Round Table

Barbara E. Kwast

Safe motherhood: a challenge to midwifery practice

The principal way of achieving maternal health and safe motherhood is to expand the specific functions and/or categories of midwifery personnel. This includes strengthening knowledge and skills to improve the quality and quantity of care. Success would ensure that for millions of women the prospect of childbirth would be one of joy rather than misery.

Unless vigorous action is taken, pregnancy-related factors will kill 7.5 million women between now and the year 2000. Most women who die in pregnancy and childbirth are poor and live in remote rural areas or city slums. In developing countries there are about 200 times more maternal deaths per 100 000 live births than in developed countries. Women in Africa have a lifetime risk of dying from pregnancy-related causes of about 1 in 20, whereas the corresponding risk for women in developed countries is only 1 in 2000.

A safe motherhood initiative, announced in 1987, set a target of reducing maternal mortality by 50% in one decade *(1)*. In order to achieve this an integrated approach to maternity care is needed at all levels of health care systems.

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The major elements of the initiative are:

- adequate primary health care and an adequate share of food for girls from infancy to adolescence;
- universally available family planning to avoid unwanted or high-risk pregnancies;
- good prenatal care, including nutrition, with efficient and early detection and referral of women at high risk;
- assistance of a trained person for all women in childbirth, whether at home or in hospital;
- access to the essential elements of obstetric care at the first referral level for women at higher risk, especially those in emergencies of pregnancy, childbirth, and the puerperium.

In order to give full effect to the strategies of safe motherhood we have to ask the following questions.

- Are there enough midwives in maternal and child health and family planning?
- Is midwives' education appropriate for fulfilling the goals of safe motherhood?
- What does it take to meet the requirements of the maternity care team?
- To what extent can midwives themselves change the situation?

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Training and qualifications of midwifery personnel

Category of personnel	Prerequisite training/ education	Duration of midwifery training	Other nursing training
Nurse (Master of Science, Nursing)	B.Sci., Nurs.	2 years	Integrated
Nurse (B.Sci., Nurs.)	Secondary	4 years	Integrated
Midwife	Secondary	3 years	None
Nurse/midwife (registered)	Secondary	1–1.5 years	3 years
Nurse/midwife (registered)	Secondary	6 months	3 years
Enrolled midwife (non-registered)	Primary/ some secondary	2 years	None
Auxiliary nurse/ midwife	Primary/ some secondary	6 months	2 years

Although there is some variation between countries in the training and qualifications of midwives and nurse-midwives, certain principal patterns are apparent (see table).

Manpower planners in developing countries generally aim to have one midwife per 5000 population *(2)*. Assuming a birth rate of 40/1000 population, the workload would be approximately 200 deliveries a year. Even though nurses and midwives make up more than 80% of trained health personnel, there are serious shortages of midwives, especially in Africa and Asia, where midwife/ population ratios are as low as 1:300 000 in some countries. Typically, maternal mortality is 400–600/100 000 live births. Extensive training of traditional birth attendants takes place in these countries but there are not enough midwives to support them. Midwives are not available for essential obstetric care at health centres or in district hospitals. The concept of a maternal health care team cannot be realized in these circumstances.

Even in Kenya, Malawi, Nigeria, and Uganda, with one nurse/midwife per 2000, 5000, 3000 and 3000 population, respectively, there is a marked disparity between urban and rural staffing. In many countries 80% of the population lives in rural areas, and there are insufficient midwives for adequate village services or for constructive supervision of traditional birth attendants, where they exist. Traditional birth attendants cannot cope in isolation. Many rural maternity centres do not have a midwife or are closed because of lack of personnel and equipment. Of 23 countries in Africa for which data are available, seven are adequately staffed while 16 need 21 000 additional trained midwives *(3)*.

Health services and the community

Services for the care of pregnant women may be either unavailable or too costly. The cultural gap between these women and the highly educated health professionals makes communication difficult, with the result that care may not be accepted. Unfortunately, midwives work mostly in urban hospitals where other colleagues are available and often provide care that could be delegated to different health workers. Being relatively

well educated and sophisticated, midwives are often out of touch with rural women and are rarely willing to work among them.

Health services should combat maternal mortality and morbidity by providing primary care in the village, dispensary and health centre, together with essential obstetric functions at the first referral level. Primary care in the family and community involves: prenatal screening; screening for high risk; primary and secondary prevention of certain conditions; treating such conditions as anaemia before they become so serious as to threaten safe childbirth; health education; counselling; and domiciliary delivery by trained persons for women who desire it and who are not at high risk *(4)*.

With a view to reducing maternal mortality, discussions should be held with communities so that problems can be tackled locally. Villagers' knowledge of resources in their areas is often invaluable, for instance in obtaining emergency or routine transport to hospital. Also important is the building of maternity waiting homes which give shelter to women at high risk during the last few weeks of pregnancy *(5, 6)*. Proposals aimed at reducing maternal deaths are likely to be enthusiastically welcomed if they are understood and within the means of the people. The midwife, properly trained, could be the key to action.

Essential obstetric functions at the first referral level

Life-saving procedures intended to combat the major causes of emergency during childbirth include: surgery; anaesthesia; medical treatment; blood replacement; manual/assessment functions; family planning; and management of women at high risk.

The big problem, however, is to reach women at the grass roots. The delegation of midwifery services to traditional birth attendants or other community health workers will not produce improved results in the long term. Traditional birth attendants do not have the theoretical knowledge that would allow them to extend their skills very far. Many countries do not have traditional birth attendants or other community health workers. However, until an equally acceptable fully qualified midwife is available for every delivery, the greatest possible advantage should be taken of traditional birth attendants where they exist. The trained traditional birth attendant bridges the social and communication gap between the urban midwife and the rural population. The midwife herself should be made capable of taking responsibility for the training and follow-up. She needs skills and facilities that will enable her to respond effectively at the local level to problems referred to her by traditional birth attendants.

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The management of obstetric first aid should be a responsibility of all trained midwives. Where no other services of a specialist nature are available, the midwife must be able to remove a placenta safely, give intravenous injections, set up intravenous infusions, initiate prophylactic antibiotic therapy for women in danger of sepsis, treat eclamptics, and perform vacuum extractions.

Postpartum haemorrhage is the major cause of maternal mortality and referral from the community in many countries. In Bhutan the health assistant, 18 months trained, may walk for eight hours into the mountains to remove a placenta and thus save a life. In Bangladesh the rural midwife, called in the middle of the night to see an eclamptic primigravida, may give emergency resuscitation, administer intravenous valium, and set up an intravenous infusion, so that at the end of the night the patient can be carried to the nearest transport; this may be a boat ambulance an hour's walk away. In Malawi, midwives have been taught to perform vacuum extraction since the inception of registered midwife training.

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To prevent obstructed labour, which can lead to death and profound social disruption, the partograph, an early warning system for cephalo-pelvic disporportion, is now effectively used in several countries in the remotest health centres and maternity units. A recent initiative in Ghana showed that midwives were eager to learn how to manage labour with the help of this tool. However, it can only help the 50% of women who receive care from a trained attendant during delivery.

It is essential that the midwife be fully backed up by good working conditions, support services, continuing education, decent housing, and provision for the education of her own children.

In many countries, enrolled or auxiliary nurse/midwives function at both primary and secondary level. However, they are increasingly used for hospital services or their training has been abolished altogether, leaving a serious gap that cannot be filled by either traditional birth attendants or registered or degree-level nurse/midwives.

Basic midwifery education

The factors causing maternal mortality are not only clinical, but also social, political, educational and managerial. In order to reduce maternal mortality, midwives should be able to act independently in all these spheres. Each midwife, appropriately trained, equipped and supported, could do much to reduce maternal mortality in her own area. Her education should therefore encourage her to adopt the right outlook for her role.

The midwife should have all the qualities needed for contributing to the safe motherhood strategies. She is already trained in the provision of many of the essential obstetric functions in developing countries, and can perform others in emergencies. Midwifery training should be considered among the highest priorities in the development of human resources for safe motherhood.

At present in many countries there is an apparent resistance to the fulfilment of the midwife's designated role while rural areas suffer from increasing losses of physicians. Medical education has led to a considerable restriction in the sphere of practice of midwives trained in teaching hospitals, and consequently they are not being fully equipped to practise confidently where there are no doctors.

In general, midwifery education still reflects individual maternity care rather than the wider public health context. With few exceptions, midwives are insufficiently prepared to tackle obstetric emergencies because of a lack of awareness of the magnitude of maternal mortality and morbidity and because regulatory mechanisms for training and practice are inadequate. Concepts of problem-solving and team management are not yet widely put into practice. Much training in the developing world is patterned on, if not governed by, standards of education and practice designed for the different circumstances of developed countries.

It is now widely accepted that nurses and midwives should participate in interprofessional and intersectoral teams for health development and should become increasingly involved in the management of district health care teams, the supervision of nonprofessional workers and the monitoring of health service activities. Regrettably, however, this concept has led, in many developing countries, to an integration of nursing, midwifery and public health training, such that midwifery is no longer recognizable as a specialist entity. To train a community health nurse without proper midwifery training means that she is not capable of meeting the needs of 25% of the population.

There is a dearth of midwifery tutors partly because many countries cannot afford to train them. The teacher-training institutes of the developing world often refuse to accept students whose educational and professional experiences are unfamiliar. This may prevent the development of appropriate training. Teachers trained overseas may be incapable of developing programmes based on national realities and may perpetuate inappropriate training. Unfortunately, courses leading to a midwife tutor diploma have been discontinued in several countries in Africa. One reason for this was that a university degree was better than a diploma for career development.

Knowledge and practical skills in midwifery have lagged behind the modernization of nursing education and the desire for basic and postbasic degrees. There are too few midwifery tutor training programmes, and frequently there is insufficient theoretical and clinical midwifery education in two-year nursing degree courses. Nurse/midwives respond reluctantly to an extended role. Where students may be trained in modern obstetrics, tutors may lag behind. This creates tension between the clinical and training settings, with the result that tutors may withdraw from clinical teaching.

In some countries the number of nursing schools has increased considerably, but there has not been a corresponding expansion regarding midwifery schools. Furthermore, the provision of basic items such as teaching models, overhead projectors and relevant educational materials has often been severely neglected.

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Hardly any country in the developing world organizes refresher courses or continuing education for midwives. Direct practical experience would not only improve practice but would also be much welcomed by midwives who feel that they have been neglected for too long.

The maternity care team

The safe motherhood initiative promotes team-building and collaboration between team members so that they enhance each other's work. The role of the midwife in the team is crucial. She (sometimes he, where male midwives are accepted) could be the linchpin of the maternity service. Her importance as a highly skilled practitioner in midwifery with additional responsibilities in certain areas of gynaecology, family planning and child health, should be clearly understood; in addition she has administrative, managerial and educational duties. Yet the work and educational environments, instead of being team-orientated or geared to problem-solving, have usually been hierarchical and authoritarian.

Remarkable reductions in maternal mortality have been achieved through the problem-solving efforts of district teams in India, Malaysia and Malawi *(7, 8)*. This approach has helped project formulation and action in health systems research. The lessons learned in Malawi convinced health workers of the value of maternity care teams, and helped to bring about a high degree of community participation. Advocacy became so vibrant that safe motherhood was adopted as a theme of the university's theatre for development.

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The development of human resources for safe motherhood should no longer be an *ad hoc* process. Training for safe motherhood should reflect national needs and local circumstances. The formulation of a training strategy and programme requires critical assessment of needs and performance throughout all services impinging on maternal health. It should take into acount the perspective of the community, particularly the most disadvantaged groups of women.

Several approaches are available for the development of strategies favouring maternal health and safe motherhood. The most important consists of expanding the specific functions and/or categories of midwifery personnel. This includes the strengthening of knowledge and skills to improve the quality and quantity of care. Sensitization to community needs and expectations should enhance communication skills, without which confidence to use the services can hardly increase. □

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Discussion

B.T. Nasah

— *Midwives, the key to safe motherhood*

Before addressing the main themes of Dr Kwast's article, I think it is worth recalling that nature, if we take the trouble to observe her, can teach us some important lessons on the subjects of childbirth, child rearing and the spacing of pregnancies. I was born at home. My mother adopted the squatting position as she brought me into the world. A brother and sister followed me in the same way at intervals of three years. My mother breast-fed us for about two years, thus giving us a good start in life and also ensuring a measure of birth control.

As an undergraduate medical student in obstetrics and gynaecology I was expected to conduct 20 normal deliveries and report on five abnormal ones. Our direct supervisors were labour ward midwives even though our reports were signed by an obstetrician. The midwives were directly responsible for the patients. It was not unusual for the professor to be refused unscheduled access to the ward, particularly when the midwives were busy. The image of the midwife as a highly trained professional with managerial authority and technical skills has remained with me ever since.

Later I worked in the maternity service of the National Central Hospital in Yaounde, where up to 15 000 deliveries were conducted every year. The number of gynaecological admissions, including emergencies, ranged between 2500 and 3000 a year. The responsibility for this workload was shared by initially two and eventually four obstetricians, three general practitioners and 25 midwives, nurse midwives and nursing aides. There was overcrowding in the wards, and essential drugs and materials were often in short supply. Consequently, many preventable deaths occurred.

Epidemiological studies, conducted in 1973 and 1974, showed that almost 70% of maternal morbidity and mortality occurred among 27% of the pregnant population. This high-risk group was further characterized, selection and referral mechanisms were developed, and management protocols were established in both the central and peripheral maternity units. A series of conferences was held to draw attention to the results of the studies, while in-service training programmes were instituted for midwives, nurse midwives and auxiliary staff. In 1975 the risk approach was launched as a strategy for reducing maternal mortality and morbidity. We argued that pregnancy was not a disease and that in order to reduce maternal mortality the limited number of skilled people available should concentrate on those women who developed disease or were at risk of doing so. It was considered that, with appropriate training, less qualified personnel would be able look after women having normal pregnancies.

Except in the infertility clinic, the midwives were the principal actors in the programme. They were responsible for: organization and management of antenatal clinics; selection

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and subsequent surveillance of pregnant women at high risk; provision of health education for mothers; partograph monitoring; performance of certain surgical and other procedures, such as the repair of episiotomy, removal of the placenta, and the administration of intravenous therapy; vaccination of infants; postnatal clinical

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evaluation of mothers, and explanation of contraceptive methods; organization of family planning clinics and provision of all nonsurgical methods; contribution to in-service and national training programmes, conferences and workshops; compilation of service statistics; and carrying out of research. The obstetricians were expected to provide technical and managerial support as and when judged necessary by the midwives. The participation of the obstetricians at clinics was usually combined with research functions and the teaching of medical students. Between 1978 and 1987 maternal mortality declined by 60% in the central maternity unit, thanks to the special attention given to the high-risk group.

The salient features of the strategy were:

— the team approach;

— delegation of responsibility, with the midwife as the principal actor;

— continuing education for all categories of staff;

— the new role of the obstetrician and gynaecologist;

— the soliciting of political will and commitment;

— the holding of conferences on maternal mortality and morbidity.

Unfortunately, the midwife's traditional leadership role in maternity care has been widely curtailed over the years. Many midwives have moved into administrative positions where there are attractive fringe benefits and the possibility exists of escaping from the frustrations experienced in clinical practice. Training has been diluted in combined nurse midwife programmes in which insufficient emphasis has been given to the midwifery component. It is little wonder, therefore, that maternal mortality in some countries of sub-Saharan Africa is rising. Much suffering could be prevented or alleviated, and lives could be saved or enriched if the simple things were done well.

Not only are formal midwifery training programmes very superficial in some countries, but the role of the midwife is even more limited. Some nursing and midwifery schools are headed by doctors or even professors of obstetrics and gynaecology. A further problem is that in most African countries the control of standards of practice for doctors, specialists and midwives is a function of government rather than of professional associations.

If safe motherhood initiatives are to be practical and cost-effective in the present economic recession a strategic plan is needed with the following components.

- Better use of trained midwives.
- Training of more midwives.
- Recognition and use of the technical and professional qualities of midwives as team leaders.
- Release of obstetricians from some routine clinical obligations so as to permit their involvement in more

challenging problems, often requiring research.

Women in rural areas should be given the guidance necessary for them to protect their own and their babies' health during pregnancy. Husbands and other relatives should be made aware of critical signs and symptoms of potential complications so that they know when to seek professional assistance.

A concerted attempt should be made to move away from the clinic-based approach, which tends to detect problems later than is desirable. The midwife should therefore be equipped not only with the traditional technical and professional skills but also with an understanding of perceptions of ethnomedical practices in the community she serves. Furthermore, she should be a good manager, since this is a crucial factor in effective and efficient reproductive health programmes. □

Annemiek Cuppen

— Some pregnancies need high technology, most do not

In 1990 there were 1075 practising midwives in the Netherlands, 85% in home practice and 15% in hospitals. A midwife is, by law, a medical professional in this country, which means she is autonomous and accessible to women without referral by a general practitioner. She gives complete care and supervision during pregnancy, labour and the postpartum period, including care of the newborn. She acts on her own responsibility and has discretionary powers. If signs of pathology occur she consults with or refers to an obstetrician. In emergencies she takes life-saving measures.

A midwife looks on childbirth as a natural process that generally runs a smooth course. She avoids intervention that does not add to the well-being of mother and/or child, and shuns medicalization. A midwife's first task is to protect and promote health. She guides, coaches and stimulates, and thus boosts her clients' self-confidence. Her aim is to prevent physical, mental and social disorders, and to distinguish between pathology and physiology.

A midwife in home practice may conduct deliveries at home or in the hospital, according to clients' preferences. Postnatal home visits are carried out and a final check is made six weeks after childbirth. A midwife usually works in partnership with one or two colleagues; each handles some 165 clients annually. A midwife in a hospital is usually engaged in teaching physiological midwifery and obstetrics to student midwives and medical students.

Distinguishing between low- and high-risk pregnancies is vital, allowing midwives to retain their autonomy, home delivery to be a safe option, and obstetricians to concentrate on cases involving some danger.

Dr Kwast lays some emphasis on the importance of primary care, and in this connection it should be noted that the Dutch system of obstetric care is based on the principle that childbirth is a normal process. A woman is considered to be at low risk unless a risk is identified. During

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childbirth women are under the care of midwives or general practitioners; unless risk factors decree care by obstetricians, giving birth at home is an option. When a risk is identified the most appropriate care provider and place of delivery are decided on by considering:

- the nature and seriousness of likely complications;
- the possibilities within the first and second levels of care to prevent the complications;
- the possibilities within the first and second levels to detect these complications in time;
- the possibilities within the first and second levels to intervene adequately.

A woman can be referred to the second level of care because of her medical or obstetric history. During the antenatal, perinatal and postnatal periods, the midwife consults with or refers to the obstetrician if risk factors arise. As midwifery care does not originate in hospitals, many women do not enter hospital or see an obstetrician during the process of childbirth, because there is no need for them to do so. If a risk disappears, the woman concerned can be referred back to the first level of care.

The maternity home-help service supports mothers and assists midwives during home births. If a woman delivers in hospital with the aid of a midwife an obstetric nurse provides this care. Women who have given birth in hospital, whether under the care of a midwife or an obstetrician, are sent home and referred back to the first level unless there are indications for prolonged hospitalization. At home the home help looks after mother and baby on a previously arranged basis: either for a few hours a day, helping the mother, teaching her how to look after the child, and assisting with breast-feeding if necessary, or for the whole day, in which case she will also do the shopping, housekeeping and cooking, and look after any other children.

Distinguishing between low- and high-risk pregnancies is vital in the Dutch obstetric care system, allowing midwives to retain their autonomy, home delivery to be a safe option, and obstetricians to concentrate on cases involving high risk. This is not only economically sound but also ensures that access to high technology is possible for those women who can benefit from it. Such technology does not improve the outcomes of normal pregnancies, and women at low risk should not, therefore, be subjected to routines that may cause physical or emotional suffering. □

Renske Drejer

— Childbirth at home can be both safe and emotionally fulfilling

In the Netherlands, as in many Western countries, there is a tendency towards the medicalization of delivery. Yet childbirth is potentially a moving experience for both mothers and fathers, the full realization of which can only be achieved at home.

The following account is given by a mother, Alie Segaar, of her childbearing experience in her own home, where she benefited from the assistance of a midwife.

"During my first visit to the midwife I was asked whether I wanted to have my baby at home or in hospital. After some thought, my husband and I decided that we would prefer the birth to take place in familiar

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surroundings, in other words at home. Of course, we understood that if any complications occurred I should have to go to hospital. We lived fairly close to the hospital and could get there without too much delay. We were full of confidence because thorough precautions had been taken.

"I went in for check-ups by the midwife at intervals that decreased from a month to three weeks, two weeks, and, ultimately, a week. These examinations were reassuring because each time I was told that my condition was satisfactory. About a month before delivery I had to go to hospital to have my pelvic cavity examined. The baby had not descended and the obstetrician wanted to be sure that my pelvis was broad enough. It turned out there was no difficulty in this respect.

"The midwife, accompanied by a student, arrived soon after the membranes ruptured. My husband was present and I was perfectly at ease. I felt sure nothing could go wrong and was wonderfully relaxed.

"After about an hour and a half the contractions started and I felt an inclination to squeeze and strain, and, indeed, I appeared to have "opened up" completely. All the necessary equipment was set up. Following the painful contractions it was wonderful to be allowed to squeeze. Everything went smoothly and after slightly over two hours our little son was lying on my belly—a great feeling. I was washed and everything was cleaned up. Less than two hours later my husband and I were cosily having coffee and biscuits to celebrate. Even Grandma had come to have a look! A fantastic moment, my husband and I together in bed with our little son alongside in his cradle.

"If I had given birth in hospital my husband would have had to leave and both of us would have been alone with our thoughts and emotions. Childbirth is a highly emotional affair and it was wonderful to be able to talk about it together in the privacy of our own home."

Midwives are in a position to counter the medicalization trend, but in order to do so they need to keep up to date with developments in the obstetric field. This they can achieve by attending refresher courses, as Dr Kwast advocates. In so doing they can learn to distinguish between pathological and physiological factors.

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It is worth noting, however, that good results are favoured if both the woman in labour and her midwife are confident in their roles. □

Joan Bentley

— *Teamwork is essential*

Women have long been assisted in childbirth by local "experts" in their own communities. Following childbirth these

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"experts" often continue to care for mothers and their children, and perform housekeeping tasks until the women can cope by themselves. This is still the usual picture for the majority of women in the developing world.

Occasionally things go wrong and the traditional birth attendant has nowhere to turn. Even if a rudimentary health facility exists close to where problems occur, it may have neither the skills nor the equipment needed, and consequently women may die. The nearest centre with adequate provision may be so far away, and the journey to it so arduous, that by the time women reach it they are likely to be in a hopeless condition. At the centre, the traditional birth attendant who may accompany the mother is not recognized as a member of the primary health care team, is considered incompetent, and is often castigated for her efforts. In view of all this, it is hardly surprising that transfer to hospital is a last resort.

Traditional birth attendants should be assured of support as they learn to recognize the signs and symptoms of impending problems.

Dr Kwast has produced an impressive array of facts and concludes that midwives could greatly improve maternal health if they received the right training and equipment and were given responsibility for a realistic number of women, together with appropriate support and rewards. My experience as a midwife in various places in the Western Pacific, South-East Asia and Africa leads me to agree.

It would be splendid to have community obstetricians as recently proposed *(1)*. Unfortunately, the developing world has very few obstetricians; they are expensive to train and are needed in tertiary and secondary centres in most countries. It is rare to meet a full complement of obstetricians other than in teaching hospitals: most countries cannot afford to have expensive tertiary care facilities scattered in small hospitals.

Could a community obstetrician perform better than a well-prepared midwife, who is less costly both to train and to maintain in service? Midwives are generally women, less distanced socially and economically from their clients than physicians and therefore better able to understand the problems faced by the women they serve. They are likely to be accepted by the communities where they work, particularly if much of their education has been gained there. Furthermore, they are a crucial link between the primary, secondary and tertiary levels of maternal health services. Physicians and obstetricians are a precious resource at the secondary and tertiary levels, where expensive back-up facilities enable them to treat problems referred early with a view to preventing maternal and neonatal disasters.

A midwife's duties should clearly reflect national realities if maternal mortality is to be kept as low as possible. However, regulations controlling midwifery practice are usually devised in consultation with obstetricians who have been trained in developed countries. Training that encourages a midwife to refer problems to a specialist very soon after they arise is not appropriate in countries where maternal death rates are high and the most sophisticated care is not readily accessible.

Traditional birth attendants, on the other hand, will be needed at community level for

many years. They should be assured of support as they learn to recognize the signs and symptoms of impending problems, and should be backed up by referral services equipped to deal with emergencies. The means should exist for transferring patients to specialist obstetric care. The midwife should be able to enter the community, meet the traditional birth attendant, assess her skills, correct her shortcomings and broaden her abilities, with a view to achieving safer practice and early referral. Regular contacts with traditional birth attendants facilitate the early detection of falling standards and make continuing education realistic. The midwife should procure the equipment needed to ensure that the practices of traditional birth attendants are safe and should take responsibility for its proper use and resupply. She should familiarize herself with the community during visits and join the people in planning the type of support they can realistically supply, including available local transport to get emergencies to hospital. Knowing the community facilitates the collection, analysis and interpretation of data and the provision of better services.

When emergencies arise, the midwife should be able to:

- stop a haemorrhage, remove a placenta, and provide essential body fluids intravenously;
- control an eclamptic fit with drugs and provide care until the mother is fit to travel to an obstetrician;
- reduce puerperal fever by means of antibiotics and attempt to discover the source of infection;
- use a vacuum extractor during childbirth;
- take responsibility for the delivery of family planning services.

The midwife should also maintain her own standards of practice. She should keep in close contact with colleagues at the secondary and tertiary levels, advising them of problems in the community and seeking specialist help and advice.

Thus, in the developing countries the midwife should be a communicator, administrator, manager and supervisor; she has to uncover and solve problems; she has to be a family planning practitioner, a collector and analyser of data, and an educator, in addition to performing her basic midwifery role. She is the link between families and the secondary and tertiary services, and so her training in the community is of paramount importance. In developing countries, one midwife should be available for every 5000 people and should have 20–50 traditional birth attendants to help her. Her tasks are exacting, and a sound education is necessary to equip her to fulfil them.

Dr Kwast touches on the critical shortage of midwife teachers. Few have been adequately prepared to meet the realities of national circumstances; most lack the skills and experience needed. The safe motherhood initiative requires that regional centres with a community base be developed where realistic midwifery teaching and practice skills can be acquired. The best teachers can demonstrate to learners an ability to perform competently the tasks expected of graduates. The classroom is a poor place for such teaching, whereas teachers in communities

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are invaluable to basic and postbasic students and for continuing education. Midwives often fear working in isolation, since their education may not have prepared them for it. Midwifery students and their teachers should spend a significant proportion of the training period in rural areas, where they can work with people in their own communities and make their own decisions.

No safe motherhood initiative can be successful without the maternity care team. Each member has a crucial role to play and should support, and be supported by, the others. The traditional birth attendant, the midwife and the obstetrician should receive training in appropriate practice situations. The major deficiency is the lack of suitable training, placement and support of midwives, without whom little can be achieved. □

1. **Bullough, C.H.W.** More community obstetricians are needed. *World health forum,* **11**: 206–207 (1990).

John Lawson

— *Towards integrated maternity services based on midwives*

I agree with Dr Kwast that the skilled midwife should be the linchpin of the maternity services if motherhood is to be made safe in developing countries.

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However, the midwife's role and deployment in the maternal health team need to be defined.

Early in the twentieth century, high maternal mortality in Europe led to the development of national training programmes to create professional midwives for *independent* practice. However, the results were disappointing until hospital maternity facilities were developed so that midwives could refer abnormal cases. In the Third World today, community midwives practising without integration into maternity services are equally ineffective.

In North America the practices of unskilled mother's helps at the beginning of the century (traditional birth attendants in modern parlance) led to wholesale condemnation of the idea of midwives, and antenatal care and delivery were taken over by doctors. Because of this medicalization, maternity nurses are now expected to play a subordinate and unfulfilling role.

The same pattern has developed in Egypt and the Indian subcontinent, where there are very few trained midwives but large numbers of doctors. The creation of community maternity services is consequently impeded, particularly in rural areas. Such services should be provided by skilled midwives supported by doctors in centres of first referral.

Maternal and child health clinics have been widely developed in Third World countries. They have improved child health through immunization, the monitoring of growth and nutrition, and so forth. However, maternal well-being cannot be improved to the same degree by establishing *free-standing* antenatal clinics. A system designed only to give preventive health care during pregnancy can do little to diminish maternal mortality.

Antenatal care should be linked to skilled care in labour and to readily available facilities for the treatment of complications.

What should be the work pattern of trained midwives in developing countries? Caring for mothers in their homes has much to commend it, as it provides access to the whole family and thus a golden opportunity for health education. However, midwives are scarce, domiciliary care demands many of them, and there are difficulties of supervision and the maintenance of standards. At community level, therefore, midwives should be deployed in small teams based on village maternity centres where they can deliver normal patients. They can also go out to conduct peripheral antenatal clinics. Potentially abnormal cases, including very young or very old mothers, those with bad obstetric histories, women of short stature who may develop cephalopelvic disproportion, and women carrying twins, should be identified during pregnancy and referred to the centre of first referral for delivery. A hostel nearby providing antepartum accommodation is usually required. Similarly, patients in maternity centres who develop complications of labour (particularly delays in labour detected by partographs) should be referred early for more skilled medical care, for which a transport system needs to be arranged in advance. In this way, midwives at the periphery can practise effectively and *safely*, dealing with normal cases and referring abnormal ones to the centre from which they are supervised.

Dr Kwast rightly emphasizes that midwives should be properly trained. The temporary expedient of training and integrating traditional birth attendants may be necessary until a larger number of professional midwives becomes available. Unfortunately, the limited educational opportunities for women in developing countries severely restrict the number of midwives who can be trained to the high levels advocated by Dr Kwast. It therefore seems more realistic to continue to train large numbers of basic midwives (the enrolled or auxiliary midwives listed in the table, see p. 2) and comparatively few higher-level midwives who are capable of supervising and teaching the others.

The higher grade should be increased rapidly in order to obtain an effective expansion of maternity services. The motivation of basic midwives, and their professional standards, may decline without leadership and inspiration from higher-level midwives. The latter could be either in charge of groups of midwives in peripheral maternity centres or in the maternity wards of centres of first referral. With further experience they should certainly be capable of emergency interventions of the kinds mentioned by Dr Kwast. They should aspire to key positions in district maternity teams: from this group the increased number of midwifery tutors required should be selected for special training.

Antenatal care should be linked to skilled care in labour and to readily available facilities for the treatment of complications.

In the developing world there is a great need for doctors and midwives to work closely together, each understanding their respective roles. More and better-skilled midwives, effectively deployed, are essential to achieve safe motherhood. □

Marie Goubran

— *Support the front-line workers*

Medicalization has crept into maternity services over large areas of the world: caesarean sections and instrumental deliveries are on the increase. Litigation is having a devastating effect, although it is also causing some obstetricians to bring in modifications of practice. Some organizations, women's groups and midwives

In the developed world it is now evident that midwifery services should be extended in scope.

are fighting for legislation that would allow midwifery to be an integral part of health care systems. This is happening most notably in Canada, where the International Confederation of Midwives (ICM) has been asked to help with the setting up of committees and to participate in advisory groups.

When criticisms of the outcome of increased medicalization started there was a scarcity of sound research backing the more non-interventionist approach and demonstrating the need for continuous care by midwives. During the last 10 years, however, a body of social and midwifery research has clearly revealed the necessity for such care. In the developed world it is now evident that midwifery services should be extended in scope and that midwives should be adequately prepared for their role. To these ends, legislation is being drawn up in various Canadian states.

Over the last twenty years or so, maternal outcome has apparently not improved in some areas of the world, and it is sometimes argued that it has got worse. Midwifery education has been largely inappropriate. Once initial training has been given, midwives do not, for the most part, work near the women who are in particular need of them but in relatively well-equipped central hospitals, where they are concerned with normal deliveries and tasks that could, it is argued, be done by other staff. Midwives should impart their knowledge to people who can take it to families. Clear messages are needed, such as those given in *Facts for life (1)*, a publication to which many organizations contributed, including the ICM.

For years, government officials have tried to persuade midwives to work in rural areas. The idea of doing without well-trained midwives has not been far from decision-makers' minds and has, indeed, gained ground in some international organizations. The notion of a type of health worker with some knowledge of all areas of maternal and child health services has been very popular in recent years. It was thought that if traditional birth attendants were properly trained and if a general type of worker came into being, then most problems could be solved. Consequently, millions of dollars were invested in the training of traditional birth attendants. Unfortunately, only very limited success was achieved, even in specific areas such as those of tetanus control and hygienic deliveries. As a result there has been a great feeling of frustration among policy-makers.

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Mrs Goubran's untiring efforts to strengthen midwifery globally have significantly enhanced the profile of the profession. Her example and deep commitment to maternal health and midwifery gave lasting encouragement to midwives everywhere.

Why have such schemes failed? The most obvious reason is that many traditional birth attendants deliver no more than five babies a year; their training therefore gives little benefit to their communities. Another factor is that traditional birth attendants are mostly illiterate, acquiring their skills through a slow process of apprenticeship with experienced elders. There is nothing wrong with, and, indeed, much to commend, this type of instruction, but difficulties may arise when an attempt is made to introduce a more theoretical approach. One may end up with women who have modified the way they speak of their work but not their actual practice to any discernible extent. The provision of sterilized delivery kits or packs may even mean that tasks will be undertaken which otherwise would have remained undone, sometimes at the expense of mothers' safety. Another major problem in such programmes is that, in the management and training of personnel such as traditional birth attendants, supervision and referral have to be established in a manner acceptable to both parties and, of course, affordable by the family.

Governments are now saying that they need midwives and that these have long been neglected in maternal and child health teams. But how, continue the ministries, are we going to utilize, educate, prepare and manage them to undertake all that is required? There is a clear mandate for the continuation of midwifery services in both the developing and developed countries.

How should midwives respond? The demise of the midwifery associations in the developing world seems to have been one of the major impediments to the improvement of midwifery services. Who is going to knock at the government door when adjustments are made because of recession, and when no account is taken of the people in greatest need? Who is going to ensure reasonable management and continuing education for midwives? Who is going to exert pressure on behalf of women and their families? In the absence of a focal point for midwives, to whom should funding agencies address themselves if they have ideas for projects? If midwives do not have an office with a telephone, how can they contact agencies' national offices? Associations wishing to join the ICM should not be excluded because of failure to pay capitation fees. A scheme for the twinning of associations is in operation, and substantial help is thereby given to associations in need. Assistance is available for the payment of capitation fees.

Finally, should every midwife have a university degree, or should more concern be shown for the midwife with a sound basic training who serves in the front line? There seems to be a belief in some quarters that unless one has a degree it is not possible to be considered seriously. Other professions have gone down this road, to their detriment. Reliable front-line workers are the most valuable component of the maternal and child health team. The researchers, senior managers, and academics should support them. The most important thing about the training of front-line personnel is that it should prepare them for the job they have to do. □

Reliable front-line workers are the most valuable component of the maternal and child health team.

1. **Adamson, P. & Williams, G.** *Facts for life*. New York, UNICEF, WHO and UNESCO, 1989.

Salatun Nessa

— *Trained traditional birth attendants can make a vital contribution*

In Bangladesh, which has a predominantly agricultural economy and a large rural population, the comparatively few midwives are mostly based in institutions or practise in urban or suburban regions, whereas traditional birth attendants are village-based. Midwives, unlike traditional birth attendants, have several years of schooling behind them, and receive professional training for a minimum of two years in recognized institutions. Until relatively recently, no formal training was available for traditional birth attendants, who gained their skills through apprenticeship, by assisting neighbours in labour, or by delivering their own babies without assistance.

A training programme has been established with a view to having a trained traditional birth attendant in each of Bangladesh's 68 000 villages.

In contrast to midwives, traditional birth attendants are close to their clients' families. The midwife is usually town-based, whereas the traditional birth attendant lives in the same village as, and may even be a neighbour of, the women she helps. Because of her educational shortcomings her status is lower than the midwife's. The midwife receives a fixed fee for each delivery, but no such payment is made to the traditional birth attendant, who is remunerated according to the financial means of the client's family.

Untrained traditional birth attendants lack elementary gynaecological and obstetric knowledge. Their ideas on the reproductive organs, human sexuality, conception, childbirth and child care have little scientific basis. Consequently, these people often cause damage to the newborn and sometimes even cause deaths. In Bangladesh as in other developing countries where urbanization is insignificant and modern health facilities, especially in the countryside, are scarce, many deaths of infants and mothers occur due to ignorance among traditional birth attendants. To combat this situation a training programme has been established with a view to having a trained traditional birth attendant in each of the country's 68 000 villages. As indicated by Dr Kwast, some midwives can supervise traditional birth attendants. However, in Bangladesh there are few midwives competent to adopt this role, while the hospital-based nurse midwives are not involved in the training of traditional birth attendants because of government policy.

The traditional birth attendants are, in fact, trained by paramedical workers called family welfare visitors, while senior family welfare visitors supervise the training process and act as a link between the traditional birth attendants and the peripheral health services. Training lasts two years and covers cleanliness, aseptic procedures during delivery, tetanus toxoid injections for pregnant women, nutrition during and after pregnancy, detection of complicated pregnancy, referral and hospitalization, colostrum, immunization of neonates, weaning foods, preparation of oral rehydration solution for the treatment of diarrhoea, and family spacing through contraception, among other matters.

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Dr Kwast expresses concern about infant and maternal deaths in developing countries. It is the same concern in Bangladesh which has inspired the training programme for traditional birth attendants. In some parts of the country, progress is already evident: there has been an increase in antenatal referrals to health centres; greater numbers of pregnant women are being immunized; when complications of childbirth occur, the help of trained medical personnel is being sought more frequently than before by pregnant women's families; and the uptake of immunization programmes for neonates has improved. Thus traditional birth attendants, rather than midwives, are assuming a wide range of functions in maternal and child care. □

Elizabeth Gilmore

— *Apprenticeships in midwifery*

In connection with midwifery education, a matter given some prominence by Dr Kwast, it may be of interest to outline efforts being made in the state of New Mexico, USA, which has been responsible for the licensing and regulation of midwives since the 1920s. Today's regulations provide guidelines for the training, practice and supervision of non-nurse, direct-entry midwives. When candidates have obtained the academic and clinical requirements they qualify to sit the New Mexico licensing examination. Statistics kept since 1980 on every patient attended by licensed midwives show that the apprenticeship route has in no way jeopardized safe practice. To become an apprentice it is necessary to have a high-school or equivalent diploma and a preceptor, who may be a licensed midwife, certified nurse midwife, obstetric nurse practitioner, or a physician who delivers babies.

On receiving her licence the midwife can offer prenatal, intrapartum, newborn and immediate postpartum care based on the State's parameters of low risk, which conform in general to accepted standards of care in the USA. During pregnancy, women visit a physician at the beginning of care and at 34–37 weeks of gestation. If, on the second occasion, it is found that low-risk status has not been maintained, referral to appropriate resources takes place.

Licensed midwives in New Mexico wish to do everything possible to preserve the credibility of apprenticeship training and the quality and consistency of the associated academic programme. The New Mexico Midwives Association, together with the Northern New Mexico Midwifery Center, is therefore forming the New Mexico College of Midwifery, which will confer an associate degree in midwifery on completion of the programme and the passing of the State's licensing examination. A set of educational modules produced by the College guides students and their preceptors. The progamme is equivalent to a conventional three-year training course. The faculty is made up of those preceptors selected by the students who fall within the categories approved by the State and who agree to sit on the faculty board and review and update the modules annually.

The College offers continuing degree programmes, including a bachelor of science in midwifery, a master's degree and a Ph.D. Each requires the writing of a thesis under the supervision of a preceptor who holds a degree equivalent to that being sought. The research topic and the preceptor are subject to approval by the faculty board. □

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Nardho Gunawan

— *A long-term strategy for reducing maternal mortality*

Dr Kwast is right to draw attention to the comparatively high levels of maternal mortality in developing countries. In Indonesia the overall maternal mortality rate is estimated at 450 per 100 000 live births; values range from 130 to 750 per 100 000 in different provinces. The main reasons for these high rates include inadequate coverage by maternal health care and referral services, poor quality of services at community level, and unfavourable community attitudes, cultural beliefs and practices relating to maternal health care, especially during pregnancy and childbirth.

With a view to reducing the maternal mortality rate by 50% in a decade, institutional maternity services are being provided through public and private hospitals, while preventive and promotive action is being undertaken, mostly by health centres. Each health centre is staffed by a doctor, midwives, nurses, and other paramedical workers. Each health centre serves about 30 000 people at subdistrict level and usually has two or three subcentres associated with it. Integrated service posts or *posyandu* are organized at village level by the community, with technical and some material support from the health centres.

In the promotion of maternal care and safe motherhood, support from community and religious leaders and women's organizations is invaluable.

The activities at the *posyandu* concern maternal and child health, nutrition and growth monitoring, immunization, diarrhoeal disease control, and family planning.

The global shortage of midwives mentioned by Dr Kwast is certainly in evidence in Indonesia. A scheme for the training of 18 900 community midwives in five years is in progress. These midwives will be deployed at village level and each will be responsible for between 3000 and 5000 people. Training is taking place in 149 schools of nursing; it involves a year of study additional to the three-year basic education for nurses.

About 80% of women in rural areas are delivered at home by traditional birth attendants, only some of whom have been trained. Their services are largely given around delivery and during the postpartum period. Traditional birth attendants are likely to continue in this role for many years to come, notwithstanding the appointment of community midwives. The training of traditional birth attendants will be continued, and they will receive more guidance and supervision from midwives.

The first referral level for the community is the health centre and the community midwife; the second referral level is the district hospital. Physical, geographical, socioeconomic and cultural factors may interfere with the referral of urgent obstetric cases. Because standards for the provision of services offered at each referral level have not been established there is a tendency for the quality of care to be low. So as to improve the referral system, standard operating procedures will be introduced for each level and health personnel will be

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properly trained. Educational interventions for use at community level have been developed in order to increase the utilization of services during pregnancy and delivery. In the promotion of maternal care and safe motherhood, support from community and religious leaders and women's organizations is invaluable.

The absence of a scheme for the routine registration of maternal deaths and follow-up investigations has tended to obscure the tragedy of maternal mortality and its causes. A recent study in central Java led to a recommendation that all deaths of women of reproductive age be reported to village chiefs and recorded, and this is being done. Medical personnel from health centres and district hospitals will be encouraged to perform regular follow-up investigation into the causes of maternal deaths. What is revealed should allow preventive action to be taken in the future. □

Constance Holleran

— Nurses' and midwives' organizations play their part

Dr Kwast raises many important points deserving the attention of policy-makers and planners. I agree wholeheartedly that the long-term goal should be for every woman giving birth to be attended by a well-qualified midwife. Realistically, however, this will not be achieved for many years to come. In the meantime, we have to find ways of training sufficient traditional birth attendants and midwives' assistants to do what is feasible and safe.

Professional groups and organizations at national level should stimulate such efforts. Manpower planning should be done and implemented on an area by area basis. It is no good saying that a country needs a certain number of midwives. Precisely where they are needed should be assessed at the outset. Rural areas rarely benefit from increased numbers of well-qualified providers. National nurses' and midwives' associations should take a lead in the planning of studies or needs and resources. The International Council of Nurses is working on guidelines to assist in such activities.

Restrictive laws and regulations should be changed in the interests of both the provider and the public.

Dr Kwast refers to legal constraints on the expansion of the midwife's role. This is another area where professional initiative is called for. The Council is assisting national nursing and midwifery groups and ministry of health personnel to draft legislation allowing for adequate health services to be provided by competent people. Restrictive laws and regulations should be changed in the interests of both the provider and the public. Undue restrictions on practice benefit nobody.

Health legislation should concentrate on meeting the health requirements of specific countries or provinces. Nursing and midwifery education should be developed to meet local needs. The requirements clearly

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differ from country to country, so curricula should be locally planned and tutors should devise learning experiences consistent with identified goals.

I feel that it is acceptable for tutors to be trained abroad if suitable programmes are not available at home, but they should be mature and experienced enough to be able to select the courses and field experiences that will be most useful to them for teaching in their own countries. When they return they need advice and support from others who have had similar experiences. Peer support can facilitate re-entry and the realistic implementation of new ideas.

Substantial clinical experience is essential for anyone intending to practise midwifery. However, midwives also need instruction in community health if they are to be effective in rural areas. To achieve a balance requires good planning.

Refresher or continuing education courses and learning experiences should be available to midwives and, indeed, to all health providers. The needs are greatest and most often neglected in isolated regions. National nursing and midwifery organizations have a responsibility here, and their members should demand action. If governments and educational institutions do not provide the necessary opportunities, then professional bodies should find ways of doing so.

Much remains to be done to achieve the goals of the safe motherhood initiative, which should be given higher priority. Nurse midwives themselves should play a more active role in policy-making and programming. Their organizations should find ways to participate with increased effectiveness in bringing about safe maternity. The public should be informed and motivated to assist in this work. □

Gloria Betts

— *Negative effects of present economic conditions*

When money was easier to come by in many African countries than it is today and services were readily available at referral centres, rural women travelled long distances to receive care. The hospitals were full to overflowing because they could provide the help that people required. Today, however, there is a high level of noncompliance among referred patients for the following reasons.

- Transportation is expensive and difficult to obtain because of shortages of fuel and spare parts. Pregnant women are often discriminated against for fear of wasting drivers' time should anything go wrong during journeys to hospital.
- Roads are in a poor state of repair.
- Radiotelephone links are intermittent.
- Modern obstetric care is beyond the means of some urban and many rural women.
- Service providers may demand tips or insist on payment, and attempt procedures for which they have not been trained.

Many health centres can hardly function effectively because of unserviceable equipment and a lack of skilled personnel. Shortages of some disposable items may lead to their re-use.

Against a background of unstable economic conditions, midwives in Africa are trying to promote safe motherhood, with a view to reducing both mortality and morbidity.

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Those attached to private and non-governmental organizations usually have functioning equipment and adequate supplies, whereas in the state sector there are invariably deficiencies in these respects.

Many midwives and obstetricians are leaving Africa to work in countries where the material rewards are higher. The few that remain are reluctant to work in rural areas because of poor educational facilities for their children, poor communications, and extra costs. In some areas, obstetricians are trying to restrict the scope of midwifery practice, forgetting that midwives are practitioners in their own right and collaborators in the quest for safe motherhood. Male dominance, inadequate budgeting for health care, the low socioeconomic status of women, especially in rural areas, external manipulation, and internal strife and mismanagement are additional adverse factors. Unsuitable strategies are forced on developing countries by donors, sometimes because there has been no focus-group discussion and proper assessment of needs.

Rural populations rely on traditional healers and traditional birth attendants, who, although well-meaning, often lack the knowledge, skills and equipment with which to provide satisfactory care. They are further hindered by traditional practices and taboos, some of which can be harmful.

Traditional birth attendants have been identified and trained to perform clean and safe delivery. They need regular supportive supervision, sometimes provided by the district team. If their training takes place away from their home environment, they may have difficulty in applying what they have been taught.

Second-level maternal and child health workers or auxiliary midwives, based at peripheral health units, have been trained as trainers and immediate supervisors of traditional birth attendants. They are sufficiently literate to carry out training and keep records, yet they are willing to stay in rural areas. They are encouraged to respect the traditional birth attendants so that good interpersonal relationships can be established and cooperation achieved.

In addition to basic training, pictorial materials are being developed in many areas to help traditional birth attendants to identify and refer high-risk cases and keep records of their main activities. Traditional birth attendants are now trained in their home environment for two or three days a week over a period of three months. They are taught to identify high-risk cases and call on second-level health workers or auxiliary midwives so that it becomes possible to achieve early referral to appropriate health facilities, to which the traditional birth attendants can take patients if distances are not excessive. They are instructed in the recognition of danger signs during pregnancy and labour, and in the referral of patients.

Many midwives and obstetricians are leaving Africa to work in countries where the material rewards are higher.

Resuscitation and the general care of the newborn is taught. The nature of disease is explained, together with the importance of cleanliness and sterilization, and the supposed influence of devils or witches in causing illness is firmly dismissed. A simple description of the anatomy and physiology of the female reproductive system is given, so that prolonged or obstructed labour will not be attributed to a woman's infidelity or to witchcraft. Vaginal examinations and manipulations are discouraged, as is the

excessive use of herbs, many of which have not been properly studied pharmacologically.

Traditional birth attendants are involved in promotive and preventive activities, including:

- motivation of mothers to attend under-five clinics;
- referral of children who are not thriving;
- motivation and mobilization for immunization;
- prevention, early detection and treatment of diarrhoeal diseases, including preparation of oral rehydration solution;
- motivation for child-spacing;
- distribution of condoms;
- proper nutrition of adults and children using locally available protein foods and preparation of weaning foods so that women and children are not deprived of protein because of ill-founded taboos;
- encouragement of sanitation and protection of village water supplies.

Traditional birth attendants and auxiliaries provide a much-needed service, bridging sociocultural and economic gaps, while trained midwives, versed in life-saving skills and provided with adequate equipment and supplies, can bring about major reductions in maternal mortality and morbidity. □

Gladys Kusi-Yeboah

— *A question of finance*

Dr Kwast's recommendations will be of particular value and interest in developing countries, although in Ghana a shortage of personnel would make it difficult to carry them out comprehensively at present. However, given a sustained training programme and adequate supervisory staff, it should be possible to provide essential obstetric functions at the first referral level, as defined by Dr Kwast, within a decade. These would include: the use of partography as an early warning system for cephalopelvic disproportion; active management of the third stage of labour; repair of episiotomies and lacerations; safe manual removal of the placenta; the setting up of intravenous infusions; and the performance of vacuum extractions.

Dr Kwast cites a recent WHO initiative in a major Ghanaian hospital. It is supported by the Ghana Registered Midwives Association which helps to popularize it through seminars and direct communication with women in remote areas. This is commendable but not enough. Central directives should be issued on safe motherhood, as has been done in the United Republic of Tanzania and some Asian countries. However, thanks to the initiative, the Ministry of Health has become aware of the need for an effective policy directive and a request has been made to hospitals to draw up a major implementation programme. Unfortunately, any scheme that is devised could only be immediately effective in established health institutions such as hospitals, clinics and maternity homes. A much more comprehensive effort, involving a massive financial commitment, is required.

Dr Kwast has identified the root causes of maternal mortality and has shown how they could be tackled. Anyone wishing to approach this problem would do well to read her article. □

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