



Averting maternal death and disability

Evolution of the postabortion care program in Nepal: the contribution of a national Safe Motherhood Project

I. Basnet^{a,*}, S. Clapham^b, G. Shakya^c, M. McCall^d

^a*Nepal Safer Motherhood Project (NSMP), Kathmandu, Nepal*

^b*DFID, Nepal*

^c*Family Health Division, Ministry of Health, His Majesty's Government of Nepal, Nepal*

^d*NSMP, Nepal*

Received 30 August 2003; received in revised form 28 February 2004; accepted 24 March 2004

Abstract

The objective of this review is to present the findings and lessons learned over the first 4 years (1999–2002) of implementation of postabortion care (PAC) services outside of major urban centers in Nepal, where a significant proportion of services are provided by nurses. The contributions made by a national Safe Motherhood project to the establishment of the National Postabortion Care Program including the promotion of nurse providers within an integrated program of emergency obstetric care services are highlighted. Clinical competency assessments and service utilization data from three district hospital-based postabortion service sites supported by the Nepal Safer Motherhood Project are analyzed. The relationship between the findings of this assessment and two previous assessments, one covering two districts and one nationwide, are discussed. This review found that nurses are at least as competent as physicians in providing postabortion care services. The inclusion of postabortion care into the emergency treatment of obstetric complications provided the environment needed for successful introduction of nurse-led PAC services. Competency-based training of nurse providers is the key to making life-saving postabortion care services accessible and affordable in Nepal. Ensuring that these nurse providers are able to implement services requires strategic planning, careful advocacy and support from physician colleagues as well as the presence of adequate infrastructure and equipment. The successful introduction of postabortion care services into three district hospitals also offering emergency obstetric care provides an example of how a nurse-led service can be integrated into an emergency obstetric care support project. The project's learning has influenced national policy on the expansion of the postabortion care program throughout Nepal.

© 2004 International Federation of Gynecology and Obstetrics. Published by Elsevier Ireland Ltd. All rights reserved.

Keywords: Postabortion care; Developing countries; Manual vacuum aspiration; Emergency obstetric care; Nurses' roles

*Corresponding author. Fax: +977-1-4248-989.

E-mail address: indira@nsmp.org.np (I. Basnet).

1. Introduction

Nepal has one of the highest maternal mortality ratios (MMR) in Asia. The government estimates the MMR to be 539/100 000 live births [1]. A 1998 national study estimated that 5.4% of maternal deaths were a result of abortion complications [2]. However, it is probable that this figure is underestimated as other studies suggest that 15–30% of all maternal mortality, and up to 50% of all maternal deaths in Nepal's hospitals, are attributable to complications of unsafe abortion [3,4]. The high level of unsafe abortion is because the legalization of abortion was only ratified in December 2003.

Concerted efforts to reduce maternal mortality began in 1997 with the launch of His Majesty's Government of Nepal (HMGN) Safe Motherhood Program. This was followed in 1998 by the National Safe Motherhood Policy, a far-reaching comprehensive policy that addresses health service needs (excluding postabortion care), as well as the social aspects of safe motherhood. The strategies outlined for achieving the goals of the safe motherhood policy include a national IEC (information, education, communication) campaign for safe motherhood; increasing community involvement; increasing access to skilled delivery attendance; improved access to basic (BEmOC) and comprehensive emergency obstetric care (CEmOC); improved neonatal care; more efficient and effective human resource development, improved quality of care, and enhanced monitoring and evaluation systems.

In 1997, the Nepal Safer Motherhood Project (NSMP), funded by DFID and managed by Options UK, began with the explicit purpose of promoting access to emergency obstetric care (EmOC) through the development of a district EmOC model to address the availability and quality of care, as well as the complex barriers to EmOC-seeking behavior in project communities. During Phase One of the project (1997–2000), NSMP operated in three districts expanding to a total of 10 districts in Phase Two (2001–2004), representing 15% of Nepal's population. The total NSMP direct programming budget for both phases

is £2.08 million sterling, equivalent to US \$3.7 million.

Abortion has been a sensitive issue in Nepal and only recently was a law passed to allow therapeutic abortion under specific circumstances. However, in 1995, HMGN's Ministry of Health's Department of Health Services (DoHS) responded to the need to improve the management of the life-threatening complications of abortion by launching a pilot postabortion care program in one site (the Maternity Hospital) in the capital, Kathmandu. The small PAC pilot was, therefore excluded from the original Safe Motherhood Program and Policy. Gradually (Fig. 1 depicts the program's expansion), the program was extended to other urban referral centers and in 1999 into the first district based hospitals.

A study in 1998 revealed the high demand for PAC—complications of abortion accounted for the highest caseload in obstetrics departments of district hospitals [2]. A needs assessment [5] carried out in three NSMP-supported Phase One district hospitals in 1997 showed that doctor-led PAC services at that level were unresponsive to client needs. Doctors treated complications of abortion by dilation and curettage (D&C), no clinical protocols were available, infection prevention practice was poor, the blood supply was erratic, and neither counseling nor referral was considered an integral part of the service. In addition, services were not available 24 h a day, 7 days a week (24/7) due to the frequent absence of doctors from their posts. There was clearly a need to expand access to services through the training of other health staff. However, there was no policy to allow for this.

PAC has been a medically-dominated area with few doctors having confidence that nursing staff have the ability to perform what had always been seen as 'medical' procedures. The core group of partners supporting PAC (the DoHS, NSMP and JHPIEGO/USAID) agreed that an aggressive advocacy campaign for nurse-led PAC services risked being counterproductive. The entry point that presented itself as an ideal platform to advocate for the extended role of nurses was the development of national reproductive health clinical protocols for each cadre of health care provider. The protocols were given a 'seal of approval' by

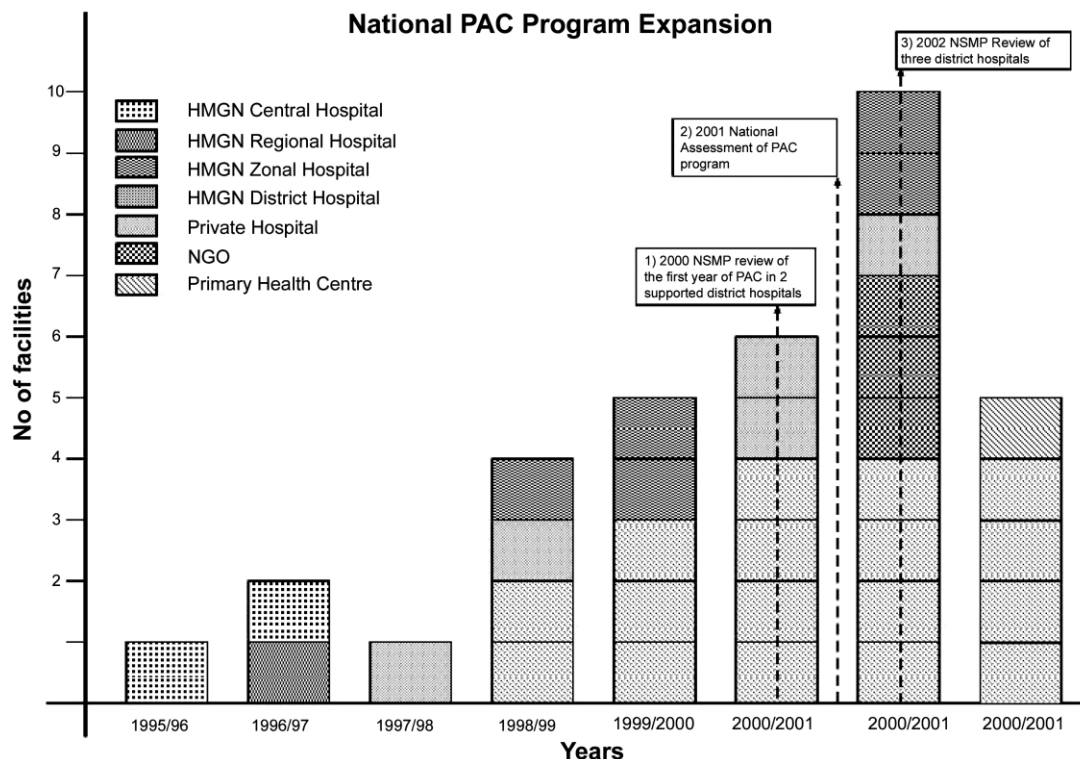


Fig. 1. Timeline of national PAC program expansion.

the DoHS in 1998 thus opening a door to train nursing staff in a variety of BEmOC skills including PAC. A strategic decision was made to initiate nurse-led PAC services from NSMP-supported districts. The training for nurses managed by the government began in 1998, was competency-based and focused on four key areas: (1) emergency treatment of any potentially life-threatening complications; (2) pre-procedure counseling and treatment of incomplete abortion using manual vacuum aspiration (MVA) for cases in the first trimester; (3) post-procedure family planning (FP) counseling and services; and (4) ensuring links exist and making referrals between emergency PAC services and other reproductive health care services. The training for physicians added a section on the use of D&C for gestations >12 weeks. Under this approach it was intended that PAC-trained nurses would be promoted as the first point of contact for women requiring PAC services, and for gestations

<12 weeks, nurses would perform all PAC services on an outpatient basis. Doctors were to be consulted for second trimester cases and for those requiring hospital admission, e.g. for severe anaemia, sepsis, or other life-threatening complication.

NSMP began supporting nurse-led PAC services in November 1998 as an integral part of the full spectrum of EmOC services. NSMP's holistic support to EmOC services includes the provision of a wide range of human resource development—over 14 courses have been developed covering technical and management capacity building. This includes supporting the training of 65 PAC providers (45 nurses and 20 physicians as of October 2003) who attended the national PAC training program established at HMGN National Health Training Centre. NSMP also provided appropriate EmOC equipment; infrastructure improvements (new buildings such as operating theaters, and renovation work, e.g. improved water and electricity supplies); and

establishment of safe blood transfusion services. The newly-trained PAC service teams were therefore able to establish their services within this 'enabling environment'. While PAC-specific equipment such as MVA syringes came from the national PAC program, all other onsite support, including the establishment of PAC monitoring systems was provided by NSMP's EmOC support package.

The importance of mid-level providers in the decentralization of PAC services has been described in countries such as Ghana [6,7] and Kenya [8]. The importance of creating an enabling environment for PAC services in Nepal has also been acknowledged though not comprehensively studied [8]. However, there is little information available about how PAC can be successfully integrated and managed as a critical element of EmOC programming as is described in this paper.

2. Methods

Clinical competency assessments and service utilization data from the first three NSMP-supported district PAC sites in Nepal over the years 1999–2002 were reviewed and analyzed by NSMP staff. The first of these was an NSMP-supported review of the first 12 months (January–December 1999) of nurse-led PAC services at two (of the three) district hospitals. The second set of data reviewed by NSMP was from a 30-month period (March 2000–August 2002) in three district hospitals. The findings from these reviews were shared with HMGN and other external development partners, and the effect of this dissemination on national health policy and PAC program development are discussed. These reviews also brought to light several issues, one of which—the cost of PAC services—led to an investigation of direct and indirect PAC costs at NSMP-supported hospitals.

The findings from a national PAC program assessment completed in 2001 and supported by JHPIEGO/USAID are also briefly reviewed here. The clinical skills evaluation tools used in these assessments are explained. NSMP's reviews are compared to the findings of the national assessment.

The relationship between the expansion of the program and the timing of the assessments reviewed in this paper is shown in Fig. 1. By October 2003, 250 providers and assistants have been trained in PAC in Nepal. These providers are working in 23 districts at 34 established PAC service sites. As mentioned above, 65 of these providers have been trained with support from NSMP.

2.1. Assessment of the first NSMP-supported PAC sites—1999

NSMP conducted an assessment of the clinical competency of six nurse PAC providers and also reviewed the service utilization figures for the first 12 months (January–December 1999) of the PAC services at two district hospitals. The assessment tools used were the written knowledge exam (mid-course questionnaire) and the clinical competency checklist from the national PAC training curriculum [9]; a combined score of 85% was deemed to reflect overall competence. The results reflected the clinical competence of nursing staff, who all achieved scores of 85% or better. It was also encouraging to note that family planning information and services, not previously given to women with abortion complications, became routinely offered by the nurse-led service.

The service utilization figures in Table 1 show that before the introduction of PAC training and a formal PAC service, all postabortion complications requiring surgical intervention (61) were treated by doctors using D&C. During the first year of nurse-led PAC services, the numbers of women presenting for PAC to the district hospital increased by 37%, and the majority (67/93) of cases requiring surgery were treated by nurses using MVA. This increase in utilization has been credited to the availability of the nurse-led PAC service as well as increased awareness created by the promotion of EmOC.

In spite of this improvement, 10% of cases were still referred to other centers for PAC. This high referral rate was partly due to some PAC-trained nursing staff being transferred soon after completion of training. This meant that PAC trained nurses were often not available to cover night shifts and

Table 1

Service utilization of abortion-related services at two district hospitals before and after introduction of PAC training and formal service

Treatment of abortion-related cases	1997–1998 before introduction of PAC training	1999–2000 after introduction of PAC training and service
	Number of patients/procedures (% of total) <i>n</i> = 71	Number of patients/procedures (% of total) <i>n</i> = 114
Treated by MVA (nurses)	0	67 (59%)
Treated by D&C (physicians)	61 (86%)	26 (23%)
Referred to next level hospital	8 (11%)	11 (10%)
Supportive care only (threatened or spontaneous complete abortion)	2 (3%)	10 (9%)
<i>Total</i>	71 (100%)	114 (100%)

that PAC was usually available only during the regular daytime hours of the outpatient clinic. Subsequent PAC training and advocacy has emphasized the importance of providing 24/7 service regardless of the type of trained provider.

Hospital-based studies in Nepal have reported that women presenting with abortion-related complications comprise more than 10% of the total number of female patients treated [3]. However, at the two district hospitals reviewed, this proportion was just 3%. This finding resulted in the nursing staff actively promoting PAC services through a range of innovative means with peers and community groups.

Despite its small scale (two hospitals), the findings of this first assessment critically influenced PAC policy. The DoHS was persuaded that nurses were competent PAC providers and that the nurse-led program should be scaled up.

The assessment itself had a significant impact on improving the services at all three NSMP hospitals. PAC has become fully integrated into 24/7 EmOC services, capitalizing on the general enabling environment created—due to both improved general clinical care and enhanced hospital management. For example, PAC services were integrated into the institutional quality of care review system—a process used by local teams to monitor the quality of EmOC services, identifying problems and seeking local solutions.

2.2. National assessment—2000–2001

The study had two objectives; to assess the ability of trained PAC providers to provide quality PAC at their workplace and to assess the capacity of the established PAC service sites to provide quality PAC. It focused on nine established PAC centers, both rural and urban (including the three NSMP Phase One district hospitals discussed previously), was jointly carried out by JHPIEGO/USAID and HMGN's Family Health Division (FHD) between December 2000 and April 2001 [10].

While the numbers of providers evaluated in this study were small (17 total, six nurses and 11 physicians), the results showed that nurses were good providers of PAC as assessed by a competence score derived from the Critical Steps in Observation of Postabortion Care Service Provision tool [10]. Five of the total 17 providers evaluated were from NSMP-supported districts. The tool analyzes 77 steps considered to be emergency responses in the delivery of quality PAC; a score of 90% or more was considered to reflect overall competence. The mean score for PAC-trained nurses was 77% with a range of 53–96% and two of the six nurses achieved scores of 90% or more. The mean score for doctors was 70% with a range of 22–93%. While the nurses overall scored higher than physicians, the authoritarian

Table 2
PAC provider competency as scored by observer using the *Critical Steps in PAC* checklist

Critical Steps in PAC	District A average scores (%)		District B average scores (%)		District C average scores (%)	
	Nurse n=4	Physician n=2	Nurse n=5	Physician n=1	Nurse n=3	Physician n=3
(1) PAC counseling: pre and post procedure (26 steps = 100%)	88	72	82	78	76.5	75.5
(2) MVA Procedure						
(a) Preparation for procedure (17 steps = 100%)	79	81	86	84	69	71
(b) Performing MVA procedure (16 steps = 100%)	82	80.4	88	87.1	81.4	81
(c) Post procedure tasks (9 steps = 100%)	100	100	100	100	89	87
(d) Recording and reporting (5 steps = 100%)	100	100	100	100	60	60
(e) Client discharge Instructions (4 steps = 100%)	100	100	100	100	70	30
<i>Average total score by type of provider</i>	91.5	88.9	92.6	91.5	74.3	67.4
<i>Average total score by facility</i>	90.2		92.0		70.8	

relationships between doctors and nurses sometimes forced nurses into more subservient roles, making it difficult for them to fulfill their duties as PAC providers. The study also found that infection prevention practices of both nurses and physicians were good but that record keeping was generally poor and that pain management needed improvement for both groups.

The key recommendations presented by the National Assessment Team included the need for:

- facilitating a 24 h a day, 7 days a week (24/7) service;
- strengthening the role of nurses as PAC providers;
- reinforcing PAC provider skills through follow-up and monitoring and supervision visits; and
- improved record keeping.

2.3. Assessment of PAC at three NSMP-supported district hospitals, 2000–2002

The purpose of the assessment was three-fold: to assess competency level; analyse utilization data; and identify enabling environmental factors. PAC provider competency, measured using the

same Critical Steps in Observation of Postabortion Care Service Provision tool developed for the National PAC Assessment, was examined in three district hospitals during September 2002. NSMP assessed the competency of 18 PAC providers (six at each site); the results are shown in Table 2. This study of three district hospitals, therefore, looked at numbers comparable to the national assessment and added important information to the review of the national program by also examining service utilization figures.

NSMP staff observed 12 nurses and six physicians practice for 7 days. Eight nurses and three physicians were observed providing services to clients. Due to the small number of cases that presented during the observation period, four nurses and all the physicians were evaluated through a simulation using the Zoë™ anatomical model. Observer evaluation of provider competency in two of the three hospitals (Districts A and B) was very encouraging; the average scores were 90.2% and 92.0%, respectively, with perfect scores attained by all providers on post-procedure tasks, recording and reporting and client discharge instructions. At all three sites, nurses performed as

Table 3

Abortion complications presenting at three district hospitals (30 month period from March 2000–August 2002)

(a) Abortion cases by age group					
Age group (years)	District A	District B	District C	Total	Percentage
15–19	43	11	50	104	15.2
20–24	76	27	142	245	35.9
25–29	51	26	78	155	22.7
30–34	25	9	40	74	10.9
35–39	10	20	31	61	8.9
40–44	3	8	19	30	4.4
45–49	0	7	6	13	1.9
<i>Total</i>	208	108	366	682	100.0
(b) Gestational dating of PAC cases					
Number of weeks	District A	District B	District C	Total	Percentage
< 12 weeks	88	84	72	244	35.8
> 12 weeks	54	23	29	106	15.5
Not recorded	66	1	265	332	48.7
<i>Total</i>	208	108	366	682	100.0
(c) Diagnoses of abortion complication cases					
Diagnosis	District A	District B	District C	Total	Percentage
Incomplete abortion	201	43	306	550	80.6
Molar pregnancy	0	1	5	6	0.9
Threatened abortion	0	0	15	15	2.2
Missed abortion	0	0	25	25	3.7
Septic abortion	5	3	14	22	3.2
Induced abortion	0	4	1	5	0.7
Spontaneous abortion	0	37	0	37	5.4
Not recorded	2	20	0	22	3.3
<i>Total</i>	206	108	366	682	100.0

well or better than physicians on most tasks. The scores from District C were significantly lower with an average score of 70.8%. However, the providers at this hospital attained near-competence in the areas of performing the MVA procedure and post-procedure tasks. The overall average was brought down by poor performance on recording and reporting, and client discharge instructions.

The delivery of PAC services at District C differed from the other two districts in that PAC training was introduced later—in the middle of 1999. In addition, all eight of the nursing staff originally trained in PAC had been transferred to other facilities during 2000–2001. Therefore, during a six month period, only the two PAC trained doctors were involved in delivering PAC services and they routinely referred clients to the outpatient department or maternal child health clinic for post-

procedure counseling and discharge instructions rather than performing this task themselves. It became clear that although ‘PAC’ was meant to encompass care for all gestations, doctors who attended PAC training perceived the comprehensive package of care as being restricted to gestations of <12 weeks where MVA was used. For more advanced gestations they felt that their role was limited to performing the evacuation procedure alone. This realization led the DOHS to place greater emphasis in subsequent PAC training on the importance of comprehensive care for all gestations; even when treatment besides MVA is required.

Cumulative data on the utilization of PAC services over a 30 month period (March 2000–August 2002) in the three hospitals are presented in Tables 3 and 4. In all, 682 postabortion cases presented

Table 4

Types of postabortion procedures performed at three district hospitals (30 month period from March 2000–August 2002)

(a) Type of procedure														
Procedure	District A				District B				District C				Total	Percent
	<12 weeks	>12 weeks	Not recorded	% total	<12 weeks	>12 weeks	Not recorded	% total	<12 weeks	>12 weeks	Not recorded	% total		
MVA	88		16	50%	80			74%	72		5	21%	261	38.3
D&C		6		3%	4	23	1	26%		29	19	13%	82	12
D&E		48	50	47%							241	66%	339	49.7
Subtotal	88	54	66		84	23	1		72	29	265			
Total	208				108				366				682	100

(b) Numbers of procedures by type of provider									
Type of provider	District A		District B		District C		Total	Percent	
	Number	% total	Number	% total	Number	% total			
Doctor	137	66%	38	36%	300	82%	475	70.0	
Nurse	71	34%	67	64%	66	18%	204	30.0	
Total	208		105		366		679	100.0	

during the time period. Some of the key findings from the analysis of the data include the fact that, on average, one in six (range of 10–20%) post-abortion care clients were adolescents aged 15–19 years. This is not unexpected since the median age at marriage is now 16.8 years and 19% of all pregnancies are among women <20 [11]. However, it does point to the importance of ensuring that PAC and family planning counseling services are attentive to the needs of adolescents.

Record-keeping regarding gestational date of the pregnancy was very poor with nearly half (48.7%) of all cases lacking this information. Of the abortion complication cases where gestational date was recorded (350/682), 69% were <12 weeks gestation. This finding contrasts with the near-perfect performance of record-keeping tasks (at two facilities) during observation. A closer look at this issue revealed that PAC cases often presented to the outpatient department (OPD) and were first assessed by general nursing staff not necessarily trained in PAC. In addition, the outpatient history forms that they were using did not request information specific to pregnancy. This understanding informed strategic changes made to the national EmOC reporting systems in 2003.

Over 96% of the PAC cases included a diagnosis. The majority of cases (80.9%) were diagnosed

as ‘incomplete abortion’ and <1% of cases were recorded as complications of induced abortion (0.7%). Given the legal status of abortion in Nepal at the time of the assessment, some induced abortions may have been represented by patients or providers under the less stigmatized diagnosis of incomplete abortion.

The proportion of cases treated by MVA was 38.3%, very close to the proportion of cases with recorded first trimester gestational dates (35.8% of all cases). Nurses performed 30% of all procedures and since they are only certified to use MVA, they are assumed to have performed the majority of the MVA procedures. However, the proportion of cases managed by MVA has dropped significantly from the 1999 findings of nearly 60% (58.7%) treated using MVA. There are several reasons for this change. After the completion of the original PAC training in 1999–2000, a third of those trained (10/29) were transferred to other institutions; the majority of those transferred were nursing staff (7/10). This created intermittent shortages of PAC trained nurses at all these hospitals and increased the reliance upon doctor-led services. As elaborated below, physician providers have tended to use D&C or D&E more than MVA. Frequent transfers of staff are a systemic problem in Nepal’s health

sector and are not a problem specific to the PAC program.

Nearly half of all abortion complications (49.7%) were treated by D&E, a procedure associated with more advanced gestational ages. Because of the large proportion of cases with no recorded gestational date it is difficult to say whether the use of D&E was strictly necessary. It was noted that although all of the district hospital doctors are trained PAC providers, they performed a small proportion of MVA procedures. If, as suspected, there is a significant number of first trimester gestations included in the 'unrecorded' category attended by doctors, these women may be undergoing procedures entailing greater risk and cost than is necessary. Although it is possible that an unusually large proportion of abortion complications presented at advanced gestational dates to the three hospitals during the assessment period and were, therefore treated appropriately, it is more likely that reliance on D&C/D&E has to do with provider convenience, e.g. gathering up a number of cases for treatment in the OR at a time convenient for the staff rather than treating each case as it presents in the outpatient MVA unit. Physician providers also appear to be more comfortable performing procedures requiring general anesthetic (D&C and D&E) vs. local anesthetic and/or 'verbicaine' (verbal reassurance) recommended with MVA.

The large proportion of cases treated by D&C and D&E led the project to consider that there may be other incentives apart from physician comfort and convenience. Investigation in 2003 into the costs charged at all three hospitals revealed that the average cost for a case managed with MVA was Nepali rupees (NRs) 683, approximately equal to US\$9, and for D&C or D&E it was NRs 983 (US\$13). Therefore, the average actual cost to the patient (service charges plus costs of drugs, supplies and hospital stay) was 44% higher for D&C and D&E procedures than for MVA. However, these fees are paid directly to the facility rather than the provider, thus no personal financial gain appears evident. There appears to be no pressure from the hospital management committee to choose a more expensive procedure.

Only about half of the postabortion care patients (56%) received counseling on FP methods, according to records. The low proportion of patients counseled was skewed by the one physician provider at District C who did no counseling. While providers demonstrated the ability to maintain good records when observed, it appears that record-keeping does not get the same attention during the normal workday.

However, more than 50% of all PAC patients accepted a contraceptive method before leaving the clinic compared with the national contraceptive prevalence rate of 39% [11]. Just over 1/4 of patients who received FP counseling chose condoms (27.7%). This acceptance level is high when compared to national condom use which accounts for only 11.6% of modern contraceptive use of ever-married women [11]. One reason for this difference is that PAC clients are anxious to return home and do not feel ready to make a long term decision about family planning so they accept condoms as the simplest recourse. Moreover, some providers still insist on delaying the start of some methods until after the client's next menstrual period and give condoms as an interim measure until the client returns. These realizations led to a greater emphasis during PAC training on the importance of giving appropriate FP methods immediately postabortion with no need to wait for the next menstrual period.

3. Summary

This paper also shows the critical role a mature project can play in ensuring that learning from monitoring exercises and periodic assessments informs national policy (providing the evidence for increasing support nurses to in the provision of PAC) as well as the program's quality (effective feedback from the assessments linked into revisions and improvements to the training program). This kind of policy-level feedback is an important responsibility of all reproductive health and safe motherhood projects.

The PAC program has now been integrated into 22 district hospitals with many, though not all, providing the full range of EmOC services. It is now well established that nurses are critical players

in bringing life-saving services to rural women. Nepal's ever-improving PAC program is making a significant contribution to the prevention of maternal deaths related to abortion complications.

Recommendations to Nepal's PAC program include:

- FP counseling skills and easy access to FP methods are critically important to the success of PAC program.
- HMGN and the Ministry of Health need to review the impact of frequent transfer on service provision and address the incentives and disincentives for seeking transfer. NSMP has found that data on the impact on service provision resulting from frequent transfer is a powerful advocacy tool with Ministry of Health senior policy makers and program managers. NSMP has attempted to address this issue through individual professional development, team-building, and quality of care initiatives that increase job satisfaction. These activities as well as the enabling environment of improved physical facilities and on-site supervision and support are beginning to reduce the incentives for seeking transfer.
- The reasons behind physician preference for more invasive procedures even for early abortions needs to be further investigated. PAC training for physicians must emphasize the decreased risk of complications associated with MVA compared with D&C and D&E.
- Adequate record-keeping is a major challenge that must be addressed to monitor and evaluate the national PAC program. Ensuring that outpatient and admission records include information specific to pregnancy is a simple but important step in improving these records.

The lessons learned from Nepal's experience of implementation and expansion of the national PAC program are applicable to many developing countries where competency-based training of mid-level providers and the integration of PAC into EmOC may be critically important steps towards making life-saving postabortion care services accessible and affordable.

Some of the general lessons learned from Nepal that are of global significance with respect to the

establishment of PAC and its expansion through nurse-led services are:

- Nurses are at least as competent as physicians as providers of PAC services and generally provide more comprehensive care than physicians.
- Advocacy for an expanded role for nurses is important in the establishment of a nurse-led PAC training program.
- There is a need for continuing advocacy for nurse-led PAC services and for expanding the role of other mid-level providers, such as auxiliary nurse midwives, as PAC providers. Advocacy must take place at the macro level with the National Ministries of Health and at the micro level with hospital administrators and medical colleagues.
- Program and hospital managers should be aware of the actual cost of procedures to both clients and the facility, and actively promote MVA procedures for appropriate clients.

Specific lessons learned from the integration of PAC services into an EmOC program include:

- Establishing PAC services at district hospitals has required more than simply training PAC providers. Creating an enabling environment for the whole spectrum of EmOC services is crucial in the successful introduction of nurse-led PAC.
- PAC services can be effectively managed as part of an EmOC program as opposed to a stand-alone or vertical program.
- Continuing collaboration between HMGN and external development partners, based on sound PAC policies, appropriate training, and support to implementation, is key to the scaling up and integration of PAC into EmOC programming.

Acknowledgments

The authors acknowledge the support of the Nepal Safer Motherhood Project funded by the Department for International Development (UK) (DFID) and managed by OPTIONS, UK. The authors are also grateful to Anita Gibson, the

country representative of JHPIEGO, for her assistance and support. For further information, please contact m.cole@options.co.uk

References

- [1] Ministry of Health. Nepal family health survey. His Majesty's Government of Nepal, 1996.
- [2] Family Health Division. Maternal mortality and morbidity study. Department of Health Services, Ministry Of Health, His Majesty's Government of Nepal, 1998.
- [3] Thapa PJ, Thapa S, Shrestha N. A hospital-based study of abortion in Nepal. *Stud Family Plann* 1992;23:311–318.
- [4] Malla K, Kishore S, Padhye S, Hughes R, McIntosh N, Tietjen L. Establishing postabortion care services in Nepal. *J Nepal Med Assoc* 1997;35:104–110.
- [5] Options UK (Nepal Safer Motherhood Project). Hospital needs assessment, Baglung District Hospital, Surkhet District Hospital, Kailali District Hospital. Family Health Division, Department of Health. His Majesty's Government of Nepal, 1997.
- [6] Solo J, Billings DL, Huntington D, Piet-Pelon NJ. In: Huntington D, Piet-Pelon NJ, editors. *Postabortion care: lessons from operations research: midwives and comprehensive postabortion care in Ghana*. New York: Population Council, 1999. p. 141–158.
- [7] Baird TL, Billings DL, Demuyakor B. Community education efforts to enhance postabortion care program in Ghana. *Am J Pub Health* 2000;90:631–632.
- [8] Cobb L, Putney P, Rochat R, Solo J, Buono N, Dunlop J, Vandenbroucke M. Global evaluation of USAID's postabortion care program: postabortion care in Kenya, a case study. Population Technical Assistance Project. Washington, DC.
- [9] Family Health Division, His Majesty's Government of Nepal. *Postabortion care course notebook for trainers* JHPIEGO Corporation. 1997. p. 62–66.
- [10] Rawlins B, Brechin S, Giri K. An assessment of the quality of postabortion care services in Nepal: the training and service delivery perspectives. Family Health Division, His Majesty's Government of Nepal, November 2001.
- [11] Macro International. *Demographic and health survey of Nepal*. Macro International and Department of Health, His Majesty's Government of Nepal, 2001.

Do you want to write for this section?

Articles for the Keystone Section (also known as the Averting maternal death and disability pages) should be submitted electronically to jafortney1@aol.com. They should be in the standard format for this journal (available on request). Authors who do not have access to the internet should submit a hard copy of the paper accompanied by an electronic version on disk or CD to the Managing Editor of the journal.

Articles should describe interventions to reduce maternal mortality and morbidity. The intervention should be described in enough detail that others could adopt it. The means of evaluating the impact of the intervention should be described along with the results of that evaluation. 'Intervention' may be broadly interpreted—as the range of previous articles shows. However, the following topics will not be considered: interventions whose impact was not evaluated; studies to measure maternal mortality; papers describing the causes of maternal mortality; clinical trials; the results of confidential inquiries (unless they led to interventions which are then described and evaluated).

The editor welcomes new reviewers. Anyone who would like to become a reviewer for this section should contact the editor (via the e-mail address above) stating their specific area of interest and their qualifications for serving as a reviewer.