who are not seen according to the schedule for ante-natal care i.e. with longer interval between visits, there in higer probability of higher pre-term birth and also low birth weight babies (7).

In spain, three main factors in ante-natal care has been identified as weight of pregnant woman, visit in the first trimester and member of visits during pregnancy (2), it is also shown that ante-natal care program connot cover all pregnant women because many of them are seen by private obstetricians although many aspects of ante-natal care are covered by them (2,3).

The more the visits of ante-natal care in low-income women, the lower is the rate of low birth weight in their newborn babies(4).

In conclusion, this study shows that pregnant women in rural areas need better ante-natal care. To correct the inadequacies, we have to concentrate our efforts in units with unacceptable performance with emphasis on the following items:

1- Provision of supplies and equipments needed for ante-natal care,

2- Continuing education and supervision of staff in change of delivery of care,

3- Detailed investigation of situation in units with unacceptable level of care to find the specific reasons and to implement measures for their correction.

Acknowledgements

The authors have to thank all the staff of MCH Units and Health Houses of the provincial Health Center of west Azerbaijan for thier collaboration in carrying out of this study.

Table 1- Frequency distribution of the coverage of ante-natal care in 30 Health Houses, west Azerbaijan 1995

Serivce items	Coverage level		
	High	Medium (acceptable)	Unacceptable
ante-natal care for pregnant women	30	0	0
Complete care of pregnant women	3	20	7
Knowledge of women about the intervals of necessary visits	30	0	0
Knowledge of women about the importance of ante-natal care	27	2	1
Timeliness of services delivered	3	22	5

Table 2- Quality of ante-natal care in 30 Health Houses in west Azerbaijan , 1995

Serivce items	Level of acceptability		
	High	Medium (acceptable)	Unacceptable
Availability of supplies an equipments for the service	23	7	0
Acceptability of quality of care	13	5	12

Table 3- Overall evaluation of the quality of ante-natal care in rural areas of west Azerbaijan, 1995

Serivce items	Acceptability		
	High	Medium	Unacceptable
Availability of supplies and equipments for ante-natal care	+		
Quality of care		+	
Pregnant mother's file	+		
Complete care according to the number of recommended visits			+
Knowledge of mother about interoal of visit	+		
Knowledge of mothers about the importance of ante-natal care	+		
Timeliness of visits for ante-natal care			+

References

1- Clark K, Fu CM, Burnett C (1997): Accuracy of birth certificate data regarding the amount, timing and adequeay of prenatal care using prenatal clinic medical records as referentes. *American Journal of Epidemiology*. **145:** 67-71.

2- Diaz Sanchez S. et al (1993): The coverage and quality of the follow up in the prenatal care at a health center. *Atencion Primarica*. **12:** 401-6.

3- Goberna I, Tricos J, et al (1996): Evaluation of the quality of prenatal care. *Atencion Primrica*. **18:** 75-8.

4- Katz SJ, et al (1994): The adequacy of prenatal care and Incidence of low birth weight among the poor in Washington State & British Colombia. *American Journal*

of Public Health. **84:** 986 - 91.

5- Kogan MD, et al (1994): Comparing mother's reports on the content of prenatal care received with recommended national guidlines for care. *Public Health Reports*. **109**: 637 - 46.

6- Pak Gohar M (1996): Study on the quality of ante-natal care in women referring to Uraban Preventive and Curative Care Centers in Tehran. Thesis for a Master Degree, School of Nursing, Tehran University of Medical Sciences.

7- Petersen DJ, et al. (1994): Prenatal care utilization in minnesota paterns of concern, areas for improvement. *Minnesota Medicine*. **77:** 41 - 5.

8- Valadez Joseph J (1991): *Assessing child survival programs in developing countries*. Testing lot quality assurance sampling, Harvard University press.

9- Valadez Joseph J, et al (1996): Using LQAS to assess measurments for growth monitoring in a developing country's Primary Health Care System. *International Journal of Epidemiology*. **25**(2): 381-7.