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Establishing a blood bank at a small hospital, Anambra State, Nigeria


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Abstract

Preliminary studies: A facility review at Enugu-Ukwu General Hospital in Anambra State revealed limited blood transfusion and no blood storage capabilities. Focus groups indicated fears and misconceptions in the population regarding risks of blood donation and transfusion. Interventions: In 1994, a blood bank was established, including a refrigerator, backup generator, reagents and supplies. Refresher training was provided to the laboratory technologist. A public education campaign was launched one year later to encourage blood donation and dispel fears of transfusion. Results: Voluntary blood donations increased in the hospital from zero units before the program to 15 in 1995. Transfusions increased from three in 1993 to 17 in 1995. Eight of the 17 were for obstetric cases. No donations or transfusions occurred until six months after the establishment of the blood bank. Problems encountered in obtaining the cooperation of hospital management may partly explain the delayed response. Costs: The cost of establishing the blood bank was US $8800: 51% material costs and 42% training. Conclusions: Improving the availability of blood at small hospitals need not be very expensive. Community education activities may increase blood donation, but sustained efforts are likely to be required. Ministry of Health (MCH) involvement is important to the success of interventions in government hospitals. © 1997 International Journal of Gynecology and Obstetrics

Keywords: Africa; Nigeria; Maternal mortality; Obstetric services; Community; Blood; Cost

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1. Introduction

Studies of maternal deaths in West Africa find that obstetric hemorrhage is very often the immediate cause. For instance, Chukudebelu and Ozumba [1] found that hemorrhage ranked second among the causes of maternal mortality in 10 hospitals in Anambra State, Nigeria, and was responsible for nearly 25% of hospital deaths over a 10-year period. The overall objective of the operational research reported here was to prevent these deaths by improving case management through ensuring the steady availability of blood for transfusions in a referral hospital.

The research was conducted in Anambra State by the Prevention of Maternal Mortality (PMM) Network's team in Enugu. The PMM Network is a multidisciplinary program created with funds from the Carnegie Corporation of New York for research designed to improve both access to emergency obstetric care and the quality of services. There are seven PMM teams in Nigeria, two in Ghana, two in Sierra Leone, and a technical support team based at Columbia University in the United States.

The PMM Enugu team conducted a preliminary study related to emergency obstetric care in rural communities in the Njikoka Local Government Area and among medical facilities with maternity services. They identified the following factors as obstacles to emergency treatment:

- Near absence of health facilities in some of the communities;
- Lack of drugs and equipment at facilities;
- Absence of effective blood transfusion services;
- Lack of basic first aid skills among the midwives at the primary health centers;
- Poor knowledge of obstetric complications in the community; and
- Negative attitudes among the people toward blood donation.

Based on the preliminary study, the PMM team selected three interventions: (1) training community contact persons to facilitate referrals to an appropriate health facility when obstetric complications arise and to increase knowledge of complications in the community [2]; (2) collaborating with private sector hospitals to improve their capability to provide emergency obstetric care [3]; and (3) establishing a well-equipped blood bank with a skilled technician at Enugu-Ukwu General Hospital. A community health education campaign was conducted to increase awareness of obstetric complications and to encourage blood donations and the acceptability of transfusions.

2. Study area

The study area was Njikoka Local Government Area, which is made up of seven rural communities situated about 10 km south of Awka, the capital of Anambra State. It has an area of 347 km² with an estimated population of 450,000. The health facilities are one government hospital, three private maternity hospitals, one maternity home, five health centers and one comprehensive hospital. The population is predominantly Ibo and Christian.

3. Activities

The PMM team met with officials of the State Ministry of Health (MOH) and the management of the Enugu-Ukwu hospital to explain our objectives and also to exchange ideas on installation and utilization of the blood bank. The various stages of the project, including the release of a laboratory technician for re-training, were discussed. The technician was later released to be trained in the theory and practice of using laboratory screening equipment, including screening for HIV, at the University of Nigeria Teaching Hospital, Enugu.

The PMM project then arranged for the refurbishing of the very limited blood bank facilities at Enugu-Ukwu General Hospital. Equipment for performing transfusions and screening blood for infectious diseases was bought and installed. A refrigerator, other storage equipment and a generator (to serve as backup during blackouts) were provided. The blood bank was officially commissioned in April 1994 at a colorful ceremony at Enugu-Ukwu by the Anambra State Military
Administrator, represented by the State Commissioner for Health. This marked the formal handover of the facilities by the PMM team to the State MOH. In keeping with the enthusiasm shown at the commissioning ceremony, the PMM team had high hopes that the facilities would be put to maximum use in the shortest possible time.

4. Results

The blood bank remained grossly underutilized for six months after it was commissioned. This lack of use was attributed to both problems in staff availability and the lapse of almost one year before the community education campaign to inform the people of the availability of the facility and the need to use it. In the months before the campaign there was not one blood transfusion or donation at the laboratory. This was not unusual since the hospital had only three transfusions and no voluntary donors in the year before the blood bank was refurbished.

Fig. 1 shows the number of transfusions for obstetric cases and for other hospital cases each month during 1995. Transfusions for all hospital cases increased to 17 in 1995. Eight of the 17 were related to obstetric complications; five occurred in September following the health education campaign. All maternity cases that required blood received a transfusion, and the one maternal death in the hospital in that year was due to infection. It is likely that others died at home or on the way to the hospital.

In the course of the study, it was discovered that part of the problem of non-utilization of the blood bank stems from the fact that most of the time, particularly at night and weekends, the laboratory technologists and the doctors are at private hospitals and are not within reach. The PMM Enugu team tackled this problem by refurbishing call-duty rooms for the doctors and for laboratory technologists who are also on call. The rooms are yet to be put into full use almost one year after being refurbished, and the problem of doctor and technician availability has not been resolved.

The total cost of upgrading the blood bank was US $8800. The PMM project contributed 100% of the costs of materials to equip the hospital laboratory for blood donations and storage, for a total of US $4972 (Table 1). Government contributions for venue, refreshments, staff allowances (not including staff salaries), and training covered 5% of the total costs.

5. Discussion

Prior to the provision of blood bank facilities at Enugu-Ukwu General Hospital there were few cases of transfusions. Blood donation was virtually non-existent. This was a serious problem for
maternal hemorrhage in particular since both private and public health institutions depend on Enugu-Ukwu General Hospital as their referral center. In response to the problem, the PMM team established the blood bank but it was not used until about one year later. The number of transfusions then increased substantially to a total of 17 in 1995, eight of which were for obstetric cases. This increase in the number of donations and transfusions is attributed to the health education campaign to inform people of the availability of the facility and the need to use it for emergency cases. The last months of 1995 witnessed a substantial decline in the number of blood transfusions, due to the strike action embarked upon by the health workers in the state. Family members (usually the spouse or parents) now appear to be more willing to donate blood for their sick relatives. Out of the 17 patients receiving transfusions, the blood for only two was paid for, and the rest came from voluntary donors. All the donations came from family members who have no option other than to save their sick relatives. Other voluntary donors are hard to come by, which means that the blood bank is well equipped for transfusions, but will not be used often for storage in the near future. It is obvious from the records that the number of blood transfusions is still relatively low when compared with the study area population of women aged 15-49 (estimated to be about 120,000). This low level of response can be largely attributed to the following factors:

- unavailability of a doctor skilled in obstetrics and blood bank techniques on call, in spite of the call-duty room refurbished by the PMM project. This has prevented emergency treatment at the hospital, especially at night;
- lack of commitment by the hospital management in the campaign to encourage blood donation;
- lack of commitment by the State MOH, in the use of the blood bank facilities; and
- delay in educating the community about the importance of blood donation and transfusions.

7. Conclusion

This project demonstrated that the blood bank and the skills of a technician can be upgraded at a moderate cost. It also demonstrated that community health education is necessary if the facility is to be used. Some change in negative attitudes towards blood donation, and transfusions may be inferred from the increase in transfusions, but community education campaigns need to be repeated in order to maintain these effects.

The cooperation of the officials and doctors is necessary for this kind of intervention to be suc-
The State MOH and the hospital management need to be involved to stimulate the appropriate use of the blood bank facilities and increase the number of willing blood donors. They can do this by mounting intensive public enlightenment campaigns on the need for blood donation and transfusion. Doctors and laboratory technicians need to be available for emergency referrals to the hospital, especially at night, if maternal deaths are to be prevented.

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