Smoking cessation in New Zealand: education and resources for use by midwives for women who smoke during pregnancy

SUSAN PULLON, DEBORAH MCLEOD, CHERYL BENN¹, ANNE VICCARS², SONYA WHITE, TIMOTHY COOKSON³, ANTHONY DOWELL and ROBYN GREEN FOR THE MEWS STUDY TEAM

Wellington School of Medicine and Health Sciences, University of Otago, New Zealand, ¹School of Health Sciences, Massey University, New Zealand, ²Bournemouth University, UK and ³Matpro, Wellington School of Medicine and Health Sciences, University of Otago, New Zealand

SUMMARY

This study describes the development and evaluation of education programmes and associated resource materials to support smoking cessation and reduction, and breastfeeding promotion strategies for pregnant women who smoke, during usual primary maternity care by midwives. Education programmes and resource materials were developed by midwives and researchers as part of a cluster randomized trial of Midwifery Education for Women who Smoke (the MEWS study). Development included a cohort study, advice from lactation consultants and smoking cessation counsellors (including Māori professionals), and early consultation with midwives who would be delivering the programmes. Resources developed included videotapes, charts and laminated information cards. Resources were pre-tested with pregnant women and opinion leaders. Consultation with the midwives allocated to each of the intervention groups in the trial raised a number of issues. These were addressed, and solutions incorporated into each of the programmes, to enable effective delivery within usual care. Following delivery of the programmes, women and their midwives were surveyed and a sample interviewed to ascertain attitudes to the programmes and resources. Women and their midwives responded positively to the smoking cessation education programme, the breastfeeding promotion programme and the resources used. Those women who did not stop smoking completely often succeeded in significantly reducing their tobacco consumption. Women identified their midwife as a valuable resource and appreciated her ongoing encouragement. Involvement of health professionals who are to deliver health promotion interventions is essential for successful integration of programmes into usual care. Midwives were able to effectively deliver programmes that were developed and targeted to their needs as health educators. The pregnancy-specific resources developed for women who smoke played an important part in helping midwives deliver their health promotion messages more effectively.

Key words: midwives; pregnancy; smoking cessation

INTRODUCTION

Maternal and child health can be improved by a reduction in maternal smoking and increased duration of breastfeeding. Both have a significant and independent health benefit (Horta et al., 1997; Kramer et al., 2001). In New Zealand, 25% of women smoke during pregnancy (Ford et al., 1993; Wellington Women’s Hospital. Capital Coast Health, 1998), with disproportionately
higher rates for Māori and those in lower socio-economic groups, for whom literacy skills may be less well developed (Laugesen and Clements, 1998; Ministry of Health, 1999). Women who smoke are significantly less likely to continue to breastfeed than their non-smoking counterparts (Minchin, 1991; Horta et al., 2001; McLeod et al., 2002).

Numerous effective smoking cessation programmes for pregnant women are described in the literature (Dolan-Mullen et al., 1994; Secker-Walker et al., 1995), but in New Zealand none have yet been fully integrated with usual maternity care. Few programmes have taken account of the particular educational needs of women who smoke in relation to breastfeeding (Minchin, 1991), the stage of change women have reached in their attempts to quit (Stotts et al., 1996), or the benefits derived from significant smoking reduction if cessation cannot be achieved (Windsor et al., 1999; Lumley et al., 2001; Walsh et al., 2001).

Usual maternity care in New Zealand is a case-load-type system, delivered during the peripregnancy period by a midwife either alone, or in conjunction with another midwife, a general practitioner or an obstetrician. Case-load midwifery offers women continuity of both care and carer, and has been shown to develop positive relationships between women and their midwife (Forster, 2002). Case-based midwifery, either alone or in conjunction with general practitioner care, has been shown to have beneficial effects compared with clinic-based maternity care (Hodnett, 2002; Villar et al., 2002). New Zealand midwives develop an ongoing professional relationship with the women they care for over a period of time, often visiting at home and meeting with the woman's family (Cookson, 1998). They are thus in an excellent position to deliver brief but focussed ongoing intervention within a family context. The family context (whanau) is an important and integral aspect of health for Māori (Durie, 1998) and other ethnic groups, and there is an opportunity for midwives to address the smoking habits of partners and other family members. Cessation or reduction by partners is associated with smoking cessation success for pregnant women (Nafstad et al., 1996; Wakefield et al., 1998).

The implementation of smoking cessation programmes is more successful if those delivering the programme have been involved in its development (Lumley et al., 1998). Programmes tailored to pregnancy, and to particular ethnic groups, are more likely to succeed in such groups (Agency for Health Care Policy and Research, 1998). Such programmes are delivered most effectively using appropriate and relevant written and audio-visual resource materials. Use of resource materials alone is much less effective than when used within a programme of advice and support. (Meilier et al., 1999).

This paper considers the development, use and evaluation of two separate health promotion programmes for midwives to use with women who smoke; one a smoking cessation education programme, and the other a breastfeeding promotion programme. The programmes were developed in the context of a prospective cohort study followed by a cluster randomized trial testing the effectiveness of programmes delivered by midwives as part of usual maternity care (D. McLeod et al., 2003). The pregnancy-specific educational resource materials used, including some for Māori, are described.

**DEVELOPMENT OF THE PROGRAMMES**

**Context**

The cluster randomized trial within which development took place compared the effectiveness of two health promotion programmes delivered by midwives as part of usual maternity care, either alone or combined. The unit of randomization for the study was a midwife or midwives who shared the care of individual women, to avoid inter-group contamination. Midwives were randomized into a control group or one of three intervention groups. Women who smoked, including those who smoked at conception, were eligible for recruitment into the trial by their midwives. The study took place in the lower North Island of New Zealand from 1999 to 2001 (D. McLeod et al., 2003).

**Ethics approval**

Ethics approval for the study was granted by the Wellington and Palmerston North-Whanganui Ethics Committees, accredited by the Health Research Council of New Zealand.
Phase 1
From the outset, Māori were identified as having a particular health education need in the area of smoking cessation. In-depth interviews were initially conducted with three Māori midwives and a Māori smoking cessation counsellor. Advice was sought from a Māori health research centre, Te Ropu Rangahau Hauora a Eru Pomare. Māori midwives provided further feedback on trial materials and midwife training for both programmes.

The director of a dedicated New Zealand smoking cessation programme for pregnant women (Cowan, 1996a; Cowan, 1996b) provided early advice about midwife training for smoking cessation and reduction, training materials and resources for use with women.

Interviews were conducted with an independent midwife representative, lactation consultants and a Plunket (child health) nurse to identify further the particular infant feeding needs for women who smoke. Existing evidence-based information and written educational materials for women were considered for inclusion (Table 1).

Midwives who were to deliver the different programmes then worked with the researchers in separate groups to develop (i) the smoking education programme, and (ii) the breastfeeding promotion programme. Initially, programmes aimed to include:

- the introduction of an educational package and provision of ongoing support to women as part of routine antenatal and postnatal visiting;
- training for midwives providing the programmes; and
- pregnancy-specific resource materials to assist midwives in their health education task.

Key issues
As a result of initial development, key issues were identified by and for midwives:

- uncertainty about how best to ask about smoking status;
- uncertainty about how a smoking education programme would be received by women and/or their partners;
- a lack of knowledge about the specific harmful mechanisms and effects of smoking on the baby and mother, despite good general knowledge about smoking damage;
- a lack of confidence and knowledge about how to undertake active smoking cessation with women;
- concern about the time smoking cessation would take during usual care;
- a lack of knowledge about links between smoking and breastfeeding, and a lack of understanding about the particular problems women who smoke face with breastfeeding;
- concern about low reading age for many women who smoke; and
- a paucity of targeted audio-visual resources for pregnant women to support any ongoing education programme.

Phase 2
Identification of key issues necessitated a further phase of development. Existing resources proved to only partially meet either the midwives’ or the

Table 1: Pre-existing resources used in the pamphlet packs

Pamphlet pack (Smoke Ed)
Included:
- The Quit Book, A booklet promoting ‘Quitline’, a free nationwide telephone support line available to smokers, both pregnant and non-pregnant (The Quit Group: Te Hotu Manawa Māori. The Health Sponsorship Council. The Cancer Society, 1999).
- E Te Whanaup Ahui Mai: my Baby will be Māori and Smokefree (Ministry of Health, 1998b).
- Having a Smoke, Having a Think (Health Funding Authority, 1999).
- Ten Tips on How to Give up Smoking (Health Funding Authority and Ministry of Health, 2000).

Pamphlet pack (Breastfeeding)
Included:
- You can Breastfeed your Baby (low reading age) (Nursing Mothers’ Association, 1998).
- Breastfeeding: Giving your Baby the Best you’ve got (Public Health Commission, 1995).
- Feeding your Baby—Breast or Bottle? (MIDIRS and the NHS Centre for Reviews and Dissemination, 1999).
- Breastfeeding: You can Do it (Ministry of Health, 1998a).
women's needs. Further advice was sought by researchers and midwives from the previously consulted smoking cessation counsellors and lactation consultants, an advertising company, and a film company experienced in health education videotape production.

The midwife training for the smoking cessation programme was expanded to include a session with a Māori smoking cessation counsellor, a videotape demonstration of introduction and ongoing support for smoking cessation within usual antenatal visits using motivational interviewing techniques, and arrangements for ongoing support by researchers for midwives during programme delivery. The midwife training for the breastfeeding promotion programme required further material on links between smoking and breastfeeding.

Funding was obtained to develop evidence-based audio-visual resource materials for midwives to use with women. Researchers and midwives who were to deliver the smoking cessation programme developed a standardized question card (Mullen et al., 1991; Kharrazi et al., 1999) and notes for midwives in a flipchart form. The researcher–midwife team worked with a video producer to create an original script for a smoking cessation video for women, based around current smoking cessation guidelines and the experiences of four pregnant women, two of whom were Māori. Researchers and midwives who were to deliver the breastfeeding promotion programme developed an evidence-based booklet for midwives, and an accompanying laminated information sheet summarizing the key messages for women. A videotape illustrating the breastfeeding process was sought as midwives had identified a need for visual demonstration. Six different videotapes available at the time were reviewed but found to be unsuitable, as they promoted the concept of breastfeeding but showed few practical details. Permission was sought and received to extract a short clip illustrating the latching-on process from an Australian-made videotape (Nursing Mothers’ Association of Australia, 1999).

Feedback on the proposed programmes was again sought. Four women who had participated previously in the prospective cohort study reviewed trial resource materials, including the flipchart, laminated information card and videotapes. Four Māori researchers, two smoking cessation counsellors, the director of the national organization ‘Quitline’, the director of the New Zealand Guidelines Group, three independent consumers, a paediatrician and

Table 2: Resources developed to address identified teaching and learning needs (approximate cost $NZ35 000)

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>A small laminated card with a standardized question (Mullen et al., 1991; Kharrazi et al., 1999) about smoking status, for midwives to ask consistently about smoking status: Which of the following best describes you?</td>
</tr>
<tr>
<td></td>
<td>'I smoke regularly now, about the same amount as before finding out I was pregnant.'</td>
</tr>
<tr>
<td></td>
<td>'I smoke regularly now, but I've cut down since I found out I was pregnant.'</td>
</tr>
<tr>
<td></td>
<td>'I smoke every once in a while.'</td>
</tr>
<tr>
<td></td>
<td>'I have quit smoking since finding out I was pregnant.'</td>
</tr>
<tr>
<td></td>
<td>'I wasn't smoking around the time I found out I was pregnant and I don't currently smoke cigarettes.'</td>
</tr>
<tr>
<td></td>
<td>'I have never smoked cigarettes.'</td>
</tr>
<tr>
<td>2.</td>
<td><em>This is my Baby: Smokefree.</em> A videotape about the process of stopping smoking that follows New Zealand women during their pregnancies as they change their smoking behaviour, interspersed with a humorous theme and short information-bytes (MEWS Study Team, 1999d).</td>
</tr>
<tr>
<td>3.</td>
<td><em>This is my Baby: Latching On.</em> A videotape showing the latching-on process. This was clipped, with permission, from a longer videotape about the process of breastfeeding (MEWS Study Team, 1999d).</td>
</tr>
<tr>
<td>5.</td>
<td>Getting Breastfeeding off to a Good Start. A laminated A4-size information card, summarizing the main points about establishing successful breastfeeding, and including specific information and advice about breastfeeding for women who smoke (MEWS Study Team, 1999b).</td>
</tr>
<tr>
<td>7.</td>
<td><em>This is my Baby.</em> training video for midwives showing two different midwives undertaking antenatal consultations, successfully incorporating smoking cessation education and support into usual care (MEWS Study Team, 1999f). An A5-size booklet detailing the study protocol (separate booklet for each of the trial arms).</td>
</tr>
</tbody>
</table>

Table 3: Training in programme delivery by midwives

1. The Smoke Ed programme
All midwives delivering the Smoke Ed programme attended a training session with two members of the study team, and a trained Māori smoking cessation counsellor. Telephone and face-to-face meeting for follow-up was organized in each locality. The training included:

- an introduction to smoking cessation and the objectives of the study;
- up-to-date information from evidence-based guidelines about the effects of smoking and the efficacy of smoking cessation programmes during pregnancy (Raw et al., 1998; National Advisory Committee on Health and Disability, 1999);
- an interactive session with a Māori smoking cessation counsellor about the use of motivational interviewing techniques in a Māori context;
- the viewing of and discussion about the training videotape (MEWS Study Team, 1999f);
- discussion of motivational interviewing and use by midwives within their own practices;
- an introduction to the study resource materials; and
- details about recruitment of women into the study, delivery of the intervention, data collection, ongoing support and follow-up.

2. The Breastfeeding promotion programme
All midwives delivering the Breastfeeding promotion programme attended a training session with two members of the study team. Telephone and face-to-face meeting for follow-up was organized in each locality. The training included:

- an introduction to smoking cessation and the objectives of the study;
- up-to-date information from evidence-based guidelines about the effects of smoking and the effects of smoking on the duration of breastfeeding;
- introduction to the study resource materials;
- discussion of strategies for smoke-free breastfeeding and use by midwives within their own practices;
- discussion of referral options for women with breastfeeding problems; and
- details about recruitment of women into the study, delivery of the intervention, data collection, and ongoing support and follow-up.

3. The Combined programme
All midwives attended an initial training session prior to recruiting women to the study. They attended the same training session as those delivering the Smoke Ed programme, and then continued on with a further training session—the same session that those delivering the Breastfeeding promotion programme received. Follow-up via telephone was carried out by the study team over the period of the study, and a follow up meeting was organized in each locality for the midwives delivering the Combined programmes.

three general practitioners also gave further feedback to the researcher–midwife teams to produce final versions of the programmes, including the associated resources (Table 2). Depending on the programme she was allocated to deliver, training was undertaken by each midwife prior to implementation (Table 3).

The Smoke Education programme
Smoking cessation education was designed to take place at the usual scheduled antenatal visits by the midwife with the woman, but with one extra, specifically funded visit where emphasis could be placed on introduction of the smoking cessation package. Smoking status was established using the question card (Table 2) as part of the midwife’s first ‘booking in’ visit, and the programme was offered to all women who smoked, including those smoking at conception. The midwife then organized a second visit at a time suitable for a partner/support person to be present. A more detailed smoking history, including partner’s smoking status, was taken, information about smoking was discussed using the flipchart (MEWS Study Team, 1999c), and the pamphlet pack Smoke Ed (Table 1) was introduced. The midwife assessed readiness to quit (or maintaining cessation) with the woman and/or her partner, and discussed strategies for positive smoking change. The midwife watched the smoking cessation videotape (MEWS Study Team, 1999e) with the woman if time permitted, and left a copy for viewing.

At subsequent visits the midwife asked about smoking status, offered continued encouragement with positive feedback on any success, and helped with withdrawal symptoms or relapses (with a partner/support person if appropriate) alongside usual antenatal or post-natal care. At the last post-natal visit, the midwife encouraged the woman and her partner/support person to continue reduction/cessation after birth.

The Breastfeeding promotion programme
The ‘Breastfeeding’ promotion was designed for women who smoke, and was to take place at
usual scheduled antenatal visits. As part of the midwife’s first ‘booking in’ visit, smoking status was established using the question card (Table 2), and the programme was offered to all women who smoked, including those smoking at conception.

At the visits between 28 and 36 weeks, the midwife discussed breastfeeding, established the woman’s intended method of infant feeding, and introduced the pamphlet pack *Breastfeeding* (Table 1). The midwife also discussed material from the breastfeeding information booklet (MEWS Study Team, 1999a), and discussed strategies for smoke-free breastfeeding. The breastfeeding videotape (MEWS Study Team, 1999d) was shown. At 36 weeks, the midwife gave the woman the laminated card about breastfeeding (MEWS Study Team, 1999b) for use in hospital, and discussed problems she might encounter in establishing breastfeeding.

After delivery a breastfeed was directly observed within the first 24 h, either by the woman’s own midwife or, if not possible, by another midwife or lactation consultant. Midwives could refer women having difficulty directly to a lactation consultant. The midwife encouraged women to use the information on the laminated sheet about breastfeeding to help with latching. At subsequent post-natal visits, the midwife showed the breastfeeding video again and left this with the woman if appropriate. She reinforced the use of the laminated sheet and discussed possible solutions for breastfeeding problems.

**Combined delivery of both programmes**

All midwives delivering the ‘Combined’ programme offered both programmes together to women in their care. As part of the midwife’s first ‘booking in’ visit, smoking status was established using the question card (Table 2), and the programme offered to all women who smoked, including those smoking at conception.

**EVALUATION OF THE PROGRAMMES**

**Outcome evaluation**

Sixty-one midwives successfully recruited 297 women for the cluster randomized trial, in which effectiveness of the programmes was evaluated. Twenty-six women moved out of the area over the study period, leaving 271 women in the longitudinal study. The trial demonstrated a significant positive change in smoking behaviour during pregnancy by women whose midwives had delivered the Smoke Ed programme, either alone or in combination with the Breastfeeding promotion programme. The breastfeeding promotion programme did not result in any change in breastfeeding rates. However, at 6 weeks after birth, women who had reduced or stopped smoking were more likely to be fully breastfeeding (D. McLeod et al., 2003).

**Process evaluation**

**Method**

Upon completion of data collection for the outcome evaluation, midwives and women provided written comments about the programmes. Women commented on their experience of receiving a health promotion programme from their midwife as part of a 4-month post-natal questionnaire. Midwives described their experiences delivering the health promotion programme(s), including recruitment, training, provision of information, ongoing support and follow-up from the researchers, and they also identified barriers to education for women who smoke and resultant changes to their clinical practice.

Individual face-to-face interviews were undertaken with a representative sample of women who had received one or both health promotion programmes. Interviews were conducted by a midwife researcher who had not participated in the woman’s care. Sampling of women was purposive and designed to select ‘information-rich’ cases. A list of women was compiled to include women who had received each of the programmes. Women were selected from the list to encompass factors that had been associated with smoking cessation, such as age, ethnicity, whether the pregnancy was the woman’s first and whether the woman’s partner smoked. Women were also selected on the basis of outcomes of importance to the study: smoking status and breastfeeding at 4 months. Women were asked about their experience with the programmes and associated resources.

A representative sample of midwives, including seven who had cared for the women interviewed, were invited to an individual face-to-face interview by one of two experienced researchers not previously involved with programme
development or implementation. Sampling of midwives was designed to include midwives trained to deliver each of the programmes, midwives of different ages and experience, and midwives with different levels of participation in the study. They were asked about their attitudes to and role in smoking cessation and breastfeeding education, perceived barriers and facilitating factors in provision of the health promotion programme they delivered, and any effects on the midwife–mother relationship.

All interviews were audi-taped and transcribed verbatim. Data were analysed by a process of thematic analysis (Rice and Ezzy, 1999). Initially transcripts were analysed to identify text relating to key topic areas. As the interviews concerned the women's and midwives' perceptions of the smoking cessation and breastfeeding education and support, the data relating to each section were identified and separated. This enabled the data to be reduced for ease of management during the process of analysis. The data relevant to each topic area were separated out and then reduced further into an outline. Preliminary themes were identified and compared across each interview for the women and the midwives, with supporting verbatim data being included after the interviews had been independently read and re-read numerous times by members of the research team. This was followed by discussion about the accuracy of the themes in reflecting the data, resulting in themes being refined further. Some of the team members who were not involved in the analysis from the outset identified the same themes in the same information, supporting the reliability of the analysis.

**Sample characteristics**

Questionnaires were received from 184 women at the conclusion of the study, a response rate of 68%. Twelve women who had received one or both programmes were interviewed. Change in smoking status, ethnicity and method of infant feeding at 4 months after birth for each woman are shown in Table 4.

Forty-three midwives responded with a written evaluation after data collection for the cluster randomized trial was completed. Twelve midwives were interviewed. Five had been trained to deliver the Smoke Ed programme, three the Breastfeeding promotion programme, and four the Combined programme.

**The Smoke Ed programme and associated resources**

**Women's views**

Women commented that the midwife’s attitude toward smoking cessation was most important to them, and welcomed re-enforcement for any positive changes made, however small. They appreciated good information and ongoing support, and felt that even when they ‘hated’ being repeatedly asked about smoking, ‘it was part of her [the midwife’s] job’. Women appreciated time to study and understood the resources provided by the midwife. All

<table>
<thead>
<tr>
<th>Woman</th>
<th>Programme received</th>
<th>Smoking status*</th>
<th>Stopped at all</th>
<th>First pregnancy</th>
<th>Age (years)</th>
<th>Partner smoker</th>
<th>Ethnicity</th>
<th>Breastfeeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Breastfeed</td>
<td>Quit</td>
<td>Yes</td>
<td>No</td>
<td>31</td>
<td>Yes</td>
<td>Māori</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Smoke Ed</td>
<td>Regular</td>
<td>Reduced</td>
<td>Yes</td>
<td>26</td>
<td>Yes</td>
<td>European</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Smoke Ed</td>
<td>Occasional</td>
<td>Yes</td>
<td>No</td>
<td>36</td>
<td>Yes</td>
<td>European</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Smoke Ed</td>
<td>Quit</td>
<td>Yes</td>
<td>No</td>
<td>36</td>
<td>No</td>
<td>European</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Combined</td>
<td>Regular</td>
<td>Reduced</td>
<td>Yes</td>
<td>24</td>
<td>Yes</td>
<td>European</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>Combined</td>
<td>Quit</td>
<td>Yes</td>
<td>Yes</td>
<td>21</td>
<td>Yes</td>
<td>Māori</td>
<td>No</td>
</tr>
<tr>
<td>7</td>
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<td>Regular</td>
<td>No</td>
<td>No</td>
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<td>Yes</td>
</tr>
<tr>
<td>8</td>
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<td>Regular</td>
<td>No</td>
<td>No</td>
<td>25</td>
<td>Yes</td>
<td>European</td>
<td>Yes</td>
</tr>
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<td>9</td>
<td>Combined</td>
<td>Regular</td>
<td>Reduced</td>
<td>No</td>
<td>36</td>
<td>Ex</td>
<td>European</td>
<td>Yes</td>
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<td>10</td>
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<tr>
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<td>Quit</td>
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<td>No</td>
<td>European</td>
<td>No</td>
</tr>
<tr>
<td>12</td>
<td>Combined</td>
<td>Regular</td>
<td>No</td>
<td>Yes</td>
<td>22</td>
<td>NA</td>
<td>Māori</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Smoking status at the time of interview (all women were smoking at conception).
remembered at least some of the resources introduced by the midwife, although there was variation in opinion about the usefulness of each resource. Some women commented that it was important to have a variety of resources and suggested they needed more time to properly absorb the material shown. The smoking cessation videotape was positively received. Some women thought it was not ‘scary enough’. The flipchart about smoking effects and cessation was memorable, especially the page showing the accumulated costs of smoking. The page showing harmful effects of smoking on their baby affected some women. Of the booklets made available, the ‘Quitbook’ was most frequently mentioned.

Midwives’ views
Midwives positively received the smoking cessation training, and some commented that it helped consolidate smoking cessation information received elsewhere. Personal ongoing support from the researchers was appreciated: ‘it was this supportive attitude that eventually encouraged me’.

The small laminated question card asking about smoking status and the smoking cessation videotape were popular resources: ‘The women have found it [the video] really good I think’, although one midwife commented that some people ‘couldn’t cope with it [the smoking education video]’.

Some felt the flipchart was the best resource as it was readily to hand, and individual pages could be used as the midwife thought best for an individual woman. The page summarizing money saved by stopping smoking consistently received positive comment, ‘just showing you know, by reducing their smoking by 10 a day this is what you would save over your pregnancy’. The ‘Quitbook’ was singled out as being useful. There were no negative comments about the time taken to use the resources within usual care, although some midwives would have liked ‘a longer initial training period’.

Breastfeeding promotion programme and associated resources
Women’s views
The breastfeeding videotape was well received. Women liked the short length, the emphasis on a single practical aspect (‘that was really helpful . . . and I had it right down to a T’) and found it useful to watch repeatedly while establishing breastfeeding. The laminated breastfeeding information sheet with information about links between smoking and breastfeeding was appreciated by women. Pre-existing leaflets were remembered and found useful by some.

Midwives’ views
Midwives found the training and the information supplied helpful and reliable. The evidence-based information booklet presented little new material for some, but highlighted a previous lack of information about smoking and breastfeeding. The videotape was considered ‘really helpful’, with some midwives requesting more copies for use post-natally because it was short and simply demonstrated the latching process. The laminated information sheet made the link between smoking and breastfeeding clear.

DISCUSSION
The programmes and associated resources developed for the MEWS study were well received by women and midwives. The programmes were effective in positively changing smoking behaviour and were delivered using resources midwives regarded as successful and appropriate within usual primary maternity care. Women in the study who reduced or succeeded in quitting smoking were more likely to still be breastfeeding at 4 months after birth. The breastfeeding promotion programme did not result in a change in breastfeeding rates, perhaps because the programme was delivered to a population of women for whom initiation rates are already high (McLeod et al., 2002), making further improvement difficult to achieve.

Early allocation of the midwives to the different programmes by the researchers allowed midwives who would be delivering each programme to be involved in development. The time spent on this task was significant, but resulted in training and associated programme development in response to identified teaching and learning needs of the midwives who were to deliver the programmes. Midwives must feel comfortable with smoking cessation programmes for them to become part of everyday practice (Power et al., 1989). The emphasis placed on addressing the identified teaching and learning needs of the midwives in their health promotion role, including their involvement in the
development process, was key to programme acceptance and ongoing use within usual primary maternity care.

Midwives described the associated resources as reliable, and as useful teaching and learning aids. They played an important part in helping midwives deliver their messages more effectively. This finding is consistent with other studies (Walsh and Redman, 1993; Secker-Walker et al., 1994; Wakefield et al., 1998; Meillier et al., 1999), where resource use has been shown to be most worthwhile when part of ongoing education and support. Development of educational materials such as videotapes has been shown to be successful in other smoking cessation programmes for pregnant women (Secker-Walker et al., 1997; Walsh et al., 1997; Lumley et al., 1998).

The initial costs of programme development included training development, a one-off extra payment equivalent to the usual antenatal visit fee for midwives introducing the smoking cessation programme, design and production of a range of resources for both midwives and women, and provision of ongoing support for midwives delivering the programmes. While initial costs were sizeable, ongoing costs for continued programme delivery are considerably less, even including the training of midwives new to the programmes and the further larger scale reproduction of resource materials.

Women considered the midwives’ attitudes, encouragement and support to be important in both programmes. Some commented that they responded to a resource only if the midwife took time to introduce it.

In the smoking education programme, midwives tended to downplay the importance of their own role, some considering smoking cessation programme delivery outside their role as maternity care providers. The women’s views are consistent with the findings of other studies of smoking cessation, where the role and attitude of the health professional has been shown to be a powerful influence (Owen and McNeill, 1999; Walsh et al., 2001). The women’s views about the resources varied, with each liking some of the resources, highlighting the need for a range of aids to help smokers quit (Lancaster et al., 2000). The range of opinions about the impact of the smoking cessation video may be related to the ‘stage of change’ women had reached when introduced to the resources. Resources that ‘shock’ are most appropriate for those in the pre-contemplation phase, whereas those that give practical advice and strategies for stopping smoking are more suited to those who are actively quitting (DiClemente et al., 2000).

Midwives all considered breastfeeding promotion as part of their role, irrespective of the woman’s smoking status. Some midwives felt they were already promoting breastfeeding to women who smoked and the only additions to their usual practice were the resources illustrating links between smoking and breastfeeding. Some midwives delivering the combined programmes used breastfeeding promotion as a positive way of getting the smoking cessation message across. They used the breastfeeding promotion resources, and the information about links between smoking and breastfeeding to good effect, highlighting a holistic approach to health promotion, tailored to individual women, as part of usual care. This global approach to healthy choices has been shown to be successful in other settings (Levesque et al., 2000).

Joint programme development with midwives, appropriate programme training and associated resource development were all integral and essential parts of this study. The midwives were able to use resultant skills and resources in an enhanced health promotion role with women who smoke to achieve positive changes in behaviour over the course of usual care throughout pregnancy and the post-natal period.

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Address for correspondence:
Dr S. Pullon
Department of General Practice
Wellington School of Medicine and Health Sciences
PO Box 7343
Wellington South
New Zealand
REFERENCES


Health Funding Authority (1999) Having a Smoke… Having a Think [pamphlet]. Health Funding Authority, New Zealand.

Health Funding Authority and Ministry of Health (2000) Ten Tips on How to Give up Smoking [pamphlet]. Health Funding Authority and Ministry of Health, New Zealand.


MEWS Study Team (1999a) Getting Breastfeeding off to a Good Start. Information for Midwives [booklet]. MEWS Study Team, Wellington.

MEWS Study Team (1999b) Getting Breastfeeding off to a Good Start [laminated A4 information card]. MEWS Study Team, Wellington.

MEWS Study Team (1999c) Smoking Cessation: Notes for Midwives [flipchart]. MEWS Study Team, Wellington.

MEWS Study Team (1999d) This is my Baby: Latching On (adapted from Nursing Mothers’ Association of Australia, Breastfeeding Positioning and Attachment with Sue Cox, 1999) [videocassette]. Pacific Crews, Wellington.

MEWS Study Team (1999e) This is my Baby: Smokefree [videocassette]. Pacific Crews, Wellington.

MIDIRS (Midwives Information and Resource Service) and the NHS Centre for Reviews and Dissemination (1999) Feeding your Baby—Breast or Bottle? [pamphlet]. MIDIRS, Bristol.


Nursing Mothers’ Association of Australia (1999) Breastfeeding: Positioning and Attachment with Sue Cox

E-mail: spullon@wnmeds.ac.nz
[videocassette]. Nursing Mothers’ Association of Australia, Australia.


