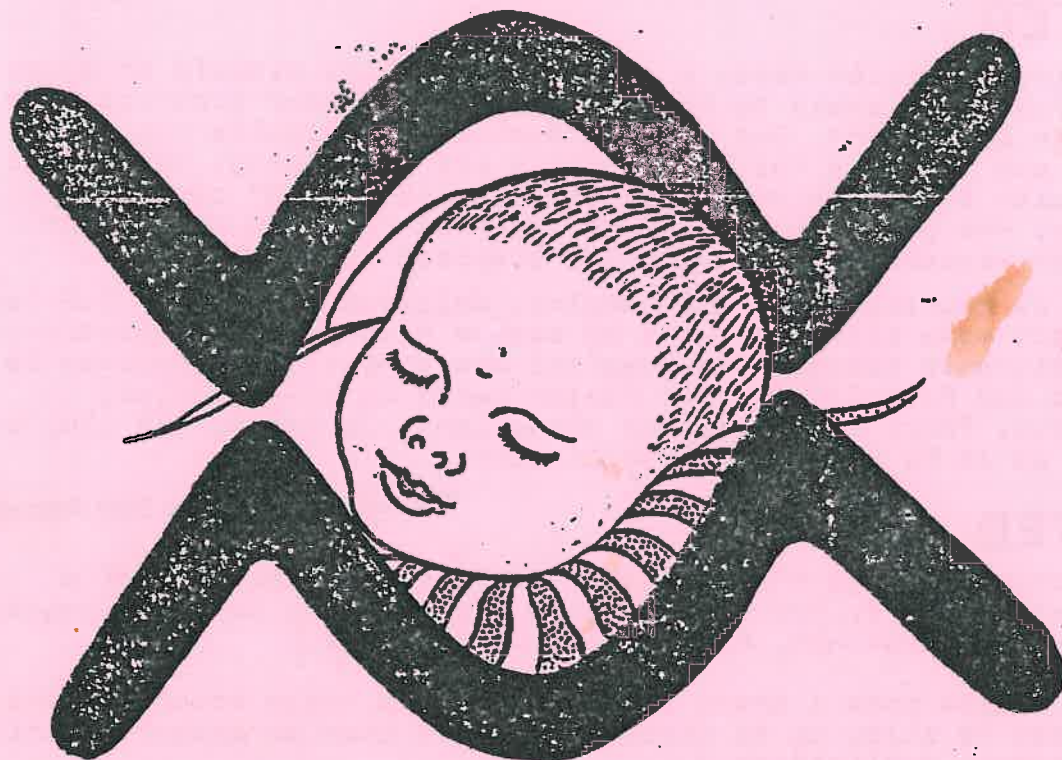


SAVE THE MIDWIVES



FEBRUARY, MARCH, APRIL, 1986.

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NEWS + EVENTS

WANTED

The Wellington region needs a second domiciliary midwife on a part-time or full-time basis to do home deliveries under contract with the Health Department. Our present domiciliary midwife has a full caseload and requests for her services are increasing. She is willing to work with the new midwife for an "apprenticeship" period if necessary. The pay is not grand but support from the Wellington Home Birth Association in every way possible is guaranteed.

The work is rewarding and challenging. Wellington has many G.P.'s who support home births and has an active Home Birth Association. The relationship between the hospital and domiciliary midwives is good, and our Principal Public Health Nurse is co-operative. We need you. Think about it, and phone Jenny Johnston, 898 258, or write to us at PO Box 19-011, Wellington.

The New Zealand Home Birth Association

WANTED

The Tauranga Home Birth Association requires the services of a domiciliary midwife. For more details please write to Jane Gregory, Secretary, Tauranga HBA, P.O. Box 2370, Tauranga.

(MEMBERS please note : there is no charge for these advertisements. You do need to allow up to three months for them to appear as this is a quarterly publication.)

CHILDBIRTH EDUCATION ASSOCIATION

OTAGO

* CHILDBIRTH EDUCATION ASSOCIATION OTAGO

Cea Otago has been established with the following objectives:

1. Providing a forum for the exchange of ideas and information
2. Setting up a NZ framework for the support and training of childbirth educators.
3. Acting as a resource centre.
4. Setting up workshops and seminars; co-sponsoring overseas speakers.
5. Establishing and maintaining a professional organisation to promote consistent standards of excellence and knowledge amongst childbirth educators in New Zealand.
6. Providing consumer advocacy and creating awareness of consumer rights and responsibilities.

CEA Otago publish a newsletter, annual sub \$12, send to Jenny Drew, 102 Cannington Rd, Dunedin.

* KATIE'S YUKKY PROBLEM

a story about
Bad Touching

by Lynda Morgan, illustrated by Penny Richardson, this story has been written for 6 - 12 year olds on the subject of sexual abuse. Lynda Morgan has worked extensively in both the support and education areas of sexual abuse and incest. She is currently teaching self defence to women and girls. "Aware and prepared children are not emotionally alone, a state necessary for an offender to be successful in his approach and subsequent abuse." Price \$5, and it is available from Lynda at 12 Rosewarne St, Spreydon, Christchurch, or from Papers Inc, PO Box 47-398, Ponsonby, Auckland.

Produced by the
**CAESAREAN
SUPPORT
GROUP**



Auckland

*RECOVERY AFTER CAESAREAN

An excellent booklet available from the Caesarean Support Group Inc, Auckland, for 50c a copy. It covers Physical Effects, Exercises, Breastfeeding, You and Your Baby, Going Home, Emotional Effects. Really good value - write to them at 33 Price Ave, Mt Wellington, AK.

FEAR

...editorial.

Fear is the basis for the decision most mothers make to give birth in hospital. If fear did not prevail, if instead even a small amount of research preceded their decision, most women would choose to give birth at home or in a small maternity home. Even most of the mothers termed high-risk would choose this option, since recently published research shows that they have a better chance of a live healthy baby with such care.*

But most of us never check the facts, and most of us believe that birth is safest with high-technology medical care. After all, we are often told this, by obstetricians, nurses, hospital administrators, people in positions of "authority" who "should know". These are people whose professional interests are served by the myth; prophets who profit.

We believe them because we have a system of maternity care based on medicine, not on midwifery. The medical model dictates that birth itself is not natural, that no individual birth can be judged normal until it is over, that highly trained high-technology care is necessary to ensure a live baby. The medical model encourages the mother to view both herself and the baby as dependent patients.

The midwifery model, on the other hand, comprises a belief in the normalcy of birth, the need for emotional and social support of the mother, the need for minimum intervention to ensure the best possible outcome for mother and baby. The midwifery model embodies a holistic approach to childbirth; it accepts the mother as fully responsible for her own health care.

Those of us who have been working in the prepared childbirth area for some time have increasingly seen the need to divorce birth from medicine. To return the control of birth to mothers we need midwives; midwives who have not first trained within the medical system as nurses. New Zealand needs specialist midwives, women who train in a three-year programme to graduate as independent practitioners who can care for both mother and baby during pregnancy and childbirth, who can recognise the few genuinely high-risk cases and pass these on to obstetricians.

Save The Midwives has accepted the goal of a course to train specialist midwives to be established within two years at a major centre. This makes sound economic sense for the country; at the moment we take six years to train nurse-midwives who work either in the one discipline or in the other. But more than this we need specialist midwives to ensure the very survival of midwifery, and we need midwifery to provide the skilled and supportive caregivers that are the right of every New Zealand mother and baby.

If you wish to be involved in this campaign, please be present at our next meeting on May 5.

* see Marjorie Tew's article in this issue.

Judy Larkin.

YOUR LETTERS

MIDWIFERY CONFERENCE

Dear Madam,

In September this year the Midwives Section, NZNA, will hold its Inaugural National Midwives Conference. The Conference will be held at the University of Canterbury on Friday 5th September through to Sunday 7th September.

The Conference, titled "Where there are Midwives", will attract midwives from New Zealand and Australia. At this early stage, Australasia's most prominent midwife, Miss Margaret Peters, ex-President of ICM, will be providing a keynote address. Spokespersons on Health and Womens Affairs from Political Parties have accepted invitations to attend.

We are confident that this conference will re-focus the attention on the roll Midwives have in the birth of New Zealanders. At this stage we are calling for papers for presentation from interested persons. I will forward a detailed programme in the near future, meanwhile I would be grateful if members could be informed of our conference.

Yours faithfully,
Sheilah O'Sullivan (Mrs)
Conference Convenor
473b Ilam Rd., Christchurch 5.

REFRESHER COURSES

Dear Judy,

Many thanks for the latest "Save The Midwives" - I really enjoy reading the articles especially those from overseas magazines. I should like to see organised refresher courses in the main centres for midwives like myself out of midwifery practice for some years. I attended a "Back to Nursing" course run by the Otago Hospital Board in November 84, a two week course, 9a.m. - 3p.m., with time spent on the wards and at lectures. A subsequent course was held in June and another planned this year, mainly to attract nurses who have been away from the profession bringing up families back into nursing during the current shortage, and also recognition of the fact that a refresher course is necessary for general nurses. Also each new member of staff, whether recently trained or not, attends a one week orientation course, partly lectures and partly ward work.

During my "Back to Nursing" course, we had a one-hour talk from a member of the midwifery staff. I am shortly to commence work as a part-time midwife, having just spent a year nursing. I am to do four days of orientation on day duty, and then will commence work part-time the following week, although I believe that the "buddying" system exists.

I have written to the English National Board (prior to my application to work as a midwife) about my eligibility to practise midwifery in England, and was informed that I should have to do a three month refresher course (two-month prior to Jan '85). I imagine that this would mean working in the capacity of student midwife for this period. Had I been working as a midwife in N.Z., however, they would have taken this into consideration. I wonder if you know if organised refresher courses are offered in other centres, or if you have heard from other midwives expressing the same needs as myself?

Yours sincerely,
Liz Edwards, 59 Totara St, Ravensbourne, Dunedin.
(Would any midwife who can help please write to Liz - also see Massey's course publicised in this issue.)

The Editor,
Many thanks for your copy of Save The Midwives magazine.

I found the article by G.J. Kloosterman M.D. on the Netherlands experience most interesting, and like your organisation, am concerned that midwifery is being swamped by the medical profession, both in the nursing field and in the medical practitioner field.

Please keep me informed of your concerns as I am interested in developing policy to assist in this area. I'd appreciate any advice and ideas.

Kindest regards,

Katherine O'Regan,
Associate Spokesperson on Health - Opposition
MP WAIPA

Dear Judy,

I have recently moved from Invercargill to Taumarunui. I finally obtained my N.Z. midwifery registration last year in August, and from that time I have worked in delivery suite. Coming from Holland, an enormous adjustment to New Zealand midwifery, but I am very pleased to be back in the field.

Since my case never reached the High Court, fortunately perhaps, I would like to make a small donation to Save The Midwives (\$50) and thank you all once again for your help and support.

I also have a question to ask. Since I've been working I haven't joined the NZNA and I don't feel much like doing so. However I wonder about the indemnity insurance and so I would like to ask is it really necessary to cover yourself in this way or is a hospital insured for your action anyway? I feel quite strongly about not joining the NZNA so I would really appreciate advice concerning this matter.

I remain with kind regards,
Truus Verburgt

(Dear Truus - the Nurses Society will also cover you for indemnity insurance and about 9000 N.Z. nurses have joined this as an alternative to the NZNA. They publish a very good journal, New Zealand Nursing Forum, and the annual sub. for RNs/ENs is \$35 p.a. (same for hospital students, only \$6 p.a. for comprehensive students). You can contact them at P.O. Box 3195, Auckland, 1.)

MALE MIDWIVES

Save The Midwives presently has a policy of accepting women only as midwives. Some members wish to see male midwives accepted; how do other members feel about this? We welcome letters on the subject preparatory to a vote later in the year.

SAVE THE MIDWIVES

Our Association needs a new president, chairperson, spokesperson or co-ordinator. We have a very informal and flexible association in relation to the usual hierarchical structure, so all or any of the above positions are open for nominations, volunteers or suggestions. You can even create a position to cover an area you are interested in such as Rural Midwives Co-ordinator or the like! Please let Judy Larkin know if you can assist.

I have enjoyed being president of this vibrant association since its foundation. I believe that we have had a major impact on midwifery, public opinion, hospital authorities and the government. Of course there is much more to do and I would like to see midwives take a more prominent role.

My children are all at school or kindergarten now and I want to pull out of some of my community and voluntary activities and try to get back into the law. Who knows - Save the Midwives may need a lawyer one day!

Barbara Macfarlane

suzanne arms

Suzanne was in Auckland briefly at the end of last year and talked to a group of home birth midwives and doctors. The session was taped, and here we reprint two of the issues she discussed: the rise in Caesarean sections and Midwifery in America. Other topics could be printed in following newsletters.

caesareans

Suzanne Arms.... "I'm here to learn and observe and try to get a sense of what's going on in the country by the people I visit here and in Wellington and Christchurch. I'd be very happy to share with you anything that I can about what's going on in the States right now... what would you like?... shall I give you an overview?

Why don't I start with the fact that we have a 21.1% Caesarean rate in the USA as of 1984. It is 400% or four times what it was 10 years ago. And that's 900,000 women having major surgery. I always start with that these days just because that really seems to show most graphically how serious the problem has become, but it doesn't touch the number of women who are having major interventions in birth who are not having Caesareans. Because by and large Caesareans are still an urban problem with private physicians, private obstetricians and private hospitals. The women you consider at greater risk who are greater risk because they're poor, because they've had a great number of children in a short period of time, because they are very young, whatever, are not having Caesarians at the rate that the white middle class women over the age of thirty are. But I went to Washington D.C. a couple of weeks ago and Harvard University Hospital there which is a black hospital by and large has a consistent 50 - 60% Caesarean rate. And that's not unusual in a lot of major centres, although a couple of years ago when I was travelling around what I saw was a rate of about 30% in private hospitals, that's gone up maybe to 35%, and 60-80% are epidurals and maybe 95% of the births with pitocin with sedation with some form of anaesthesia, and maybe a 90% rate of episiotomy and maybe 80% I.V.'s. So it's gotten to a state of crisis and the only people who don't seem to recognise it are women, the women who go to these hospitals and seek this kind of care.... because we have an awful lot of alternatives in the United States today, the birthing movement is fairly active and is 15 years old. We have ICEA which is the most conservative after Lamaze, we have Bradley, and ICEA has been fighting for family oriented birth for a decade now..... A couple of years ago the Caesarean Prevention Movement started. It's goal isn't just VBAC's, but prevention of all unnecessary use of technology and intervention, and the protection of normal birth and alternatives like home birth. It's a large country and it has a lot of issues going on simultaneously in birth, you've got the malpractice issue, you've got the Caesarean issue, You've got the nurse/midwife issue, the lay midwife issue, the homebirth attendant issue, the issue of family physicians who are trying to keep any privileges whatsoever for doing births and then there are physicians whom obstetricians are trying to keep out of at least all urban and suburban areas.....

midwives

Although we're training more nurse midwives in our country and fighting to get better training, there are the lay midwives who have had tremendous impact on nurse midwifery, causing the formation of a group called MANA - Midwives Association of North America.

That was a hotly debated issue in the early 70's whether the lay midwives should be permitted to sit in with nurse midwives and NOW we have a national organisation combining them. And a lot of the lay midwives of the 70's are now in nurse midwifery school, or have graduated from it. Or if they couldn't get in there they went to a physician assistant (PA) school. And they've really put pressure on the national nurse midwifery organisations to make midwifery more progressive. But they get out after training, even if they're lucky enough to have fairly little of their training in a high-risk centre, they don't see much, they don't do domiciliary work. Let's say they get out and they want to do good births - then they can't find physician back-up because so few family physicians do it, then in some states they legally have to have OB (specialist) back-up, but they can't get OB's backing them....they won't hire them and they make sure that they don't get hospital privileges. So you see, I'd say a quarter of the nurse-midwives in our country aren't even practising, and another quarter are working as hand-maidens in high risk facilities where they're carrying the large load for the doctors and getting paid low wages.

But it's not just the midwives. All the doctors who back midwives or believe in the same things, and back home births, are also disappearing. One by one. And it's not a conspiracy. It's really just the mood of the times. Very tough. And we are losing midwives - look at Santa Cruz county for example - a small county south of San Francisco where a large number of the early midwives in the 70's started practising. They have 42 midwives in that county - nurse midwives and lay midwives - and seven are doing births. Two or three of them are lay midwives, and the pressure gets to people after a while - the harassment, the legal harassment. One by one their friends getting called in, not being able to get hospital privileges, not being able to go with their clients to the hospital, if you are a lay midwife you can't do these things. And you find nurse midwifery practices of even women who started out as lay midwives preferring not to take first-time mothers as home birth clients. There are a whole lot of them now who say that first-time mothers ruin their statistics. There are midwives who simply will not take them. They don't want to labour-sit for a long labour, because we have long labours in America as you can imagine. It's not uncommon to have four hours pushing. We have a lot fewer normal births in our background than you do. A lot of OUR mothers came out of Scopolamine and Demerol and having their babies by induction and general anaesthesia - that was in the 40's, the 50's, the 60's. It's really caught on in the United States that you can't do anything by yourself, that you're not competent, that you must have medical help. You see people going into the emergency rooms with colds and small fevers - they're just less likely to feel comfortable taking care of anything at home.

vbacs

We probably have only 20% of women having vaginal births after caesarean. And you'd say probably 90% should have successful vaginal births - right? And we have a few physicians around the country for whom that is true, and they raise the statistics to 20%. Many hospitals simply will not give a woman a trial of labour, and if they do she must progress a centimeter an hour. So there's a lot of pressure and you see women going all over the States to get a better experience but very few of them. Most women are just lying down and taking it. But you do see women having home births after a caesarean - a hefty minority, but they are doing it. And there's no doubt that I'm going to write about it.

INTERVIEW: Marjorie Tew

Marjorie Tew is a Research Statistician in the Department of Orthopaedic Surgery at Nottingham Medical School in England. While teaching epidemiology to medical students in the 1970s she noticed that the published statistics did not appear to support the popular belief that birth is safest in obstetric hospitals. Since then she has had a series of papers published (see page 15), lectured throughout Great Britain and been appointed to the Committee of the Royal Society of Medicine's Forum on Maternity and the Newborn. She has no personal or professional interest to advance, either as a provider or consumer of maternity care. Ms Tew will be touring Australia this May and June at the invitation of members of Homebirth Tasmania (see page 19 for details).

HILDA: What conclusions have you reached as a result of your extensive research into home and hospital birth?

MARJORIE: After careful study of all the records accessible to me, I have found that perinatal mortality rates (PNMRs) are much lower when deliveries take place at home under the care of trained midwives than when they take place under obstetric management in specialist hospitals. This disparity is not accounted for when every possible allowance is made for the fact that hospital births include considerably more at high predicted risk. This is not to deny that there are specific cases of pathology where obstetric intervention makes birth safer, but these must be very few - too few to be distinguished in any of the usual, recognised sub-groups of high risk. Nor have the pathological conditions been the subject of trials to compare the safety of different treatments.

Planned, cared for deliveries at home are not the same as unplanned, uncared for deliveries at home. These are at much higher risk for various reasons, most of which would make the birth high risk in any setting.

HILDA: We are often told that only low risk women should give birth at home - and that risk status can only be determined after the birth. Do your research findings support these claims?

MARJORIE: Some risks of childbirth are known before labour and predispose to later complications; some occur during labour and are caused by complications developing naturally from foreseen and unforeseen conditions or by complications arising from intranatal care. Of these the antenatal factors are the least important. Complications in labour are found to occur much less frequently under supportive midwifery than under interventive obstetrics.

The dictum that 'No birth is safe until it is over' applies wherever the birth takes place, and overall the chances of safety are greater without intervention, which is much more likely to be avoided at home.

HILDA: Obstetricians seem to have a great deal of faith in the value of their increasingly sophisticated technology. Has the introduction of such devices as electronic foetal heart monitors and ultrasound resulted in better outcomes for mothers or their babies?

MARJORIE: The evaluative studies of EFM so far undertaken have not shown that it significantly improves perinatal mortality, but it does increase the Caesarean section rate following false alarms. There is some evidence that it creates the foetal distress it sets out to detect. Ultrasound is probably the most reliable means of detecting foetal abnormalities for which termination might be desired. I know of no evaluative studies demonstrating that it improves perinatal outcome in other respects. Its long term safety is still unproven.

HILDA: Do you think it is possible to convince the majority of obstetricians that homebirth is a safe alternative for most women?

MARJORIE: It is understandably very difficult to convince people that what they have become accustomed to believe is not supported by evidence. It is even difficult to persuade them to carry out their own fair trials and believe their own findings. Some obstetricians are open-minded, but organised bodies are more set on defending the empires they have quite recently won than on investigating whether their empires are justified.

"Perinatal mortality is significantly higher in consultant obstetric hospitals than in G.P. maternity units or at home, EVEN AFTER allowance has been made for the greater proportion of births in hospital at high pre-delivery risk."

Place of birth and perinatal mortality

MARJORIE TEW, MA

Research Statistician, Department of Orthopaedic Surgery, Nottingham Medical School

SUMMARY. Analyses of the published results of national surveys and specific studies, as well as of the official stillbirth statistics, consistently point to the conclusion that perinatal mortality is significantly higher in consultant obstetric hospitals than in general practitioner maternity units or at home, even after allowance has been made for the greater proportion of births in hospital at high pre-delivery risk. Unpublished results of the British births 1970 survey, which have now become available, make possible a direct and authoritative analysis of data on the safest place of birth. Not only does this make the earlier conclusion more certain, but it confounds the doctrine that obstetric intranatal care is particularly beneficial for high pre-delivery risk births. There is no evidence from recent years that the findings of 1970 are not equally valid in the 1980s.

Introduction

The safe birth of an infant depends on many factors: biological and social characteristics known at the start of pregnancy; medical conditions which develop during pregnancy and how they are treated; medical conditions at the time of delivery and how labour is managed, and neonatal care. Information has been gathered from many sources, notably from the national perinatal surveys of 1958^{1,2} and 1970.^{3,4} to which obstetricians made a major contribution and which has quantified reliably the association of outcome with the most relevant maternal characteristics and complications of pregnancy and also with infant birthweight and gestational age. The association between outcome and medical care, either antenatal⁵ or intranatal, is less well-established. Yet the organization of the maternity service has been based on the assumption that obstetric interventions, particularly in the intranatal period, are beneficial, and that their advantages at least outweigh any possible disadvantages when they are used. This has culminated in the near total hospitalization of births.

Although the 1958 survey was designed 'to provide information of value upon a number of aspects relating to the safety and health of mother and infant, including the possible effects of place of confinement',¹ the data were not in fact analysed to achieve this last objective. This omission was the more regrettable since the crude perinatal mortality rate per 1000 births was found to be 2.5 times as high in consultant hospitals (where 49% of births took place) as in general practitioner units (12% of births) or at home (36% of births) and analyses of the limited data published show that this disparity cannot be explained by a greater number of high pre-delivery risk births in hospitals, arising from selection and transfer policies. Nor can it be explained by an excess of births of low weight or short gestation in hospitals.⁶⁻⁸ Thus the results of the 1958 survey did not justify the assumption that delivery in hospital, under obstetric management, is on balance advantageous.

Nevertheless, by the time of the 1970 survey the proportion of births taking place in consultant hospitals had increased by

one-third to 66%, but the disparity between the perinatal mortality rate there and in general practitioner units or at home had doubled to become fivefold: the perinatal mortality rate in hospital was 27.8 per 1000 against 9.5 for general practitioner beds in consultant units, 5.4 in general practitioner units and 4.3 at home.³ This disparity was not discussed in the report, though the seriousness of a similar disparity between the perinatal mortality rates for births in social class I and unsupported mothers was stressed. Evidence was not presented which might have shown that the excess perinatal mortality rate in hospital was due to greater numbers of high-risk births.⁴

Analysis by intended place of delivery

It is often argued that perinatal mortality rates by place of delivery could only be used to assess the relative safety of intranatal care at each place if they were the results of a randomized controlled trial. Results of such a trial are reliable indicators of the relative safety of treatment only if all or nearly all subjects in each group actually have the type of care to which they have been allocated. A considerable proportion of births originally booked on a non-random basis for delivery in a general practitioner unit or at home are transferred to hospital usually because of diagnosed complications, while some births originally booked for delivery in hospital take place before arrival there.

At no time in the past have deliveries been randomly allocated to different places of birth and there are persuasive reasons, both practical and theoretical,^{9,10} why it would not now be possible to do so. Nevertheless, it is argued that the correct method of dealing with results is to mimic the randomized controlled trial and analyse by intended, not actual, place of delivery. Thus it is hoped to avoid the problem of the transfers, for which the perinatal mortality rate is found to be higher than for births booked for hospital and much higher than for births booked for general practitioner units or home.

The method would be appropriate if the objective were to compare the total risk of booking for hospital with the total risk of booking for general practitioner unit or home, including the risk of transfer, taking the risks attendant on the different methods of intranatal care at each place as given. But it is not appropriate if the objective is the much more fundamental one of comparing the results of actual care by the different methods. To compare perinatal mortality rates by place of booking is to compare intranatal care in hospital with a mixture of intranatal care — some in hospital (the transfers) and some in general practitioner units and home. Since, however, the perinatal mortality rate by place of booking was found in both the 1958 and 1970 surveys to be still significantly higher in hospital,^{1,11} this technique of analysis reinforces the inference from comparing the crude perinatal mortality rates — that intranatal care must be less safe in hospital, unless a sufficiently large excess of high-risk births were originally booked for hospital. Detailed data from the 1970 survey can be analysed to show that this condition was not fulfilled.

The excess of high risk births in hospital and its effect

The number of actual births at each place of delivery was published for each sub-group of the risk factors — maternal age and parity — and hospital births were found to include a rather greater proportion in the higher grades of risk. The reasons why the births took place where they did cannot be determined. Though the number of associated deaths was not published, the data are sufficient to calculate whether each place

with thanks to *Journal of the Royal College of General Practitioners*, August 1985

sent in by Sue Lennox

Table 1. Perinatal mortality rates per 1000 births, crude and standardized for risk factors.¹

Risk factor	Hospital	GP unit and home ^a
Crude	27.8	5.4
Standardized for:		
age	27.5	5.7
parity	27.3	5.6
hypertension/toxaemia	27.6	5.5
antenatal prediction score	26.3	6.0
labour prediction score	24.0	8.4
method of delivery	25.8	6.8
birthweight	22.7	10.5

Source: *British births 1970* (volume 1, table 2.19 and volume 2, tables 2.25, 2.31, 4.17, 5.7, 5.8, 5.9, 5.11) and unpublished data.

^a The method of standardization is described in Appendix 1.

^b Includes general practitioner beds in consultant hospitals.

would have had more (or fewer) total deaths if the births in each of their sub-groups of risk had had the same specific perinatal mortality rate as the average for all places. The calculation is worked out for parity in Appendix 1 and shows that hospitals actually had more deaths than expected and general practitioner unit and home deliveries had fewer. When these ratios are applied to the overall average perinatal mortality rate, the adjusted or standardized perinatal mortality rates are obtained for each place (Table 1). The hospitals' excess of births at high risk accounted for only a small part of their excess overall perinatal mortality rate. Nor is the higher mortality rate explained by the greater proportion of births in hospital in the higher risk grades of hypertension/toxaemia, the only other single risk factor for which the data were published (Table 1).

To measure the combined effect of several risk factors known in time to influence booking or early transfer, an antenatal prediction score was constructed (Table 2). A score was calculated for every birth in the survey — the higher the score, the greater the risk. Hospital births were found to include a greater proportion of moderate- and high-risk cases, but standardizing the perinatal mortality rates as before shows that this excess explained little more of the disparity between the crude perinatal mortality rates than did the excess of risk on account of single factors (Table 1). This is because, as all enquiries have estab-

Table 2. Antenatal prediction score: weights given to risk factors.

Factor	Risk		
	Low	Moderate	High
Maternal:			
age	0	1	2
parity	0	1	2
social class	0	1	2
Previous:			
stillbirth			4
neonatal death			4
abortion			4
Caesarian section			4
Hypertension			4
Diabetes			4

Source: *British births 1970* (volume 2).

lished, the factors are to a greater or lesser extent interdependent, so that allowing for the risk from one allows for much of the risk from others.

The survey's analysts went further and constructed a labour prediction score, adding to the antenatal prediction score the conditions occurring during pregnancy and early labour which are 'known to affect perinatal mortality and morbidity adversely and so may influence the management of labour' (Table 3). Thus the labour prediction score represents a comprehensive measurement of pre-delivery risk. Details by place of confinement were not published in the report,⁴ but following a private request this material was made available (Golding J, personal communication). Once again, hospital births are found to include a greater proportion of moderate- and high-risk cases, but after standardizing, the gap between the perinatal mortality rates, though reduced, remains wide (Table 1).

The published data enabled the perinatal mortality rates to be standardized in respect of two other variables — method of delivery and infant birthweight. Spontaneous cephalic deliveries, at lowest risk, make up 79% of hospital births as against 97% in general practitioner units and home. Even if the bias towards assisted deliveries had been necessitated entirely by the pre-delivery risk status of the hospital births and was not the result of active management, it accounted, like the other risk factors, for only a small part of the excess perinatal mortality rate in

Table 3. Labour prediction score for singletons: weights given to risk factors.

Factor	Risk		
	Low	Moderate	High
Antenatal prediction score	0	1	2
Previous Caesarean section			4
Hypertension/toxaemia	0	1	2
Antepartum haemorrhage			2
Duration of pregnancy	0	1	2
Duration of first stage	0	1	2
Fetal distress	0	1	2 or 4
Breech presentation			4

Source: *British births 1970* (volume 2).

hospitals. Hospital births included a greater proportion of low-weight babies. One contribution to the bias was almost certainly the use of induction, for 28% of all births in hospital were induced; but even if this bias was not the result of active management but was entirely due to natural causes, their predicted excess of low-weight births would not have explained most of the hospitals' excess perinatal mortality rate (Table 1).

It would of course be arithmetically impossible for standardization — allowing for the excess proportion in hospital of births at higher risk — to eliminate or reverse the excess crude perinatal mortality rate in hospitals, unless the perinatal mortality rates at specific levels of risk were always or usually lower in hospital. In the 1958 survey this never happened, whether the perinatal mortality rates relate to place of delivery or to place of booking. In the 1970 survey perinatal mortality rates at specific levels of risk were published for only one risk factor — hypertension/toxaemia. These showed that at every level the perinatal mortality rate was highest in hospital. It is virtually certain that the same was true for sub-groups of other factors, given the overall results. The recently released data, summarized in Table 4, confirm that it was true for every labour prediction score.

Table 4. Births and perinatal mortality rates (PNMRs) by labour prediction score (LPS) and place of delivery.

Level of risk	LPS	All births		Percentage at each score		PNMR per 1000 births	
		Number	(%)	Hospital	GP unit and home ^a	Hospital	GP unit and home ^a
Very low	0-1	7488	45.9	58.7	41.3	8.0	3.9*
Low	2	3723	22.3	68.9	31.2	17.9	5.2**
Moderate	3	2273	13.9	76.6	23.4	32.2	3.8***
High	4-6	2417	14.8	84.0	16.0	53.2	15.5**
Very high	7-12	427	2.6	96.5	3.5	162.6	133.3

* $P < 0.05$; ** $P < 0.005$; *** $P < 0.001$. Source: *British births 1970* unpublished survey data. ^aIncludes general practitioner beds in consultant hospitals.

Using the new material to estimate perinatal mortality rates for comparable risk groups

Specific perinatal mortality rates by labour prediction score provide by far the most direct, informative and practicable instrument for analysing data on the safest place of birth. The labour prediction score covers many kinds of risks; the procedure of allocating scores to births is completely unbiased. It does not matter whether or not the births in hospital with any specific score came to be there as a result of the selective booking or transfers policies. They represent births which at the time of delivery were at a measured degree of risk, from very low to very high, equivalent to the degree of risk of births with the same score, made up by the same factors, which took place in general practitioner units or home. It becomes possible to compare like with like and measure the relative safety of different methods of care applied to deliveries at the same level of risk.

The results are disturbing; they confirm that, as intended, the proportion of births in hospital increased as the labour prediction score increased, the overall score being 'the ultimate indicator of the type of care a mother should receive'.⁴ But they cast doubt on the wisdom of that policy. For though the perinatal mortality rate in hospital was twice as high as in general practitioner units and home for births at very low risk, the margin was much wider at low, moderate and high risk. Only in the small group at very high risk was the perinatal mortality rate in hospital not significantly higher than in general practitioner units and home, where there were only 15 births. The perinatal mortality rate for high-risk births in general practitioner units and home (15.5 per 1000) was slightly lower than for low-risk births in hospital (17.9 per 1000). It is important to note that the perinatal mortality rates in general practitioner units and home were hardly different for births at very low, low and moderate risk, which suggests that the methods of intranatal care there succeed in overcoming a range of predicted risks. In contrast, the perinatal mortality rate in hospital multiplied as the labour prediction score increased, which suggests that the methods of intranatal care used in hospital intensify the risks.

The pathological states where obstetric intervention is lifesaving were outnumbered by states where it is not. Problems can certainly occur in general practitioner units and home, where the level of intervention is low, but they must occur more frequently in hospital where intervention is regular practice, otherwise the statistical results would be the reverse of what they are. Unless some other factor can be found to explain these results from the obstetricians' own analysis of survey data, they must be interpreted as meaning that most infants do not benefit from active obstetric management and most of those already at higher risk benefit least.

What could the other factor be? It has been suggested that hospital deliveries include an excess of cases where the fetus is already dead or moribund following transfers from general prac-

titioner units or home. But this factor could not account for the excess perinatal mortality rate in hospitals, for their mortality rate for live births was by itself more than twice the perinatal mortality rate for all births, live and still, in general practitioner units and home. In 1970 the proportion of stillbirths owing to congenital malformation was only 3% greater in hospital than in general practitioner units and home, so this factor would explain hardly any of the excess perinatal mortality rate.¹²

Also unlikely is the suggestion that a greater number of hospital births are at high risk on account of factors additional to those included in the labour prediction score but totally independent of them, as they have to be if they were to account for the disparities in the perinatal mortality rate unexplained by the labour-prediction score. There may well be risk factors as yet unidentified and unquantified; for example, the paternal contribution. But, precisely because they are unidentified, there can be no evidence that these factors exist in excess among hospital births. Doctors would be unlikely to direct low-risk pregnancies to hospital because their clinical judgement foresaw danger from some other factor not recognized as being associated with high risk. Yet such unrecognized factors would have to be sufficiently powerful and prevalent in such excess among hospital births that they would account for twice as much of the total disparity in perinatal mortality rates as was accounted for by all the factors in the labour prediction score. The hypothesis does not stand close examination.

Breathing difficulties

Perinatal outcome was also measured in relation to breathing difficulties which were more often suffered by, and proved fatal to, infants born in hospital, despite the fact that a much greater proportion of them were transferred to special care baby units (Table 5).^{1,13} Rates of respiratory depression and mortality were found to be higher when the various interventions included in

Table 5. Infants with breathing difficulties.

	Hospital	GP unit and home ^a
Live births (actual)	10 965	5170
Infants with breathing difficulties per 100 live births	9.3	3.3***
Deaths associated with breathing difficulties per 1000 live births	9.4	1.9***
Transfers to SCBUs per 100 infants with breathing difficulties surviving after six hours	62.0	26.2***

*** $P < 0.001$. Source: *British births 1970* (volume 1, tables 2.19, 6.21, 6.24, and page 179). ^aIncludes general practitioner beds in consultant hospitals. SCBU = Special care baby unit.

active management were used than when they were not. It has to be remembered that these intervention methods had not been systematically evaluated before their practice became widespread to confirm that they were of benefit in the circumstances where they were actually being used. No evidence was offered in the survey report to support the claim that intervention was only resorted to in order to avert a worse outcome: indeed half the inductions were carried out in births at low predicted risk. That they failed to avert a worse outcome is witnessed by the fact that cases with the same labour prediction score which were treated by the low intervention methods of general practitioner units and home suffered much lower mortality.

More recent experience

Thus the result of the 1970 survey, far from verifying the assumption that delivery in hospital under active obstetric management is beneficial, contradicted this. The national surveys of 1958 and 1970 covered large random samples of the births in these years. There has since been no comparable large-scale study by which obstetric practice after 1970 might be evaluated. However, the conclusions from the earlier surveys are confirmed in the results of smaller studies using data of the later 1970s where outcome following spontaneous delivery is favourable compared with outcome following specific interventions in populations carefully matched for pre-delivery risk.¹⁴⁻¹⁶ Similar findings from 1981 data are also reported from Holland.¹⁷ Until 1981, the last year for which official data for England and Wales have been published,¹⁸ the stillbirth rates for all births and at specific levels of the risk factors maternal age and parity, continued to be, as before, significantly higher in hospital than in general practitioner units and home combined.

Since 1970 the proportion of births in hospital, and hence subject to active obstetric management, has continued to increase, while the national perinatal mortality rate has continued to fall. But the years when the proportional increases in hospitalization were greatest were the years when the proportional decreases in the perinatal mortality rate were least, and vice versa. Analysis of the official data for 1969-81, the period when they are available, confirms that the correlation between the trends is significantly negative, which implies that if hospitalization had increased less the perinatal mortality rate would have decreased more. There is, therefore, no reason to suppose that the relationships between obstetric interventions and outcome, discovered in the 1970 survey, no longer obtain.

Also since 1970 there have been many changes in obstetric practice. New types of intervention, for example, ultrasound scanning, electronic fetal monitoring and epidural anaesthesia, have been introduced and have become widely used, often without prior evaluation of their benefit in the relevant circumstances. The use of interventions like Caesarian section has increased, likewise without evaluation, but since 1978 the use of induction and forceps has decreased, allegedly in response to the research findings of the present author.¹⁹ Formerly unquestioned rules of management, such as the position for delivery, have been relaxed, probably in response to consumer pressure.

The National Birthday Trust Fund, working through obstetricians and others concerned, forfeited the opportunity to evaluate the elements of contemporary obstetric practice when it carried out another survey in 1984, this time concentrating only on enumerating the facilities — manpower, equipment and services — at each place of birth but not linking these facilities

with perinatal outcome.²⁰ Therefore it cannot be established whether or not these facilities are advantageous. Based on previous evidence, which has not yet been contradicted, the use of at least some of them must certainly have been disadvantageous. There is now a danger that the results of the survey will be used as justification for further concentrating births in the places which have the most facilities, almost certainly large obstetric hospitals, instead of allowing births to take place in general practitioner units or with normal care at home, where they can be shown to be safer but where the provision of facilities is modest.

Appendix 1. To show how perinatal mortality rates (PNMRs) are standardized to allow for different proportions of births in each place, when the specific PNMRs in each place are not known — the indirect method of standardization — using data from the *British births 1970* survey (volume 2, table 5.9). The parity-specific PNMRs for the survey population and the number of births in each parity group at each place are known.

Parity	Survey PNMRs (per 1000)	Hospital		GP unit and home	
		No. of births	No. of expected deaths	No. of births	No. of expected deaths
A	B	C	$\frac{B \times C}{1000}$	D	$\frac{B \times D}{1000}$
0	21.3	4249	90.5	1325	28.2
1	18.0	3018	54.3	1966	35.4
2	21.7	1663	36.1	1070	23.2
3	19.1	922	17.6	541	10.3
4 plus	34.1	1304	44.5	284	9.7
All parities	21.4		243.0		106.8
			Actual deaths 310		Actual deaths 28
Standardized PNMR (per 1000):					
survey PNMR x actual deaths					
expected deaths					
			$21.4 \times \frac{310}{243.0}$		$21.4 \times \frac{28}{106.8}$
			= 27.3		= 5.6

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ASSOCIATION OF RADICAL MIDWIVES

[illegible]

T.E.N.S. **TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION.**

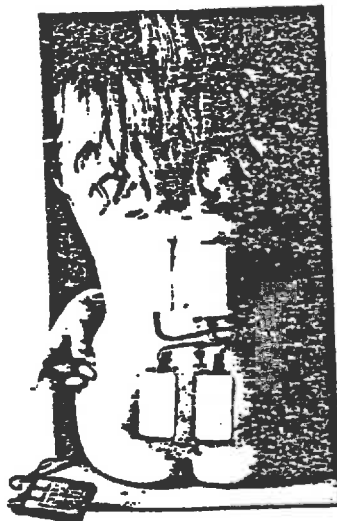
TENS IS THE APPLICATION OF PULSED ELECTRICAL CURRENT THROUGH SURFACE ELECTRODES PLACED ON THE SKIN FOR THE RELIEF OF BOTH ACUTE AND CHRONIC PAIN. IT IS NOT TOTALLY UNDERSTOOD HOW IT WORKS, BUT THE TWO MAIN THEORIES ARE; 1. GATE CONTROL THEORY. (STIMULATION OF LARGE NERVE FIBRES.

1. GATE CONTROL MECHANISM.
2. VIA THE RELEASE OF ENDOGENOUS OPIATES OR ENDORPHINS INTO SPECIFIC AREAS OF THE CENTRAL NERVOUS SYSTEM.

BOTH THESE PHYSIOLOGICAL ACTIONS ATTENUATE THE PERCEPTION OF PAIN AND PROVIDE A FIRM SCIENTIFIC BASIS FOR THE TECHNIQUE.

THE ELECTRICAL STIMULATION IS GIVEN BY USING A SMALL MACHINE ABOUT THE SIZE OF A SOAP BOX. FOUR FINE WIRES LEAD TO THE ELECTRODES WHICH ARE KEPT IN PLACE WITH ADHESIVE TAPE. THERE IS A PULSAR DESIGNED FOR OBSTETRIC USE THAT HAS A 'BOOST BUTTON' WHICH IS OPERATED BY THE WOMAN HERSELF. THE PLACEMENT OF THE ELECTRODES IS FAIRLY CRITICAL, THE CLASSICAL ACUPUNCTURE SITES ARE USED. (THORACIC 10, LUMBAR 1, DORSAL ROOT OR SACRAL 2, SACRAL PLEXUS, OR, OVER THE SITE OF PAIN ON THE BACK.) WITH THE 'OBSTETRIC PULSAR' IT IS RECOMMENDED TO USE LOW FREQUENCY STIMULATION, BETWEEN 2-SHZ AND WITH CONTRACTIONS THE WOMAN USES THE 'BOOST BUTTON' TO INCREASE THE INTENSITY BY 10% TO 20%. IF ADEQUATE PAIN RELIEF IS NOT OBTAINED THEN THE ELECTRODES SHOULD BE MOVED. THE WOMAN COULD BE INSTRUCTED IN THE USE OF TENS DURING PREGNANCY, IT SHOULD BE COMMENCED FAIRLY EARLY IN LABOUR.

TENS WAS ONE DRAWBACK IN THAT IT INTERFERES WITH FOETAL MONITORS, ALTHOUGH SOME WOULD SAY THAT IS AN ADVANTAGE! IT CAN ALSO BE USED FOR PERINEAL HEALING, AND PROMOTING THE HEALING OF CAESARIAN SECTION SCARS. THE ELECTRODES CAN BE STERILIZED IN A STERILIZING SOLUTION. THE MACHINES COST BETWEEN £35-£200 (\$100-500) AND SOUND LIKE A VERY INTERESTING NON-INVASIVE METHOD OF PAIN RELIEF.



WRITTEN
BY
VERONIKA
MULLER

MIDWIFERY EDUCATION FOR THE FUTURE

Education of the individual midwife is vital not only for that individual midwife's continuing development but also for the development of the midwifery profession and because clinical standards are only as good as the education given to prepare us to give care.

I would like to consider first who we educate:

1. Parents - At one time the family and society was seen as the main source of expertise in child-bearing and child rearing. However, the caring professions have now assumed this role for themselves to the extent that O'Driscoll states "the purpose of antenatal education is to define a woman's role in labour and teach how to fulfil it".

If we are experts, how well are we performing? A recent survey showed 80% of mothers had not had prenatcraft discussions on why babies cry (yet any mother will tell us how important this is to her). Furthermore, 40% of medical advisers do not take the problem seriously.

We should identify what parents think they need, rather than what we think they need.

2. Society in General - At times I feel that people do not know that midwives exist. In media publicity we are constantly referred to as 'nurse'. Every midwife should take time and effort to identify herself on every occasion possible. If a mother and her family do not know who and where we are, how can they use our services?

3. Medical and other Health Professionals - Can we say that other professions understand our role when nurses apply to train as midwives because 'it will make me a better nurse' and O'Driscoll can state "a consultant obstetrician should be at pains to show personal concern for all women in labour..... he should be

aware of the potential to boost morale generally by frequent appearances in 'the labour ward'".

4. Ourselves - This includes clinical midwives, midwifery managers, midwifery tutors and midwifery students. Why is education so important to us? It is because families need a body of people i.e. a profession acting with the interests of the woman and her family in mind at all times. In other words "with woman".

What should be included in our education?

Firstly, we should consider the elements usually attributed to a profession and bear in mind these attributes at all times. Secondly, research - this is a critical evaluation of care or technique. How much of our care is based on fact found by critical evaluation and how much "gut feeling".

To give two examples: Why do we undertake routine daily post-natal observations? Have they proved effective in predicting or defining secondary post-partum haemorrhage or deep vein thrombosis? Furthermore, what is the value of the postnatal stay in hospital? Do we send women home feeling rested or would they obtain more rest being discharged home earlier?

If we do research will our profession accept these findings? Research is often unacceptable because of the feelings of insecurity it generates. This leads me to the next topic which should be included in the education of midwives.

Psychology - A study of the mind.

Three decades ago the majority of midwifery care was in the home - the psychology and sociological of normal interpersonal relationships was all around. Now a great deal of



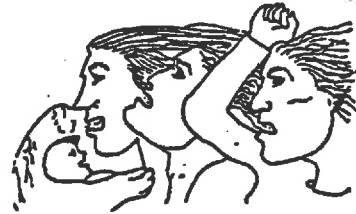
care is in hospital and most midwives have first trained as nurses. These factors predispose to the 'illness and patient emphasis in care'. In this situation interpersonal and interprofessional relationships are greatly altered, increasing the need to teach them formally. At present the basic midwifery training curriculum states "Psychology - emotional and behavioural adaptation to labour parenthood and the family unit". This should give midwifery schools a carte blanche to include what they consider necessary. However, many midwife teachers, including myself did not have social psychology in their teacher training and may need updating in certain topics, for example: Attitude - how they are formed, reinforced and changed. Knowledge of these would help us understand why we react as we do to groups such as the National Childbirth Trust, the Association of Radical Midwives and to those of our clients who do not conform.

Groups - how they are formed, what effects their members behavior, how we react to members of a group who are different. For example, a member of staff who presses for open visiting in a hospital with fixed visiting hours.

Communications - what is the result of ineffective communication? This should include aspects of counselling. Unpublished research by Nicholson has shown evidence that midwives shy from social interaction with those in their care and prefer the task orientated aspects of their role.

Perception - how we see and make sense of our world. What happens when perception is impaired or when things do not conform to our preconceived ideas.

Personality - how this effects behavior and interpersonal relationships. Why we are or are not able to assert ourselves as individuals and as a profession. There is a need also for assertiveness training.



The fourth aspect which should be included in midwifery education is:

Sociology - the study of development of nature and human society.

At present the curriculum states "family patterns, class and ethnic variations". Society has changed and will continue to do so. There is a need to broaden the curriculum to include: The role of women in society - its influence on her job prospects, income and patterns of child-bearing and child rearing. The effect of unemployment and poverty on the family unit.

Factors effecting the uptake and acceptance of benefits - DHSS figures show that in 1979 £410m of benefits were unclaimed and half of those entitled to single parent benefits do not claim them. Politics - this means to be concerned with the affairs of life not necessarily party politics. The midwife cannot help but become involved with the politics of health care and should be educated to do so. Professionally our voice has not been loud on topics such as inequality in health care, pollution of the environments with teratogens to give two examples.

The fifth aspect is:

Philosophy - a state of the principles of human conduct

The World Health Organisation Alma Ata Declaration states "the people have a right and duty to participate in the planning and implementation of their own health care".

So often the opinions, recollections and accounts given by women are totally ignored. Ignoring basic needs and rights of mothers and their families often leads to confusion and conflict and may result in refusal of the type of care we offer.

If I can move on, to WHERE DO WE EDUCATE?

The present system of education has been satisfactory in many ways but grossly inadequate in others. For example, many midwifery schools have as few as 2-300 books in their library and subscribe to only 4 or 5 journals. The services of librarians and audio visual technicians are unavailable. Tutors spend many hours on these duties. Economies may be made by employing unqualified tutors even where qualified tutors are available and in-service education for tutors to update them on teaching methods has been poor. There is at this time considerable pressure to change our educational system and we appear to have three options open for the future:

1. Forming Colleges of Nursing and Midwifery
2. Colleges of Midwifery based in Higher Education establishments
3. Regional Colleges of Midwifery covering geographical areas with links with universities and Colleges of Higher Education.

Each of these options has advantages. I hope that the ultimate decision is that which is best for the profession, mothers and babies, rather than for political reasons or to meet the needs of other disciplines.

I have two final points to make:

How do we educate?

There is a need to evaluate existing education. Are our refresher courses and the Advanced Diploma in Midwifery meeting the needs of the profession? Our courses need to be validated so that their standard is recognised by all who look at them.

Lastly, how do we know the education is effective?

Is our examination system as it should be? We do not have a defined panel of examiners holding regular meetings, nor do we have a defined marking system to

ensure marking is fair, nor do examiners attend preparation for examiners tailored to our professions needs.

The midwifery examination should be conducted by midwives only and not by other disciplines.

Finally, to ensure that education is effective we should monitor standards of care which brings me back to my original point:

"Clinical standards are only as good as the education given to prepare one to give care".



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If you haven't had a chance yet to read Rosenblatt's important research, read this paper submitted to the LANCET.

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IS OBSTETRICS SAFE IN SMALL HOSPITALS?

Evidence from New Zealand's Regionalised Perinatal System

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Summary Perinatal mortality rates were determined for all public maternity hospitals in New Zealand for the years 1978-1981. Level 1 maternity hospitals—mostly small rural units staffed by general practitioners and midwives—had lower birth-weight-specific perinatal mortality rates in all but the lowest birth-weight categories than the better equipped hospitals to which they refer. This probably reflects the cautious antenatal practices of general practitioners, and the effective regionalisation of perinatal services in New Zealand. It is also possible that there is an advantage, particularly for normal birth-weight children, in being born in smaller obstetric units. There is no evidence that a satisfactory outcome depends on a minimum number of deliveries.

INTRODUCTION

WHERE should babies be born, and who should deliver them? Obstetric practice has changed considerably in the last decade, pulled by two powerful but at times opposing forces. Major advances in the ability to detect and intervene in cases of high-risk pregnancy have increased the complexity and the technology of obstetric care. Meanwhile, public and professional demands for less intervention in normal pregnancy have made it more difficult to reconcile optimum medical outcome with less intrusive obstetric practice. While it is clear that sick neonates and women with complicated pregnancies are best cared for in large and well-equipped medical centres, the degree of training or experience needed to practise normal obstetrics is unknown.

Regionalisation has been recommended as the most effective strategy for improving quality of care in volume-sensitive conditions,^{1,2} and has been widely used to provide obstetric and perinatal services.³⁻⁷ Regionalisation is not an unmixed blessing, however, because it tends to increase the size and complexity of referral hospitals and may diminish access to care for some people, particularly those in remote or rural areas.^{8,9} In many countries, including New Zealand, small maternity hospitals are being closed, partly because of fears that the quality of care may be inferior in small hospitals (the economic efficiency of smaller units is another factor). Nevertheless, the relation between volume and outcome of care in a regionalised perinatal system has not been investigated adequately. Is there a volume threshold below which obstetric care becomes unduly hazardous for patients?

Background

Obstetric care in New Zealand is largely financed by central government. In 1983 there were over 100 public maternity units throughout the country, administered by 29 publicly elected hospital boards. Virtually all deliveries occur in such units, with general practitioners and specialist obstetricians

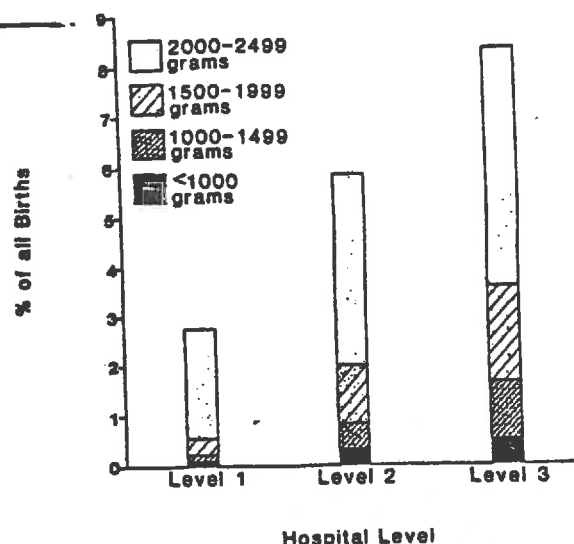


Fig 1—Distribution of low-weight births by hospital level.

delivering about the same number of babies. All women have access to free maternity care. Regionalisation of obstetric services began in the 1970s, and by 1980 most maternity units were part of a formal regionalised perinatal care system.¹⁰⁻¹² Partly as a result of regionalisation, 33 rural maternity units were closed between 1970 and 1984; most of these units were the only hospitals in the rural communities that they served. Our study was designed to assess whether the low volume of deliveries in the many remaining small hospitals affects perinatal mortality, in the context of a regionalised system of care.

METHODS

Data were obtained from the National Health Statistics Centre of New Zealand, which maintains a computerised register of all births and perinatal deaths, including location of each birth and death, place of residence of the parents, and the birth-weight of all liveborn infants. In addition, government publications give detailed annual information on all maternity units within New Zealand, and on the socio-demographic characteristics of the counties in which they are located.¹³⁻¹⁶ These data were collected and merged for the years 1978-1981, inclusive.

Following Department of Health guidelines, maternity units functioning during the period of this study were assigned to three mutually exclusive levels of care. Five hospitals were classed as level 3, or tertiary care units for both obstetric and perinatal care. Nineteen hospitals were designated as level 2, reflecting their sub-regional referral role for complicated obstetric and neonatal care not requiring the more specialised equipment and personnel available in the five regional centres. Eighty-nine maternity units were designated as level 1; in general these are much smaller units, usually in rural settings, where virtually all deliveries are carried out by general practitioners working with midwives.

Maternal residence, hospital of birth, and hospital of death were determined for each perinatal death, defined as stillbirths (>28 weeks' gestation) or early neonatal deaths (<7 days of age). The country was then divided into non-overlapping maternity catchment areas, with the centre of each catchment area being the closest maternity hospital. The extent of regionalisation was assessed by determining what proportion of mothers served by level 1 facilities delivered their children in level 2 or level 3 hospitals, and by focusing in detail on the 1% of all pregnancies that ended in a perinatal death. The crude perinatal mortality rate for each hospital was calculated, together with birth-weight-specific perinatal

with thanks to the "Lancet", August 24, 1985

mortality rates (in 500 g birth-weight increments) according to designated hospital level and volume of deliveries.

RESULTS

Extent of Regionalisation

During the period 1978–1981, there were 206 054 total births, 1388 late fetal deaths, and 1084 early neonatal deaths, yielding a perinatal mortality rate of 12.0/1000 total births. Perinatal mortality rate diminished from 13.0 in 1978 to 10.5 in 1981, continuing a trend that began in the 1930s.

About 40% of all births were to mothers who were served by a level 1 maternity hospital, but only 28.5% of all public hospital births occurred in level 1 hospitals, reflecting the extent of antenatal referral to level 2 and 3 centres. A major cause of referral was prematurity and low birth-weight, as shown by the distribution (fig 1) of the 5.6% of all infants who weighed less than 2500 g at birth (a group which accounts for 60% of all perinatal deaths). Only 2.8% of infants born in level 1 hospitals weighed less than 2500 g; this percentage increases to 8.2% for level 3 hospitals (fig 1). The disparity is even more pronounced for very low birth-weight infants (<1500 g) which account for a third of all perinatal deaths. Only 0.2% of level 1 babies weighed less than 1500 g, in contrast to 1.6% in level 3 hospitals; level 2 hospitals occupied an intermediate position. Since low birth-weight babies are at greater risk than their normal birth-weight counterparts, antenatal screening and regional referral is effective in concentrating the highest risk births in the hospitals designed to deal with them.

Impact of Regionalisation on Hospital-specific Perinatal Mortality Rates

Fig 2 illustrates the relation between volume of deliveries in specific hospitals and crude perinatal mortality rate; a perinatal death is attributed to the hospital in which the baby was born, even if the infant died in a referral hospital after postnatal transfer. Perinatal mortality rates increase with hospital volume, and there is a fairly rigid separation of level 1, 2, and 3 facilities into contiguous clusters, although the differences in rates between level 2 and 3 hospitals are minimal. This is strong evidence that in a regionalised system the highest risk deliveries flow towards the larger, central hospitals. Of the 87 distinct level 1 maternity units, 21 had no perinatal deaths during the four-year study period.

Although low crude perinatal mortality rates in level 1 hospitals are consistent with good obstetric outcome in small hospitals, they do not in themselves constitute proof of high quality care. If the relatively few deaths that do occur in level 1 hospitals are preventable, a significant number of deaths might have been averted by earlier detection and appropriate transfer. In order to investigate this possibility, we computed birth-weight-specific perinatal mortality rates for level 1, 2, and 3 hospitals (table 1). Level 1 hospitals have lower birth-

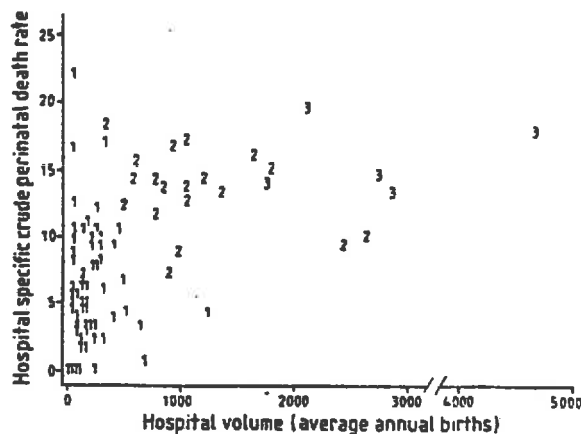


Fig 2—Hospital-specific crude perinatal mortality rates by hospital volume (average annual births) and level.

1 = level 1 (primary level, uncomplicated deliveries). 2 = level 2 (secondary level, regional hospitals). 3 = level 3 (tertiary level, major referral centres).

Death rate is expressed per 1000 total births.

weight-specific perinatal mortality rates than level 2 or 3 hospitals in all but the lowest birth-weight categories. The differences are highly statistically significant for normal birth-weight infants but are less pronounced for low and very low birth-weight infants, although level 3 hospitals have significantly lower perinatal mortality rates than level 2 hospitals for infants who weigh less than 1500 g.

Table II shows the relation between birth-weight-specific perinatal mortality rate and hospital volume, measured as the average number of births/year. Smaller hospitals tend to have the lowest perinatal mortality rates, with a highly significant linear trend apparent for infants weighing more than 2500 g. The differences for low birth-weight infants show that the highest rates tend to occur in the middle-sized, predominantly level 2 maternity hospitals. There is no evidence for a minimum number of deliveries below which outcome suffers, although there were insufficient numbers of births in the very small maternity hospitals (<50 deliveries/year) for statistical comparisons. These figures show that in New Zealand, women who deliver in small, mostly rural level 1 hospitals have the highest likelihood of bearing children who will survive the first week of life.

DISCUSSION

Regionalisation of obstetric and perinatal care in several countries has led to great improvements in perinatal outcome.¹⁷⁻¹⁹ Nevertheless, regionalisation requires significant changes in prevailing patterns of medical care, reduces flexibility for patients, doctors, and hospitals, and

TABLE 1—PERINATAL MORTALITY RATES BY BIRTH-WEIGHT AND HOSPITAL LEVEL, 1978–81

Hospital level	Birth-weight								
	<1500 g			1500–2499 g			≥2500 g		
	Perinatal deaths	Total births	Rate	Perinatal deaths	Total births	Rate	Perinatal deaths	Total births	Rate
Level 1 (n=87)	63	115	547.8	68	1451	46.9	174	54 677	3.2
Level 2 (n=19)	371	638	581.5	308	4291	71.6	421	79 618	5.3
Level 3 (n=5)	367	898	408.7	234	3763	62.2	313	52 191	6.0
Total	801	1651	485.2	610	9505	64.2	908	186 486	4.9

* χ^2 ; $p < 0.01$.

TABLE II—PERINATAL MORTALITY RATES BY BIRTH-WEIGHT AND HOSPITAL VOLUME, 1978-81

Hospital volume (average annual births)	Birth-weight								
	≤1500 g			1500-2499 g			≥2500 g		
	Perinatal deaths	Total births	Rate	Perinatal deaths	Total births	Rate	Perinatal deaths	Total births	Rate
≤100 (n=39)	6	14	428.6	3	213	14.1	20	7842	2.6
101-200 (n=26)	15	32	468.8	15	393	38.2	43	14 142	3.0
201-300 (n=20)	52	83	626.5	61	764	79.8	96	23 710	4.0
301-400 (n=11)	105	210	500.0	99	1426	69.3	134	30 210	4.4
401-500 (n=11)	252	431	584.7	168	2425	69.3	240	45 652	5.3
501-1000 (n=9)	371	881	421.1	264	4284	61.6	375	64 930	5.8
>1000 (n=6)	801	1651	485.2	610	9505	64.2	908	186 486	4.9
Total									

may engender considerable individual and community resistance. In particular, it may deliberately or inadvertently cause the centralisation of services in a few large urban maternity units, and lead to closure of smaller, more accessible maternity services which serve peripheral communities. Indeed, closure of small units is often proposed as a means of improving the quality of care, and averting unnecessary perinatal deaths.

In New Zealand, most maternity units are small, basic facilities, staffed entirely by general practitioner obstetricians and midwives, and serving a primarily rural population. In this setting, our study shows that most high-risk mothers and babies are detected and referred to better-equipped hospitals before delivery. Relatively few low birth-weight babies are born in small hospitals, and those that are have at least as high a chance of survival as have infants of similar weight born in larger units. Crude perinatal mortality rates increase with hospital volume, with the lowest perinatal mortality rates occurring in the smallest hospitals. We were unable to detect a volume threshold below which obstetric care becomes unsafe.

It is unlikely that level 1 hospitals serve lower risk populations. Perinatal mortality rates are higher for certain segments of the New Zealand population, such as smokers, but these groups live in both rural and urban areas. Crude and birth-weight adjusted perinatal mortality rates vary from one part of the country to another, but the disparities are not great and bear little relation to geographic or socioeconomic differences. These findings differ from previous results. Studies in the United States, in particular, have shown that outcome in terms of birth-weight-specific perinatal mortality rates is worse in small obstetric units than in their better-equipped urban counterparts.^{20,21} However, New Zealand differs from the United States in that the system of care is both more tightly organised and more uniform. General practitioners and midwives are responsible for most normal deliveries, and most maternity hospitals have no specialist coverage. Regionalisation has been implemented on a national basis, and antenatal screening—with defined criteria for both consultation and referral—is the norm. The result is a tightly integrated, pyramidal system, in which most high-risk patients are identified by general practitioners and sent to more major referral centres before delivery. In this context, obstetrics is safe in small hospitals.

Our findings have major implications for New Zealand and other industrialised countries. In New Zealand, it has been suggested that about half of the smaller obstetric units should be closed, partly on the assumption that hospitals with fewer than 100 deliveries annually are unsafe. Our results do not support that assumption. Even if all preventable perinatal deaths in level 1 hospitals could be averted by closing these units—which is unlikely, since many of these babies would

still die even if delivered in better-equipped centres—the impact on the perinatal mortality rate would be negligible.

There is no consensus about the appropriate role for general practitioners in obstetric practice.²²⁻²⁵ In New Zealand, about half of all deliveries are carried out by specialist obstetricians, working almost entirely in level 2 and 3 units, and half are done by general practitioners, split equally between level 1 and higher level maternity hospitals. Consultation and referral are frequent, and in general working relations among general practitioners and obstetricians within the catchment areas of the various hospital boards are excellent. Our data support the conclusion that this arrangement is functional, and that obstetric care can be effectively partitioned between generalists and specialists. In an ideal regionalised system, mothers whose pregnancies are uncomplicated would be cared for by general practitioners in comfortable, low-technology environments, while women at risk would be transferred to the care of specialists. Our evidence suggests that such an arrangement can be achieved.

Why are perinatal mortality rates so low in the small hospitals in this study—ie, substantially lower than the rates achieved in higher level facilities? The most likely explanation is that the screening protocols used by the general practitioners are so sensitive that most high-risk pregnancies are detected early with prenatal transfer to level 2 and 3 facilities. The fact that the smallest and most remote maternity hospitals have the lowest perinatal mortality rates probably reflects extreme caution on the part of the general practitioners who work there. It is also probable that these doctors refer a relatively large number of patients who do not subsequently require the services of a better-equipped centre; high sensitivity is achieved at the cost of a loss in specificity. Moreover, the quality of care may be better in some respects in small hospitals. The significantly lower perinatal mortality rates of normal-weight infants in level 1 hospitals by comparison with level 2 and 3 facilities may indicate that low-risk mothers fare better in low technology environments. It is possible that small hospitals in New Zealand achieve a better outcome partly because the level of medical intervention and the setting in which birth occurs are more appropriate to the medical and non-medical requirements of the mothers who go there.

This study was supported by a senior international fellowship from the Fogarty International Center, National Institutes of Health, Bethesda, Maryland, USA; and by a grant from the Health Services Research Committee of the Medical Research Council of New Zealand. Dr Reinken and Dr Shoemaker are indebted to Dr R. Barker, Director-General of Health, New Zealand for his permission to publish.

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References at foot of next page

MIDWIFERY TRAINING

A complaint was laid at the end of 1985 with the Director of Auckland Technical Institute about the quality of the midwifery training course. The complaint was laid by the student midwives in conjunction with Save The Midwives.

A prompt reply from ATI's Assistant Director, Ian Turner, led to a meeting with the Principal, Division of Nursing (Yvonne Shadbolt), four representatives of the students, a representative from Save The Midwives, and Mr Turner. Considerable discussion was given to the subject of the complaint, which was fully written up in the last newsletter (No. 8). The students communicated their point of view with competence and strength, the meeting being well facilitated by Ian Turner.

The following solution was offered to us by Miss Shadbolt: that the curriculum would be completely revised and subjected to scrutiny by a panel of nurse-midwives (sic) at the beginning of the year. She also mentioned that a new tutor, in addition to the current one, had been engaged. We requested that two of 1985's students be included in the panel, the idea received support from Mr Turner, and Miss Shadbolt agreed. She requested the students to present her with a list of the changes that they would like to see made in the 1986 course. We include this list here, and will bring you up to date with the current midwifery training course in Auckland, along with the changes which actually have been made, in our next issue.

- 1) A planned timetable with confirmed events available to students at the beginning of each term.
- 2) Greater theory depth in Term 1 than mere obstetric revision.
- 3) Lectures from clinical specialist practising midwives and appropriate medical personnel.
- 4) Test papers not to be the same as those given the year before.
- 5) Midwives to mark the test papers of student midwives.
- 6) Lectures from domiciliary midwives earlier in the year incorporating criteria for acceptance of patients, transfer, legalistics, and care given to mother and infant during and post delivery.
- 7) Attempt to avoid midwifery theory time predominantly after afternoon tea.
- 8) Utilisation of A.D.N. midwives to assist with clinical experience of student midwives.
- 9) Consistent tutor coverage especially for p.m. shifts.
- 10) Prepared nursing care plan frameworks for antenatal, intranatal and postnatal situations.
- 11) A maximum of 5 family care clients undertaken throughout the year, one of these being a domiciliary experience if the student wishes.
- 12) substitution of blue uniforms for white ones with red "midwifery student" epaulettes.

You can get a pretty good idea of what they got from what they asked for; as my grandmother used to say the proof of the pudding is in the eating, and it will be interesting to see what changes the 1986 midwives will benefit from. See newsletter No 10 for that.

A fifth of all cot deaths and post neo-natal deaths might be avoided if mothers refrain from smoking. This is the conclusion of Department of Health researcher Marjorie Vandenberg, in her paper entitled 'Cigarette Smoking Behaviour of Maori and Non-Maori Women by Maternal Status'.

Both Maori and Non-Maori mothers, in comparison with their non-maternal counterparts, were significantly less likely to have never smoked the younger they were, the more significant the differences, particularly if they were non-Maori. In America, a study by the National Institute of Child Health and Human Development indicated that 70% of 800 infants in the study who died from cot deaths had mothers who smoked during pregnancy (International Herald Tribune 17/11/83).

Meanwhile, a paper by Dr Jane Ritchie and others presented to the Women's Studies Association Conference examines cigarette advertisements in 63 different magazines. Of the 21 most popular women's magazines, 16 are imported. "In women's magazines, women are never, never shown alone, or even in all-women groups. Women are predominantly (79% of the time) shown as part of a heterosexual couple, projecting an image of sexuality and romance. Women are not shown in the home - obviously to the advertiser, the home would not project an image of glamour and romance. Nor are they shown in work-related activity or travelling." In 1980, 14 women under 50 are registered as new cases of lung cancer. The death rate for Maori women from lung cancer has multiplied fivefold in the last 25 years.

COULD LUNG CANCER ERADICATE MAORI WOMEN'S
ALMOST TOTALLY UNSTOPPABLE TO SMOKE.

—FROM THE MAORI WOMEN'S STUDIES ASSOCIATION



From "Malepractice" by Robert Mendelsohn, MD, Contemporary Books Inc, Chicago. Sent by Pene Shuker.

The forceps, however, was not the obstetrical breakthrough that finally took the process of childbirth away from the midwives—and from mothers, as well. The turning point was the elimination of the birthing stool, on which mothers delivered babies by allowing natural contractions and gravity to do their work. Doctors began placing mothers flat on their backs on high tables, with their knees raised. This made it virtually impossible for them to deliver their own babies and assured that they would need a doctor to help.

The supine lithotomy position is the basis for most of the intervention that is routine in modern obstetrical practice. It has effectively deprived women of all control over their childbirth experience. It has also made having babies infinitely more difficult, perilous, and painful, and provided obstetricians with countless seemingly rational reasons to come to the mother's aid.

Nursing Studies Department

note this!

MIDWIFERY PRACTICE

Midwifery Practices: From the Past to the Future

11 - 15 August, 1986

The above workshop is being planned by a group of midwives through the Department of Nursing Studies and Social Sciences Extension, Massey University.

The aim of the workshop is to assist the ongoing development of midwifery. Within this broad framework the objectives are to:

- develop a midwifery model that takes account of N.Z. factors
- review ethical aspects of midwifery practice
- identify and work on problems met with by practising midwives
- provide opportunity to develop skills useful for midwifery
- plan directions along which midwifery can develop

We would like midwives to contribute to the planning of the workshop and request suggestions for this from midwives. Suggestions for additional objectives are welcome, along with ideas about topics that are already covered in the objectives.

The tear-off section below can be used, but a letter would also be welcomed. Please send your suggestions by 28th February, to enable further planning.

To:

Marion Pybus
Coordinator
Department of Nursing Studies
Massey University

The following are my/our suggestions of topics I/we would like to see included in a workshop on midwifery practices.

Topic:
Reason for inclusion:
.....
.....

Name:

Address:

.....

yet another male contraceptive!

In a spoof report, "Breakthrough in male contraception", Dawn Bracey described a new contraceptive in the form of an intra-penile device (IPD) developed by Dr Sophie Merkin and marketed under the trade name of "Umbrelly". It is like a miniature umbrella, the underside of which is coated with a spermicidal jelly, which is plunged into the tip of the penis and through the scrotum.

Experiments on 1000 white whales proved the Umbrelly to be 100% effective in preventing production of sperm, and eminently satisfactory to the female whale since it does not interfere with her rutting pleasure. The device is safe; only two of the 763 students tested with it died of scrotal infection. Side effects were few; only 20 had tissue edema. Complaints included cramping, bleeding and acute abdominal pain, but Dr Sophie Merkin considered that these symptoms should disappear within a year. One complication caused by the IPD is scrotal infection which sometimes necessitates surgical removal of the testicles, "but this is a rare case" said Merkin, "too rare to be statistically important". And the report goes on to say that "she and other distinguished members of the Women's College of Surgeons agreed that the benefits far outweighed the risks."

....from Woman's Experience of Sex, Sheila Kitzinger, 1983,
published by G.P.Putnam's Sons.

meetings

Meetings will again be held quarterly this year. at 24 Ashton Rd., Mt Eden, Ak, starting at 8 p.m. The dates for this year are Monday May 5, August 4, November 3, and for 1987 February 10. Informal meetings are held to post out the newsletter and do the odd jobs that come up from time to time, so if you are willing to become involved in these please let Judy Larkin know (phone 602 301).

SAVE THE MIDWIVES ASSOCIATION SUBSCRIPTION FORM
please post to Lynda Schroeder, 19 Awa St, Miramar, Wellington.

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President: Barbara MacFarlane (retiring)

Secretary: Judy Larkin

Subscriptions secretary/Treasurer: Lynda Schroeder

Newsletter collective: Judy Larkin, Veronika Muller, Sally Morison

Articles contributed for this newsletter were sent in by:

Barbara MacFarlane, Judy Hedwig, Sue Lennox,
Ruth Nicholson, Lynda Williams.

This is a quarterly publication. Please allow up to three months to receive your first copy.