

Pakistan: The Faisalabad Obstetric Flying Squad^a

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Introduction

Providing access to obstetric emergency services is a major obstacle to reducing maternal mortality. Whereas rural areas suffer from lack of transport, in urban areas the problem tends to be financial barriers to effective use of transport especially among the poor. In Faisalabad in Pakistan an initiative of the Mother and Child Welfare Association of Faisalabad (MCWAF) seeks to overcome such problems among the urban poor. This represents a good example of providing outreach services, bringing together traditional birth attendants (*dais*), lady health visitors and hospital obstetric staff as a team. The Maternal Health and Safe Motherhood Programme considered that the initiative merited attention with a view to replication in other developing country settings. In order to assess the likely costs and impact of such an approach, an evaluation of the functioning of the flying squad was commissioned.

The Faisalabad Obstetric Flying Squad (FOFS) is one component in a series of activities undertaken by the MCWAF to combat maternal and child mortality in the city. Created in 1988 under the leadership of Professor Mrs. Altaf Bashir of Allied Hospital in connection with Punjab Medical College, FOFS is one part of MCWAF's integrated approaches to the provision of improved maternity services to the community. The programme activities of MCWAF include:

- (i) training and refresher courses for traditional birth attendants (*dais*);
- (ii) establishment of maternal and child health (MCH) centres including family planning services;
- (iii) free maternity services at the Allied Hospital;
- (iv) extensive programmes of public health education through use of media and "mobile health camps";
- (v) improved liaison between *dais*, lady health visitors, hospital staff and patients.

Objective of the evaluation

To evaluate the functioning, organizational mechanisms, impact and community response to the Faisalabad Obstetric Flying Squad.

Materials and methods

A ten-day evaluation of the organization of FOFS was carried out in late 1993. The evaluation consisted of:

- (i) a review of documents and reports;
- (ii) a review of project records and logs;
- (iii) unstructured interviews with project staff;
- (iv) participant observation of two FOFS calls;
- (v) focus group discussions with users, lady health visitors and *dais*;
- (vi) open-ended interviews with the general public and staff of six of the twenty MCH health centres;
- (vii) attendance at a session of the community health education programme and a hospital staff meeting.

Description of MCWAF's activities

The Faisalabad Obstetric Flying Squad

The Faisalabad Obstetric Flying Squad was created in 1988 in response to high levels of maternal morbidity and mortality in the city. It aims to provide free ambulance services to poor mothers in cases of obstetric emergency. The ambulance service is directly linked to the Allied Hospital and is composed of trained health care providers able to carry out life-saving procedures such as resuscitation. The Allied Hospital serves as the referral centre for obstetric emergencies in the area. At the beginning of the project the hospital provided the ambulance for the flying squad but FOFS recently acquired its own, fully equipped vehicle. Between 1989 and 1992 FOFS received 394 emergency calls, representing 2%-5% of all obstetric hospital admissions.^d

Dai training and refresher courses

The Association provides training for *dais* in order to improve the quality of maternal and child health

^a Summary of an evaluation report submitted to the Safe Motherhood Research Programme, WHO, Geneva, 1993.

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^d The reason this range of percentages is given is that there was inadequate data on the total number of obstetric admissions.

services. The training courses are of three months duration and include how to conduct a normal delivery, detection of high risk and abnormal cases, timely referral, sepsis and sterilization, antenatal care, neonatal resuscitation, and family planning. In addition the Association offers an extended one-year training programme for dais. At the Association's health centres lady health visitors conduct one-day refresher courses.

Mother and child health centres

The Association runs 20 health centres, each staffed by a lady health visitor, a family planning monitor, and a trained dai. The centres are supervised by the Association's doctor. Deliveries are conducted both at the centre and at home by dais and by lady health visitors.

Community education programme and mobile health camps

The Association follows up maternal deaths and uses the case histories as the basis for community education through mobile health education sessions. These are set up in the neighbourhood where a maternal death has occurred and include presentations to community members on the importance of maternal health, the prevention of maternal deaths and the availability and functioning of the Faisalabad Obstetric Flying Squad. During the mobile education sessions health services (immunization, vitamin supplementation) are provided free of charge to mothers and children. Allied Hospital medical students and health centre staff participate actively in such sessions.

Survey of maternal deaths in the community

Since 1980 efforts have been made to document all maternal deaths in the municipality of Faisalabad, whether occurring in government or private hospitals, health centres or at home. This has resulted in the identification of significantly more maternal deaths than those officially registered. A special effort is made to investigate the circumstances leading to these deaths by talking with health workers and family members of the deceased woman. At the same time the neighbours of the dead woman are informed about risk factors for maternal mortality and how to avoid them.

Mobile service unit and other activities

Two mobile service units provide outreach services for family planning in the rural areas. Each service unit covers 10-12 villages and visits are conducted on a daily basis. A registered nurse or midwife supervises the activities of trained field workers. Community education sessions are also held in the villages.

In addition to the health education sessions, the Association has its own newsletter and has produced videos for more widespread information dissemination.

A 50-bed maternity hospital is currently under construction next door to MCWAF headquarters. This has been built with the aid of donations from Baitul Mal Government of Pakistan and through local fund-raising activities. A Public Health School has been created to address the shortage of trained lady health visitors and midwives. It will be based at the maternity hospital. The Association is also addressing the issue of women's health and development from a broader perspective. For example, in order to reduce gender discrepancies in access to education the Association has opened three primary schools for girls. They are housed at health centres in the Faisalabad slum area. A programme to strengthen the skills of women in embroidery and sewing techniques and thus create opportunities to generate income has also been developed.

Evaluation of the FOFS

At the the start of its operation in 1989 and due to telephone congestion it was often difficult to relay telephone calls through to the labour ward. The flying squad did not have its own transport. The situation improved considerably in 1993 when an ambulance was donated, the Association hired its own driver and telephone connections were improved. The evaluation team participated in two obstetric emergency missions of the "Flying Squad". In both cases it took around one hour to travel from the hospital to the patient and back, a reasonable time given the traffic conditions. However, it was not possible to assess delays on the basis of records as the log books were not maintained with a sufficient degree of accuracy.

Knowledge of FOFS

Users learn about FOFS mainly during pregnancy or during a difficult delivery when a dai or lady health visitor requests relatives or friends to call the service. Discussions with the users indicated a degree of resistance to summoning assistance from the hospital. It is a common belief that "people go to the hospital to die". Furthermore, husbands and mothers-in-law play an important role in determining whether or not medical help is sought. The Association is attempting to overcome such resistance through its educational campaigns.

The Association's dais and lady health visitors were well informed about the role and functions of the flying squad which they learn about during training and refresher courses. Untrained dais working in the community knew very little about the service. Community members learn about the flying squad during community education sessions as well as by word of mouth.

FOFS staffing, equipment, recording mechanisms, costs

The flying squad differs from ordinary ambulance services in that it is staffed by highly trained obstetric personnel. Close collaboration between the hospital administration and FOFS exists, and the hospital cooperates in providing essential staff. Emergency and resuscitation equipment including oxygen is kept in the ambulance.

All calls to the flying squad are recorded at Allied Hospital and travel details are kept in the ambulance log book. A questionnaire on the patient's medical history is filled out after arrival at the hospital. Several shortcomings in these databases were identified and proposals for streamlining and improving the quality of the data collected were made. The proposed additions and changes would facilitate a quantitative analysis of the effectiveness of FOFS in the long run.

FOFS has no separate budget of its own. It is, in effect, an organizational scheme superimposed on the routine operations of Allied Hospital in order to provide poor women with access to obstetric emergency services in the city. With the exception of the donated vehicle, all the running costs of the ambulance service, vehicle maintenance, medical equipment and replacement costs and staff salaries are covered by the routine hospital operations.

Profile of FOFS users

Users of FOFS are predominantly of low socioeconomic status. Most of the users of the service had little or no education (*Table 1*) though the educational level of spouses was higher (*Table 2*). In 1990 all users were housewives, whereas in 1992 a small proportion (3%) was employed. Husbands were mainly unskilled labourers (70% in 1990 and 51% in 1992) and unemployment was high (17% in 1990, 20% in 1992). There is no available tabulated information on age, gravidity, parity, booking status, prior pregnancy history or distance from the

hospital though such information is collected during record keeping.

Complications handled by FOFS and outcomes

Among the most common indications for FOFS calls were labour pains, abortion, eclampsia and postpartum haemorrhage (*Table 3*). However, due to a lack of comparable hospital admission data for similar conditions it is not possible to evaluate the impact of the service on handling obstetric complications. A key indicator for appropriate and efficient use of FOFS is the outcome for mother and infant. Unfortunately this information is not readily accessible preventing a scientifically rigorous assessment of the impact of FOFS.

Perceptions of FOFS by users and non-users

Users stated generally high levels of satisfaction with the service particularly with the fact that it is free of charge. Users noted, with satisfaction, that the service works in conjunction with the traditional dais who accompany the women to the hospital which helps to reduce the fear of the institution. The integration between community and hospital services was much appreciated.

Focus group discussions revealed that non-users experienced higher costs in trying to reach the hospital during obstetric emergencies than did FOFS users.

The dais themselves were very positive in their evaluation of the service. They felt appreciated by the hospital staff and the emergency medical team and were glad to be considered part of a maternal health care team. They felt that the ability to refer women with problems reduced their exposure to major obstetric complications and risk of maternal death – an outcome which reflects poorly on their skills and damages their reputation. Through the recognition of their work by the "institutional" health services, their status in the community was enhanced. More specifically they mentioned the

Table 1

Education level of mothers using Faisalabad Obstetric Flying Squad services, Faisalabad, Pakistan, 1990 and 1992^a

Tableau 1

Niveau de d'éducation des mères utilisant les services de la «brigade volante» obstétricale de Faisalabad, Pakistan, 1990 et 1992^a

Education – Scolarité	1990		1992	
	Number – Nombre	%	Number – Nombre	%
None – Aucune	96	88	65	63
Primary – Primaire	11	10	23	22
Secondary & over – Secondaire et plus	2	2	15	15
Total	109	100	103	100

^a Sources: **Bashir, A. et al.** *Faisalabad obstetric flying quad services and analysis 1992*. Unpublished paper, 1992, and **Bashir, A. et al.** *Management of eclampsia. A longitudinal study*. *The Gynaecologist* 3(2-3): 29-32 (1993).

Table 2Education level of spouses using Faisalabad Obstetric Flying Squad services, 1990, 1992^a**Tableau 2**Niveau d'éducation des époux utilisant les services de la «brigade volante» obstétricale de Faisalabad, Pakistan, 1990 et 1992^a

Education – Scolarité	1990		1992	
	Number – Nombre	%	Number – Nombre	%
None – Aucune	76	70	53	51
Primary – Primaire	17	15	33	32
Secondary & above – Secondaire et plus	16	15	17	17
Total	109	100	103	100

^a Sources: **Bashir, A. et al.** *Faisalabad obstetric flying squad services and analysis 1992. Unpublished paper, 1992*, and **Bashir, A. et al.** *Management of eclampsia. A longitudinal study. The Gynaecologist* 3(2-3): 29-32 (1993).

Table 3Distribution of indications for FOFS calls, Faisalabad, Pakistan, 1989-1992^a**Tableau 3**

Répartition des indications d'appels à la «brigade volante» obstétricale, Faisalabad, Pakistan

	1989		1990		1991		1992	
	N.	%	N.	%	N.	%	N.	%
Antepartum haemorrhage – Hémorragie antépartum	10	14	18	16	10	10	11	11
Postpartum haemorrhage – Hémorragie du post-partum	20	28	5	4	6	6	12	12
Pregnancy-induced hypertension/ eclampsia – Hypertension due à la grossesse/éclampsie	2	2	8	7	27	26	24	23
Prolonged labour – Travail prolongé	19	26	9	8	7	7	6	6
Ruptured uterus – Rupture de l'utérus	0	0	1	1	0	0	0	0
Puerperal sepsis – Infection puerpérale	1	1	6	5	0	0	0	0
Abortion – Avortement	8	11	11	10	24	23	21	20
Ectopic pregnancy – Grossesse extrautérine	0	0	2	2	0	0	0	0
Labour pains – Contractions	12	17	47	41	30	29	27	26
Other – Autre	1	1	4	4	0	0	0	0
Bogus call – Appel bidon	0	0	3	2	0	0	2	2
Total	73	100	114	100	104	100	103	100

^a Source: **Bashir, A. et al.** *Faisalabad Obstetric Flying Squad services and analysis 1992. Unpublished paper, 1992.*

fact that the service comes quickly when called; mothers are transported in comfort; trained staff accompany each case; use of FOFS speeds up hospital admission formalities; dais gain respect and status (families make additional payments); and families have more confidence in hospital services.

The dais noted some problems in locating telephones in the vicinity of the mother's homes as well as problems reaching staff at the hospital due to the congested telephone system.

Staff at Allied Hospital were deeply impressed with the services. The additional exposure of junior staff and medical students to preventive obstetric care at the community level was appreciated. It contributed to their training and alerted them to the public health aspects of their work.

Conclusions

Within the comprehensive Mother and Child Health Care programme developed by MCWAF, the FOFS has the potential to be an effective project for improving maternal and infant health. However, much work remains to be done, on both the organizational and research level, for its impact on maternal morbidity to be measured. Because maternal mortality is a rare event, demonstrating the independent effect of the service using maternal deaths as the outcome will be impossible. Instead, indicators should be developed focusing on comparisons of FOFS users and non-users to demonstrate the impact of FOFS in reducing obstetric complications and improving health outcomes.

The service has the potential for replication, if integrated within an existing MCH programme where special attention is given to improving community awareness of obstetric complications as well as training of health care providers. Efficient record keeping and outreach programmes are necessary components of the service. Due to the lack of financial information it was difficult to evaluate the economic burden of the project. However, in cities such as Faisalabad, where the necessary resources can be mobilized within existing health infrastructures, financial arrangements like those under which the FOFS functions may be feasible.

Summary

The Faisalabad Obstetric Flying Squad was established in 1988 and provides access to emergency obstetric services for the poor women of Faisalabad. The service is highly appreciated by both women and participating *dais*. The latter receive training from the Mother and Child Welfare Association of Faisalabad and form an integral part of the obstetric care team. While problems in accessing communication facilities exist, the project has made a lasting impact on the provision of emergency obstetric services in the city.

Improved recording and reporting mechanisms would permit a more precise assessment of the impact of the service on the reduction of maternal morbidity and mortality. It would also permit an assessment of the operating costs of the service. One of the reasons the service functions effectively is that it is fully integrated into the general operations of the Allied Hospital. If similar institutional mechanisms can be established there is good reason to think that the Faisalabad Obstetric Flying Squad could be replicated in other developing country settings.

Résumé

Pakistan : La «brigade volante» obstétricale de Faisalabad

La «brigade volante» obstétricale de Faisalabad a été créée en 1989 pour permettre aux femmes défavorisées des quartiers pauvres de la ville et des campagnes environnantes d'avoir accès à des services obstétricaux d'urgence. Ce service est très apprécié tant par les femmes que par les accoucheuses traditionnelles participant à ces brigades, les *dais*. Ces dernières reçoivent une formation à l'Association pour la protection maternelle et infantile de Faisalabad et sont basées dans leurs centres de santé. Elles font partie intégrante de l'équipe obstétricale et peuvent fournir un recours approprié. Bien que des problèmes de communications continuent d'exister, ce projet exemplaire a eu des effets durables sur la fourniture de services obstétricaux d'urgence dans la ville. Il a permis de mieux intégrer les différentes composantes du travail de l'Association, par exemple l'éducation des jeunes filles, et la formation professionnelle, l'organisation de campagnes de sensibilisation de la communauté et d'éducation sanitaire, et la fourniture de services de soins pré- et périnataux et de planification familiale ainsi que de soins obstétricaux d'urgence, en tant que contribution à une maternité sans risque.

Une amélioration du système d'enregistrement et de notification des données permettra d'évaluer avec plus de précision l'impact de ce projet sur la réduction de la morbidité et de la mortalité maternelles.

Il faudrait consolider la structure organique du projet et établir des systèmes dépendant moins de l'initiative de contributeurs individuels et tirant davantage leur force d'une bonne organisation.