The Advanced Life Support in Obstetrics Course

A National Program to Enhance Obstetric Emergency Skills and to Support Maternity Care Practice

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Unexpected emergencies occur during routine maternity care. Perceived or actual deficiencies in training may decrease the quality of care and increase liability risks and anxiety among providers. This may lead the provider to discontinue obstetrics, which results in problems in access to care. To improve the training for obstetric emergency management, an Advanced Life Support in Obstetrics (ALSO) course was developed. This skill-enhancing course, modeled after other life support courses, is designed to improve the quality and availability of maternity care through standardized training in the management of emergencies and improved communication between maternity care providers. A total of 1315 physicians and nurses attended 35 ALSO courses from 1991 through 1993. Seventy-six percent were family physicians in practice; 20% were from rural areas. About 15% were in hospitals with no obstetricians or pediatricians on staff. Attendees reported a significant increase in their level of comfort in the management of obstetric emergencies and a greater intention to continue maternity care.

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The care of even low-risk maternity patients will involve the management of emergencies during labor and delivery. Some of these emergencies will be life threatening to both the mother and fetus and may occur in both rural and urban settings. Many of these emergencies are unpredictable.[1,2] Physicians and certified nurse midwives have traditionally received their obstetric emergency care training through classroom lectures and attempts at hands-on experience during actual emergencies. The rarity of actual emergencies highlights the inadequacies of the traditional approach due to the competition for emergency experiences between learners and the ethical and legal dilemmas inherent in allowing a novice to manage an emergency. The result is that the training experience of any one maternity care provider in emergency management is variable. On completion of formal training, the maternity care provider may be placed in the infrequent, but disquieting position of needing to respond to an unanticipated obstetric emergency without the benefit of prior or recent experience and perhaps without the availability of ready consultation. The ability to turn to a practiced protocol will increase the clinician's confidence and may improve the patient's outcome when an emergency occurs.

Even when skills have been developed, maintaining emergency management skills can be difficult for those providers who rarely encounter particular emergencies. For example, a family physician or certified nurse midwife attending 25 to 50 low-risk deliveries per year might go 3 to 4 years without managing a significant shoulder dystocia; even the obstetrician who manages 200 deliveries annually may average only one true shoulder dystocia each year. Assisted outlet forceps or vacuum deliveries might be done only a few times a year by providers with low delivery volumes.

Thus, developing and maintaining

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skills in emergency obstetric care can be a problem for clinicians with a low obstetric volume who provide low-risk and/or low-intervention maternity care; these clinicians provide important services and are an essential part of the US pregnancy care system. These providers are especially important for patients with limited access to care due to geographical, financial, or cultural barriers. The continued or expanded availability of these services is threatened by the attrition of family physicians and others from the ranks of maternity caregivers. We hypothesized that this attrition may be in part related to providers' perceived level of emergency management skills and the level of professional support they receive.

RATIONALE FOR THE ALSO COURSE

We decided that a standardized skill-building Advanced Life Support in Obstetrics (ALSO) course would help to address the problem of developing and maintaining maternity care emergency skills. A course with protocols for obstetric emergencies was designed to increase the skills and confidence of providers and improve collaboration among physicians, nurses, and others.

The educational format and methods used by the Advanced Cardiac Life Support, Advanced Trauma Life Support, the Pediatric Advanced Life Support, and the Neonatal Advanced Life Support courses were deemed ideal for these purposes. A strength of the existing advanced life support courses is that they are designed to be taught in local communities and thereby reach more providers and enhance standardization and communication in the local community. Therefore, the ALSO course was patterned after these well-established courses and was based on a collaborative model that provided extensive feedback to learners during the sessions.[3]

The curricular content was developed by a multidisciplinary group consisting of family physicians, obstetricians, a perinatologist, and a nurse practitioner. This development group selected topics on the basis of their importance and their emergent nature. In addition, it was decided that psychosocial emergencies (such as the death of an infant) should be included.[4]

Because there often is disagreement among experts and because firm guidelines based on sound studies are few, the curriculum was developed with the express acknowledgment that the management strategies presented were not necessarily the best or only strategies but rather that they represented *reasonable* strategies. This was done to avoid protracted arguments about the best way to manage a given situation.

In addition, ALSO followed the important principle, used by other life support courses, that the course should be presented primarily by faculty at the local institution, that new faculty should be recruited from the ranks of course attendees, and that the faculty should include all types of maternity care providers.

CONTENT AND FORMAT OF THE ALSO COURSE

The ALSO course consists of an instructor's syllabus, a provider syllabus, a lecture series with a standardized slide set, hands-on skill-building emergency procedure workshops, and evaluation with feedback. The workshops are conducted using custom-designed maternal-fetal mannequins. The evaluation is done through supervision at the skill-building workshops, an objective test, and a skill-assessment "mega-delivery" testing station that tests the learner's assimilation of the material. An outline of the course, which generally takes about 14 hours, is presented below.

Didactic topics:
- Who should deliver where: regionalization of services and risk assessment
- Diagnosis and management of first-trimester vaginal bleeding emergencies
- Third-trimester vaginal bleeding
- Preterm labor
- Premature rupture of membranes
- Dysfunctional labor and the use of oxytocin
- Malpresentations, malpositions, and multiple gestations
- Shoulder dystocia
- Neonatal resuscitation review
- Forceps and vacuum extraction
- Electronic fetal heart rate monitoring
- Ultrasound in labor and delivery
- Communication issues in obstetrics: patients and birth crisis
- Communication issues in obstetrics: working with staff and consultants
- Medical emergencies in labor and delivery
- Third-stage and postpartum emergencies
- Obstetric risk management and malpractice

Skill-building workshops:
- Forceps and vacuum extraction
- Shoulder dystocia
- Fetal heart rate monitoring interpretation
- Malposition, malpresentation, and multiple gestations
- Ultrasound in labor and delivery (optional)
- Neonatal resuscitation procedure review (optional)
- Managing a birth crisis in the family (optional)

Evaluation:
- Objective test
- Monitoring at skill-building workshops
- Mega-delivery skill testing

Course participants filled out a simple standardized evaluation form, in addition to any provided by the local sponsoring institution, after the course.

METHODS

From September 1991 through December 31, 1993, the University of Wisconsin Department of Family Medicine sponsored 35 ALSO courses in 20 different communities, with a total of 1315 attendees who completed the course. The ALSO courses were advertised predominantly to family physicians. The course content was essentially unchanged during this time, although revisions of the syllabus, slide set, and objective examination were made.

The 1315 attendees were surveyed using an evaluation form handed out during the 35 ALSO course presentations. A total of 1012 survey forms were returned and

Practice Situation of Attendees (N=1012)*	
Location of practice	
Urban	380 (38)
Semiurban	241 (24)
Semirural	158 (16)
Rural	207 (20)
Other or no response	26 (3)
Size of hospital	
<50 beds	168 (17)
50-100 beds	134 (13)
101-300 beds	329 (33)
>300 beds	301 (30)
Other or no response	80 (8)
Obstetric resources and backup available	
Have no obstetrician on staff	150 (15)
Have 1 to 3 obstetricians on staff	134 (13)
Have >3 obstetricians on staff	640 (63)
Other or no response	88 (9)
Pediatric resources and backup available	
Have no pediatrician on staff	171 (17)
Have 1-3 pediatricians on staff	135 (13)
Have >3 pediatricians on staff	618 (61)
Other or no response	87 (9)

Data are given as number (percent). Percentages may not add to 100 because of rounding.

tabulated for a 77% response rate. One reason for a lower response rate was that some persons listed as attending these courses were also instructing in them and, therefore, did not fill out evaluation forms. The responses were tabulated and a statistical analysis of difference was carried out using the χ^2 method.

RESULTS

Most ALSO courses were oversubscribed. The large national demand for ALSO training necessitated the transfer of the rights to the course to the American Academy of Family Physicians, which has assumed responsibility for its continued development, operation, and dissemination.

Of the 1012 attendees who completed the survey, more than 75% were family physicians in practice. Routine maternity care was provided by 87% of the respondents, high-risk obstetric care with consultation was practiced by 68% of respondents, and high-risk care without consultation was offered by 9%. The background and scope of practice of the attendees are summarized below (percentages may not total 100 because of rounding).

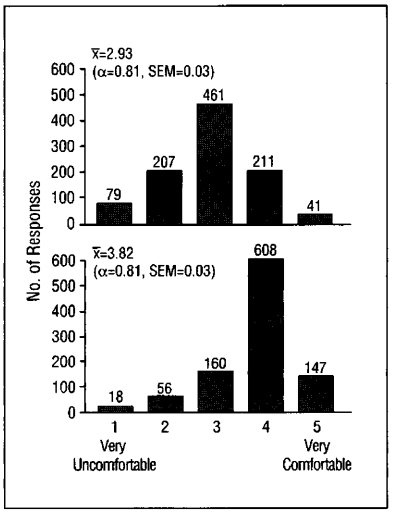

Figure 1. *Level of comfort with obstetric emergencies prior to (top) and after (bottom) taking the Advanced Life Support in Obstetrics course.*

Background of Attendees	No. (%)
Family physicians	769 (76)
Obstetricians	12 (1)
Residents	148 (15)
Nurses	50 (4)
Other or no response	33 (3)
Scope of Current Practice	
Currently practicing obstetrics	880 (87)
Practice high risk with consult	687 (68)
Practice high risk without consult	90 (9)

The respondents came from a wide range of practice settings, with most coming from urban or semiurban areas with obstetric and pediatric backup. About 15% came from institutions with no obstetrician or pediatrician support (**Table**).

The respondents showed a significant increase in their comfort level with obstetric emergencies following the course (**Figure 1**). The respondents also believed that by attending the course they were more likely to continue to provide maternity care (**Figure 2**).

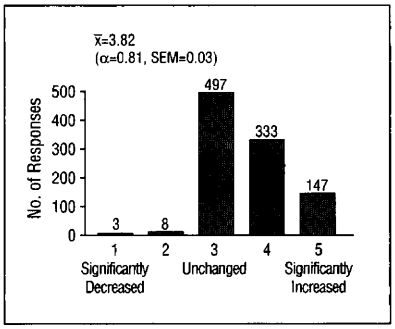

Figure 2. *Likelihood of continuing to practice obstetrics as a result of taking the Advanced Life Support in Obstetrics course.*

CONCLUSIONS

The numbers of physicians taking the course and its rapid expansion suggest that there is a major unmet need for a skills-oriented course in the management of obstetric emergencies. The results obtained from the evaluations of the ALSO course suggest that some of its goals are being met and that physicians do feel more comfortable with emergency management after taking the course than they did before. Similarly, it appears that the physicians who have taken the course believe that there is an increased likelihood that they will continue to provide obstetric services.

COMMENTARY

Should physicians and other providers with low obstetric volumes be providing obstetric services? It could be argued that all deliveries should be done by obstetricians in high-volume centers with a high level of technical resources. This does not necessarily appear to be the case.

How important are clinicians with low obstetric volume in the provision of maternity care services? Approximately 23% of the US population lives in rural America. Obstetricians tend to be concentrated in larger cities and teaching centers and constitute less than 1% of the physicians in communities of less than 10 000.[5] Two thirds of the maternity care providers in rural areas are family physicians or general practitioners.[6] Thus, the care of a sizable number of maternity patients, especially in rural hospitals, is the responsibility of family physicians. If rural health needs are to be met, it is important for family physicians as well as other providers to maintain management skills for obstetric emergencies. Maintaining skills is

even more difficult for emergency physicians, nurses, and paramedics, who do not practice obstetrics but may encounter emergencies.

The decline in the percentage of primary care providers willing to provide maternity care has continued, with only 26.1% of family physicians nationwide providing routine in-hospital obstetric care in 1993.[7] In some states the situation is even more dramatic—in 1991 only 31 of 1762 active members of the American Academy of Family Physicians in Florida offered maternity care.[8] Similar problems exist in other states, and it is probable that the impact of this attrition will be greatest on rural, poor, and minority populations.[9,10]

Pregnant women who leave their rural communities to obtain care because of a lack of local providers have a higher proportion of complicated deliveries, greater rates of prematurity, and increased costs of neonatal care.[11] The increased availability of family physicians who provide maternity care in rural areas can have a positive effect on the utilization of prenatal services,[12] which have generally been associated with better outcomes. The issue of access to maternity care has recently been reviewed in detail.[13]

anxiety plays a greater role in physician attrition from obstetric practice

What is the quality of maternity care provided by clinicians with low obstetric volume? Despite the problems of low volume and the accompanying decreased opportunity for "practice" in emergency management, there is ample evidence that the outcome of care for most patients in rural settings with appropriate regionalization can be as good as the care for patients in more urban environments.[14-17] In one study of settled obstetric malpractice claims, nonobstetricians (and, by extrapolation, physicians more likely to be in rural settings) did not have a significantly higher rate of actual malpractice in settled cases as judged by independent reviewers than did obstetricians.[18] A recent detailed review of the literature determined that outcomes were equivalent between family physicians and obstetricians.[19] Interestingly, data suggest that even volume of care may not be related directly to quality of care.[20] When quality-of-care problems leading to bad outcomes do arise, they occur primarily during labor and delivery. Problems during labor and delivery account for over 66% of settled obstetric malpractice claims for both obstetricians and nonobstetricians.[21] Data suggest that standardized approaches to certain high-risk situations can improve outcomes and decrease liability risk.[22] It is intended that the ALSO course provide improvement in emergency management skills as well as in providers' comfort with their skills.

Why are clinicians with low obstetric volume abandoning maternity care practice? This question is especially important given the current and increasing need for readily accessible and high-quality maternity care services. Family physicians may choose to discontinue obstetrics for several reasons, possibly including inadequate reimbursement, higher malpractice premiums, and the personal and professional stresses related to obstetrics. It is possible that there are at least two other factors not well delineated by studies, that are important in physicians' decisions to continue maternity care.

The first factor is that the physician may not feel comfortable with his or her emergency management skill level. While no studies are available that relate directly the influence of provider anxiety on perceived competence in the decision to continue maternity care, it is probable that this anxiety plays a greater role in physician attrition from obstetric practice than has been documented (B. Bagley, MD, Chair, American Academy of Family Physicians Task Force on Obstetrics, oral communication, 1992). Various studies[23-26] have suggested that both lifestyle and liability issues are pivotal in a physician's decision not to perform obstetrics. Other authors[27-30] question whether the malpractice issue is simply a socially acceptable reason to discontinue maternity care when other issues are the real reasons.

While a lack of obstetric training is cited as a reason for not providing obstetric services by only 13% of Florida family practice residents, the fear of being sued was cited by 62%.[31] Interestingly, the high cost of malpractice premiums was a factor for only 39% of the Florida respondents. It seems possible that the fear of being sued may reflect either physicians' misperception of the actual risk or their anxiety regarding their skill levels. Additional evidence of this anxiety is that 20% of family physicians stopped obstetrics because of an insufficient number of deliveries, 13% for inadequate training, and 16% for difficulty in keeping up with advances.[32] The availability of a course such as ALSO could help physicians regain confidence in and cultivate a desire to retain their maternity care practices, as well as improve the quality of patient care in emergency situations.

The skills development issue is as important for resident physicians considering future maternity care practice as skills maintenance is for physicians in practice. While the length of obstetric training does not have an effect on the likelihood of practicing obstetrics, it is notable that many family practice residents identified more training (including procedures) and the provision of state-of-the-art guidelines as ways that maternity care practice could be promoted.[33] Residency-trained family physicians who never practiced obstetrics felt less well trained overall, not only around pregnancy care issues.[23]

The second factor is that the practice environment may not be supportive of family physicians who provide maternity care. Better collaboration is needed between family physicians and obstetricians so that the current disagreements on roles and privileges can be resolved. In particular, obstetricians are concerned that family physi-

cians are inadequately trained and that accepting consultations from family physicians during labor or delivery puts the obstetrician at an increased risk of being sued.[34] There is limited evidence[24,32] that a supportive practice environment for obstetrics is a factor in family physicians' decisions to continue maternity care. If this is borne out, then it would follow that the environment for family physician maternity care would be improved through joint educational efforts with obstetricians and nurses. Thus, ALSO may increase the likelihood that family physicians will continue to provide maternity care services by improving the communication and the level of mutual support between the various providers and by the standardization of management techniques.

Based on the enrollment in the ALSO courses offered thus far, it is evident that there is an unmet need for standardized, skill-oriented, continuing medical education with hands-on training in maternity care emergencies. We expect that there will be an increasing need for ALSO training, not only for physicians in practice but for residents in family practice, obstetrics, and emergency medicine as well as for midwives, obstetric nurses, paramedics, and other birth attendants. There is reason to believe that the ALSO course is effective in enhancing physicians' confidence in their skills for managing obstetric emergencies. For this reason, and the possibility that the ALSO course may create a more supportive practice environment, we are optimistic that the course will encourage all types of providers to continue to provide needed maternity care services and that the quality of these services may be improved.

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For information about the ALSO course, contact the American Academy of Family Physicians, 1-800-274-2237.

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