



*Review of  
services offered  
by midwives*

**NHMRC**

National Health and Medical Research Council

*Review of services  
offered by midwives*

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## SUMMARY

### **Background**

In November 1995, the National Health and Medical Research Council (NHMRC) endorsed the report *Options for Effective Care in Childbirth* (NHMRC 1996). Subsequent to this, in 1996 the Working Party to Review the Services Offered by Midwives in Australia was established to advise on measures that should be put in place to authorise midwives to order and interpret a limited range of tests, and to prescribe specified drugs as part of the care of healthy women during uncomplicated pregnancy and childbirth.

In undertaking this review, the Working Party acknowledged the crucial importance of collaboration between obstetricians, general practitioners and midwives in providing a high standard of maternity care. The Working Party also noted that the roles and responsibilities of midwives had evolved over a number of years and that it was now common and accepted practice in many hospitals for midwives to order and interpret tests and initiate medications.

The Working Party also considered the implications for service delivery in rural and remote regions where there are insufficient numbers of general practitioners or obstetricians to ensure the ongoing maintenance of the high standards of medical services that is required for all Australian women. Inherent in this was the need to address the ongoing educational needs for all midwives.

### **Approach to the review**

The Working Party included representatives from obstetrics, epidemiology, general practice, midwifery, health administration and the consumer movement. The full list of Working Party members and the Terms of Reference are shown in Appendix A. Under the Terms of Reference for the review, the Working Party addressed issues of safety, cost and the impact on professional practice associated with ordering and interpreting tests and prescribing pharmacological substances by midwives during the care of women experiencing uncomplicated pregnancy and childbirth. In doing so, and taking account of the complexity of these issues, the Working Party chose to concentrate on midwives employed by public maternity services, where midwifery models of care are being increasingly introduced in response to community request. These midwives may work in maternity units at a public hospital or in an outreach or community setting. Whichever applies, it is clear that midwives' practice should be covered by agreed protocols and employment conditions approved by the public hospital concerned. It is acknowledged that the recommendations contained in this report could be extended to midwives employed in other settings, providing issues relating to cost implications, indemnity and legislation are addressed.

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Evidence was gathered from the national and international literature with particular emphasis on systematic reviews of evidence from randomised controlled trials, in accordance with NHMRC recommendations. Where such high-level evidence was not available, the panel drew on observational evidence and expert clinical opinion.

All randomised controlled trials that have compared midwifery models of care with conventional models of care were identified and reviewed. However, it was noted that the ordering of tests and prescribing of pharmacological substances by midwives were not addressed specifically in these clinical trials. Rather, the randomised controlled trial results provide evidence on the outcomes of midwifery practice, which include an unspecified range of responsibilities for ordering tests and 'prescribing' medications by midwives. Therefore, it was not possible to separate the assessment of the impact of these specific practices from the overall package of care contained within the midwifery models.

## **Legislation**

Another factor that influenced the scope of this review was that considerable variation currently exists between States/Territories in the legislative arrangements governing the ordering of tests and 'prescribing' of pharmacological substances by midwives.

Legislation covering the prescribing and administration of medications is generally contained in the various poisons, controlled substances and pharmacy acts, eg *Poisons and Therapeutic Goods Act 1966* (NSW), *Controlled Substances Act 1984* (SA), *Pharmacy Act 1964* (WA), which in general limit prescribing, in the full sense of the word, to medical practitioners, dentists and veterinary surgeons but allow other health professionals, including nurses, to administer drugs. In some States, such as New South Wales, amendments have already been made to broaden the scope of such legislation to allow limited 'prescribing' rights to nurses (including midwives). In other States, there are currently no legal provisions covering such activities by midwives. In view of these variations, consideration of midwives' extended involvement with the ordering of drugs and medications in this report is restricted to initiating the use of such pharmacological substances under agreed protocols, rather than 'prescribing' *per se* (see Glossary).

In the case of ordering and interpreting diagnostic tests, no legislation in any State or Territory specifically regulates this activity. However, if 'medical services' are defined to include the ordering/interpretation of tests, the various medical services and medical practitioners acts provide that only registered medical practitioners may perform such services. At present, none of the legislation provides for midwives to be included as 'medical practitioners' and midwives may, therefore,

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be in breach of legislation by ordering and interpreting tests (which is routine practice in many public maternity services). This situation clearly needs clarification and resolution.

### **Current practice**

It was clear from both the Australian and international literature and from reports of clinical experience, that ordering of a limited range of tests and initiating the use of specified pharmacological substances by midwives is already common practice in many clinical settings, with midwives generally working under informal agreements for the care of women during uncomplicated pregnancy, labour, birth and the postnatal period.

### ***Recommendation 1***

***Australian public maternity services should formally acknowledge that midwives are already ordering and interpreting a limited range of tests and initiating the use of a limited range of pharmacological substances as part of routine midwifery practice for the care of women and babies during uncomplicated pregnancy, labour, birth and the postnatal period.***

***Evidence:*** *A review of national and international evidence and experience indicates that the midwifery services outlined above are often standard practice in public hospitals.*

### **Midwifery models of care**

Midwifery models of care were supported by recent reviews of birthing services in New South Wales, Victoria and Western Australia. In these models, the midwife is the primary care provider for women with uncomplicated pregnancy and childbirth, in collaboration with the medical team and with ready access to consultation and transfer if complications arise. These models of care were also promoted in the report *Options for Effective Care in Childbirth* (NHMRC 1996) as options that should be available for Australian women.

Overall, no evidence could be found to support objections to these collaborative midwifery services on the basis of safety for mother or infant. In the review of the evidence of midwifery models of care, the practices of midwives included varying (but often substantial) responsibilities for the ordering and interpreting of tests and the initiating of pharmacological substances.

The literature review conducted by the Working Party revealed no evidence of reduced safety associated with collaborative midwifery models of care. It

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concluded, that the ordering of a limited range of tests and the initiating of a specified range of pharmacological substances under agreed protocols should be considered safe practice, *as they are integral aspects of comprehensive midwifery care.*

### ***Recommendation 2***

***The practice of midwives ordering and interpreting a limited range of tests and initiating, under agreed protocols, the use of a limited range of pharmacological substances, should be supported as part of midwifery practice in Australian public maternity services for uncomplicated pregnancy, labour, birth, and postnatal care.***

***Evidence:*** *There is no evidence that collaborative midwifery models of care that include these practices have adverse impacts on health outcomes for women and babies. There is Level II, III and IV evidence<sup>1</sup> supporting safety. These practices are already commonplace in Australian public hospitals without any indication that they are unsafe, and they are common practices in many other countries with similar perinatal outcomes, when compared to Australia.*

### **Range of services**

Tests and pharmacological substances considered appropriate for midwives to order or initiate are those:

- which are considered to be supported by available evidence; and
- which currently form part of routine midwifery services for care during uncomplicated pregnancy, labour, birth and the postnatal period.

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1 See the Introduction (p. 11) for explanation of Levels of evidence ratings.

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### **Recommendation 3**

*The ordering and initiating rights of midwives, under agreed protocols, should be limited to tests and pharmacological substances, for which there is evidence of benefit for uncomplicated pregnancy, labour, birth and postnatal care. Currently, this includes the following tests/substances:*

			<b>Evidence of benefit</b>
Pregnancy (antenatal)	Tests	Routine blood tests as specified by the institution	Levels II, III-2 and III-3
		Mid-stream urine	Level I
		Cervical (Pap) smear	Level III-2
Labour and birth	Tests	Routine cord blood tests as specified by the institution	Level II
	Substances	Narcotic analgesia	Level IV
		Local anaesthetics	Level IV
		Nitrous oxide	Level IV
		Antiemetics	Level IV
		Oxytocics in third stage management	Level I
Postnatal	Tests	Neonatal screen ('heel prick')	Level III-2
		Cervical (Pap) smear	Level I
	Substances	Narcotic antagonist	Level IV
		Vitamin K	Level I

*Note:* The precise nature and dosage of the pharmacological substances and investigations should be determined by the institution.

**Evidence:** *Evidence from systematic reviews, randomised controlled trials and clinical opinion indicates that the tests and pharmacological substances listed above can be recommended for the routine care of women and babies during uncomplicated pregnancy and childbirth (Levels I-IV, see above). These procedures form part of existing models of collaborative midwifery care.*

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## **Education and competency**

The curricula of midwifery education courses for beginning level practitioners need to take account of responsibilities associated with ordering tests and initiating pharmacological substances, as outlined in Recommendations 2 and 3 above, so that midwives are adequately prepared to assume this role. Ongoing education and competency assessment for registered/endorsed midwives also need to be reviewed in light of the increased responsibilities for midwives.

### ***Recommendation 4***

*To ensure safe practice in the ordering and interpreting of a limited range of tests and initiating, under agreed protocols, a limited range of pharmacological substances, State/Territory authorities, in collaboration with relevant professional and educational bodies, should identify the educational preparation and assessment required on a national basis for:*

- *midwifery students; and*
- *registered/endorsed midwives wishing to practise in such collaborative models of midwifery care.*

*Consideration should also be given by professional bodies and institutions to the means, whereby ongoing competency will be determined, and the period of time for which midwives' certification should remain current, with due regard to the circumstances of midwives in rural areas.*

## **Procedures**

Individual public institutions offering maternity services will need to develop procedures to safely enable midwives to assume these responsibilities. These procedures will need to include an overall authorisation policy that takes account of all relevant legislation and specifies relevant conditions of employment, such as professional indemnity cover.

Agreed protocols for individual tests and pharmacological substances will also need to be developed by multidisciplinary teams of professionals, including midwifery, medical and pharmacy staff. Finally, clear guidelines will be needed to cover situations where test results obtained are outside the normal range and, therefore, indicate the need for referral to a medical practitioner.

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## ***Recommendation 5***

*In order to allow midwives to safely assume responsibility for ordering and interpreting a limited range of tests and initiating, under agreed protocols, the use of a limited range of pharmacological substances, institutions providing public maternity services, in collaboration with members of the midwifery, medical and pharmacy staff, should develop:*

- *policies authorising midwives to assume responsibility for ordering/ interpreting tests and initiating the use of a specified range of pharmacological substances;*
- *agreed protocols for these procedures; and*
- *guidelines for consultation and referral to a medical practitioner, in the event of an abnormal result to any test.*

## **Other considerations**

A number of other issues relating to ordering tests and initiating pharmacological substances were considered, as outlined in the Terms of Reference (Appendix A). With respect to cost implications, the Department of Health and Aged Care advised that, as long as these practices by midwives were contained within the public sector, there should not be significant cost implications for either institutional, State or Commonwealth budgets.

The impact on other primary care givers of introducing these changes to midwifery practice was considered. As midwives assume an increasing share of the responsibility for primary care for uncomplicated pregnancy and childbirth, this should enable medical teams in public hospitals to devote more care and attention to women with established or potential pregnancy problems. Further, this will enhance continuity of care in both the midwifery and conventional models.

Midwives assuming primary health care responsibilities associated with ordering and interpreting tests and initiating the use of pharmacological substances will require professional indemnity insurance cover. Institutions providing public maternity services should, therefore, ensure that such cover is available for midwives employed in the service.

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### ***Recommendation 6***

*Public maternity services, including birth centres and community and outreach settings, should confirm that professional indemnity insurance covers midwives ordering and interpreting a specified range of tests and the initiation, under agreed protocols, of the use of a specified range of pharmacological substances during uncomplicated pregnancy, labour, birth and postnatal care of mothers and babies.*

*Public maternity services should also confirm professional indemnity insurance for other health care providers which could arise from a negligent action of a midwife.*

### **Evaluation**

As with any change in health care provision, institutions have the responsibility to monitor the outcomes of any new services provided. Such monitoring may take the form of analysis of routinely collected data on health outcomes, or specific audit procedures.

### ***Recommendation 7***

*Institutions that incorporate midwifery models of care into mainstream maternity services should include audit mechanisms (as for other models of care) to evaluate the health outcomes of mothers and babies. This should include review by quality assurance committees with representation from management, midwifery staff, consumers and medical staff.*

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# CHAPTER 1

## INTRODUCTION

### **Background**

In November 1995, the NHMRC endorsed a report produced by the Expert Panel, namely *Options for Effective Care in Childbirth* (NHMRC 1996). However, in giving its endorsement, the NHMRC requested that two of the panel's draft recommendations (7.6 and 7.7) should be removed from the final report before publication and that the National Health Advisory Committee (NHAC) should further consider the issues contained in those recommendations.

The recommendations were:

*7.6 The Australian College of Midwives Incorporated, in collaboration with the Joint Committee on Maternity Services should investigate a mutually agreed education program designed to provide the skill and knowledge necessary for ordering and interpretation of a limited range of tests required for the assessment for normal pregnancy.*

*7.7 The Australian College of Midwives Incorporated, in collaboration with the Joint Committee on Maternity Services should investigate the feasibility of obtaining limited prescribing rights for midwives to prescribe a range of substances consistent with the care of normal pregnancy in healthy women.*

In 1996, NHAC established the Working Party to Review the Services Offered by Midwives. The Working Party included representatives from obstetrics, epidemiology, general practice, midwifery, health administration and the consumer movement. The full list of Working Party members and the Terms of Reference are shown in Appendix A. The Working Party was directed under the Terms of Reference to address issues of safety, cost and the impact on professional practice associated with the extended midwifery services under consideration and to be guided by the best available evidence.

A draft report was circulated for public consultation, including the 91 organisations and individuals who had previously responded to the public consultation of the NHMRC (1996) report *Options for Effective Care in Childbirth*. Peer review was also sought by the Working Party from a range of reviewers. Details of the report development process, public consultation and review process are given in Appendix B.

### **Scope of the review**

The focus of this report is on midwives employed by public hospitals, where midwifery models of care are being increasingly introduced, in response to community request. These midwives may work in a public hospital itself or in an outreach or community setting. Whichever of these models applies, publicly

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employed midwives should have agreed protocols to follow and employment conditions, which are determined by the public hospital concerned.

The recommendations contained in this report could be extended to midwives employed in other settings, providing that the cost implications and issues relating to indemnity and legislation are addressed. Consideration was given, for example, to visiting midwives who are accredited by the Australian College of Midwives Incorporated, and have admitting privileges granted by the institution to which they are attached. However, unless otherwise stipulated, for the remainder of this document, reference will be made only to midwives working in the public hospital system and who, therefore, have contracts of employment with the hospitals concerned.

Variations currently exist between States and Territories in the legislative arrangements governing the ordering of tests and prescribing of drugs by midwives (see Chapter 2). Moreover, the relevant legislation is currently being reviewed in some States (eg NSW, SA and Queensland), with amendments pending. In view of these variations, the Working Party decided to restrict its considerations regarding midwives' extended involvement with the ordering of drugs and medications ('pharmacological substances'), to 'initiating' the use of such pharmacological substances under agreed protocols, rather than 'prescribing' *per se*.

## **Literature review**

The Working Party sought evidence from both the national and international literature and from clinical experience, particularly systematic reviews of the literature, which usually include meta-analyses of the results of randomised controlled trials such as those published in the Cochrane Collaboration *Database of Systematic Reviews* (Cochrane Library). The Report of the United States Preventive Services Task Force (1996) *Guide to Clinical Preventive Services* was also used to obtain evidence particularly for effectiveness of routine tests.

All randomised controlled trials comparing midwifery models of care with conventional models of care were identified and reviewed. In reviewing these sources, it became apparent that the ordering of tests and 'prescribing' or initiating of pharmacological substances by midwives, had not been addressed specifically in clinical trials. Rather, the randomised controlled trials report evidence on the outcomes of midwifery practice within which were included an unspecified range of responsibilities for the ordering of tests and prescribing of medications by midwives. Therefore, it was not possible to separate the assessment of the impact of these specific practices from the overall package of care contained within the midwifery models. Personal communication with the authors of two of the trials

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(Waldenstrom et al 1997 and Turnbull et al 1996) confirmed that there is currently no high level evidence in the literature that addresses these practices, nor is it likely that they will be considered for evaluation by randomised controlled trial methodology.

Given these circumstances, the Working Party agreed that the best available evidence to guide practice is that which comes from high quality randomised trials and systematic reviews of issues closest to the ones under consideration. Wherever possible, such sources have been used to guide these recommendations. However, when this type of evidence was not available it was necessary to draw upon expert opinion and clinical experience. Where necessary, the level of evidence used is indicated in the recommendations using a four-point rating scale based on a system developed by the United States Preventive Services Task Force and adapted for use in Australia by the NHMRC (1995), as shown below.

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### **Levels of evidence ratings**

- Level I** Evidence obtained from a systematic review of all relevant randomised controlled trials.
- Level II** Evidence obtained from at least one properly designed randomised controlled trial.
- Level III-1** Evidence obtained from well-designed controlled trials without randomisation.
- III-2 Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one centre or research group.
- III-3 Evidence obtained from multiple time-series with or without the intervention. Dramatic results from uncontrolled experiments (such as the results of the introduction of penicillin treatment in the 1940s) could also be regarded as this type of evidence.
- Level IV** Represents the opinions of respected authorities based on clinical experience, descriptive studies or reports of expert committees.

Level I evidence represents the 'gold standard' in terms of demonstrated effectiveness of health care interventions. However, this does not mean that treatments based on other levels of evidence are not useful in some circumstances.

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## CHAPTER 2

### CURRENT PRACTICE

#### **International midwifery practices**

International practices relating to midwives ordering tests and prescribing or initiating pharmacological substances were systematically explored. A form listing the basic tests and pharmacological substances administered during pregnancy, labour, birth and the postnatal period was sent to selected countries to determine the variation in midwifery practice in these respects. The countries selected were only those with cultural similarities to Australia, in which midwifery is well established. The sample is, therefore, not representative of all developed countries. The forms were sent to national colleges of midwives (New Zealand, Denmark, Norway, Sweden, Switzerland) and to leading national representatives of midwifery (England, The Netherlands, United States). The findings are summarised in Table 1.

Not surprisingly, variations were identified between countries in the extent to which midwives are authorised to prescribe or initiate pharmacological substances and order tests. Variations were also identified between what is authorised and what is practised (which is often the case for Australian midwifery practice, see below). The situation in New Zealand appears to be very different from that in Australia, in that midwives are authorised and indemnified to order tests and prescribe pharmacological substances for the total care of women and babies during uncomplicated pregnancy and childbirth. The practice in Australian hospitals may, in fact, be similar but without such authorisation or indemnification.

#### **Australian midwifery practices**

The extent to which the practices of ordering tests and 'prescribing' pharmacological substances occurs in Australia was systematically addressed. It is clear that in many Australian public maternity hospitals, midwives currently order and interpret routine diagnostic tests during pregnancy, labour, birth and postnatal care. They also administer pharmacological substances that have not yet been prescribed or signed for by a medical practitioner. Current midwifery practice in many hospitals can be at variance with State/Territory legislation, raising the possibility of difficult legal implications, both for the midwives and the medical staff involved. This situation needs to be clarified by appropriate hospital committees and, if necessary, backed up by legislative amendments.

#### **Legislation**

There is currently considerable variation between the legislation of each State/Territory but, essentially, two types of legislation are involved. The first covers the possession, prescription, supply and administration of drugs and poisonous

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substances, eg *Poisons and Therapeutic Goods Act 1966* (NSW); *Drugs, Poisons and Controlled Substances Act 1981* (Vic); and *Controlled Substances Act 1984* (SA). Some States also have specific legislation covering pharmacy practice, eg *Pharmacy Act 1964* (WA). The second type of legislation covers the activities of medical practitioners and other aspects of health service provision, eg *Medical Treatment Act 1988* (Vic); *Medical Act 1939* (Qld); *Medical Practitioners Act 1930* (ACT); and *Nurses Act 1984* (SA).

In order to legitimise the widely accepted practices of midwives initiating certain drugs, changes are needed to both types of legislation. For ordering and interpreting tests, amendments may be needed to relevant legislation that currently restricts these activities to medical practitioners. The Working Party sought advice on the current legislative arrangements and recognised that they are rapidly changing. As far as the Working Party was aware at the time of publication of this report, the main legislation and/or policies that may affect midwifery practices in each State/Territory are shown in Appendix C.

Care is needed in comparing legislation between States/Territories because there is inconsistency in the terminology used. For example, nitrous oxide is described as a 'restricted drug' in Queensland, a 'poison' in the Australian Capital Territory, a 'volatile solvent' in South Australia and a Schedule 4 (S4) drug in the Northern Territory. Similarly, terms such as 'supply', 'administer' and even 'prescribe' are not always used consistently and require careful definition (see Glossary).

### ***Recommendation 1***

***Australian public maternity services should formally acknowledge that midwives are already ordering and interpreting a limited range of tests and initiating the use of a limited range of pharmacological substances as part of routine midwifery practice for the care of women and babies during uncomplicated pregnancy, labour, birth and the postnatal period.***

***Evidence:*** *A review of national and international evidence and experience indicates that the midwifery services outlined above are often standard practice in public hospitals.*

### **Prescribing drugs**

In the context of this report, 'prescribing' means the initiation and supply of drugs by practitioners acting entirely in their own right as professionals, ie not acting under any protocols or orders. See Glossary for definition of 'supply', 'administer' and other terms.

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In general, the legislation covering the prescribing, administration and supply of drugs only allows these activities to be carried out by medical practitioners, dentists and veterinary surgeons (and pharmacists for dispensing).

Nevertheless, in some States amendments have already been made to broaden the scope of such legislation to allow midwives to *initiate* (but not 'prescribe' in the full sense given above) the use of medications in some circumstances. Table 2 shows a summary of some of the existing legal authorities and restrictions affecting midwifery practice in these States. In New South Wales, new legislation (the *Poisons Amendment (Therapeutic Goods) Act 1996 No. 2*, updated July 1996) has greatly simplified the provisions of the *Poisons and Therapeutic Goods Act 1966* and extends the category of persons able to supply certain drugs to those authorised by the Director General. Under this new legislation authorisations have been given for registered nurses in public hospitals to initiate and administer S2 and S3 drugs, while S4 drugs can be initiated under orders (which can be either protocols developed by institutions or standing orders from a medical practitioner).

In Victoria, Queensland and the Australian Capital Territory, there are currently no legal provisions covering prescribing or initiating the use of drugs by midwives. In Victoria, the Nurses Board has recently accepted a *Code of Practice for Midwives in Victoria* (Nurses Board of Victoria 1996) to replace the previous Midwives Regulations 1985. This Code gives midwives wide-ranging responsibilities for the care of women and babies during pregnancy and childbirth, but does not specifically mention prescribing drugs.

In Tasmania, the legislation was amended in 1993 in an attempt to legitimise the role of midwives in initiating a limited range of drugs under orders from a medical practitioner (see Table 3 for details). As with most other States, the authority for the prescription and administration of drugs in Tasmania is provided by the *Poisons Act 1971* with general provisions covered by the Poisons Regulations 1975. The Regulations were amended in 1993 to allow for the administration of drugs by midwives under certain conditions. The amended Regulations provide that a medical practitioner may issue an order to the Director of Nursing of a hospital authorising midwives in that hospital to administer any drugs specified in the order to a patient of that medical practitioner. Details of the drugs that are allowed to be administered under this legislation are shown in Table 3.

**Table 1 Midwives' rights to order tests and prescribe pharmacological substances, by country<sup>a</sup>**

	Midwife responsible <sup>b</sup>	Agreed protocol <sup>c</sup>	Doctor-led <sup>d</sup>	Doctor responsible <sup>e</sup>
<b>Pregnancy (antenatal)</b>				
Pregnancy test	1,3,5,6,8,9,10			4
Haemoglobin	1,2,3,5,6,7,8,9	6	4,10	4
Blood group	1,2,3,7,8,9	5,6	10	4
Antibodies (rhesus)	1,2,3,7,8,9	5,6	10	4
Rubella	1,2,3,7,8,9	5,6	10	4
HIV	1,2,3,7,8,9	5,6	10	4
Hepatitis B	1,2,3,7,8,9	5,6	10	4
Urine stix	1,2,3,4,5,6,7,8,9,10			
Mid-stream urine	1,2,3,6,7,8,9	5,6	4,10	4
Cervical (Pap) smear	1,3,9	6,7,10	5,6,7	2,4,5,10
Glucose tolerance test	1,3,8,9	6	2,5,10	4,5
Ultrasound (routine)	1,3,7,8,9	4,5,6	4	2,4,10
Ultrasound (individual)	1,3,6,8,9	2,6	4,5,7	2,4,5,6,10
Iron supplement	1,3,4,5,6,7,8,9,10	2,6		4
<b>Labour and birth</b>				
Blood group (cord)	1,2,3,6,7,8,9	4,6	5,10	
Pethidine	1	2,5,6,8,9	4,7,10	3
Naloxone	1,7	2,5,6,8,9		3
Local anaesthetic for suturing	1,3,6	2,4,5,6,8,9		7,10
Pudendal block	6	4,5,6,8,9		1,2,3,7,10
Paracervical block		6	6	1,2,3,4,6,7,10
Epidural	1	5		2,3,4,6,7,9,10
Topping up an epidural		1,5,6	1,2,4,6,7,10	1,3,4,9
Nitrous oxide + oxygen	1,2,5,6,10	4,6		3
Oxygen	1,2,3,4,5,6,7,8,9,10	4,6		
Oxytocin (augmentation)	7	2,4,5,9	1,2,4,6,7,10	3
Oxytocin (post partum)	1,3,4,7	2,4,5,6,8,9,10	4,7	

a Country codes: 1 = New Zealand; 2 = England; 3 = Holland; 4 = Denmark; 5 = Norway; 6 = Sweden; 7 = Switzerland; 8 = USA (birth centre); 9 = USA (general); 10 = Australia (Royal Women's Hospital, Melbourne).

b Agreed protocol not necessary.

c Responsibility delegated to midwife; doctor's signature not necessary.

d Doctor makes decision in individual cases, signs orders and prescriptions, but midwife administers procedure.

e Doctor orders tests/prescribes pharmacological substances; doctor or laboratory technician administers procedure.

**Table 1 Midwives' rights to order tests and prescribe pharmacological substances, by country<sup>a</sup> (continued)**

	<b>Midwife responsible<sup>b</sup></b>	<b>Agreed protocol<sup>c</sup></b>	<b>Doctor-led<sup>d</sup></b>	<b>Doctor responsible<sup>e</sup></b>
<b>Postnatal</b>				
Neonatal screening test ('heel prick')	1,2,3,4,7,8,10	5,6,9		
Blood glucose (baby)	1,2,3,7,8	5,6,9,10	6	4
Bilirubin	1,2,3,7	5,7,9	3,6,10	4
Vitamin K	1,3,4,7,10	5,6,8,9	2	
Contraceptive pill	1,6,9	5	2,7	3,4,10

a Country codes: 1 = New Zealand; 2 = England; 3 = Holland; 4 = Denmark; 5 = Norway; 6 = Sweden; 7 = Switzerland; 8 = USA (birth centre); 9 = USA (general); 10 = Australia (Royal Women's Hospital, Melbourne).

b Agreed protocol not necessary.

c Responsibility delegated to midwife; doctor's signature not necessary.

d Doctor makes decision in individual cases, signs orders and prescriptions, but midwife administers procedure.

e Doctor orders tests/prescribes pharmacological substances; doctor or laboratory technician administers procedure.

**Table 2 Examples of existing legal authorities for midwives (nurses) to initiate drug treatment**

State	Legislation	Authority	Practitioner	Type of drug	Restrictions
NSW	Poisons and Therapeutic Goods Act 1966 (amended in 1996)	initiate and administer	nurses (including midwives) in public hospitals	S2 and S3 <sup>a</sup>	
		administer	nurses in community health services	'non-prescription' medication without doctor's authorisation	must follow written protocols
		initiate and administer	nurses (including midwives)	S4 and S8 <sup>a</sup>	under protocols from institution or standing orders from medical practitioner
WA	Poisons Regulations 1965 (amended in 1994)	dispense or supply	remote area nurses only (under orders)	poisonous or hazardous drugs	not psychoactive drugs
SA	Nurses Act 1984 <sup>b</sup>	initiate	nurses (includes midwives)	S4 and S8 <sup>a</sup> drugs (includes pethidine and oxytocin)	Cannot be dispensed by pharmacists outside hospitals
TAS	Poisons Regulations 1975 (amended in 1993)	initiate and administer	nurses working in hospitals only (under orders)	specified <sup>c</sup>	specified <sup>c</sup>

a Refers to drugs listed in Schedules 2,3,4 and 8 of the Standard for Uniform Scheduling of Drugs and Poisons (Australian Health Ministers' Council, NHMRC; see Appendix D).

b New legislation is currently before parliament.

c For further details see Table 3.

Source: State/Territory authorities; legal information supplied to NHMRC by Minter Ellison Northmoor Hale, Lawyers 1996; and information from the Australian Pharmaceutical Advisory Council.

**Table 3 Pharmacological substances legislated for administration by midwives under general orders in Tasmania**

<b>Drug</b>	<b>Number of doses</b>	<b>Maximum dose</b>	<b>How given</b>	<b>Other</b>
Ergometrine	1	0.5 mg	intramuscular	after birth
Metoclopramide	1	10 mg	intramuscular	
Morphine	1	5 mg	intramuscular	
Oxytocin	1	10 iu <sup>a</sup>	intramuscular/ intravenous	after birth
Pethidine	1	50 mg	intravenous/ intramuscular	
Pethidine	1	100 mg	intramuscular	
Promethazine	2	25 mg	intramuscular	
Naloxone	1	0.02 mg	intramuscular	neonatically

a The abbreviation *iu* stands for international units.

### **Ordering and interpreting tests**

There appears to be no legislation in any State/Territory that specifically regulates the ordering and interpretation of diagnostic tests. However, the various medical, medical treatment and medical practitioner acts (see Appendix C) provide that only registered medical practitioners may perform a medical service for fee or reward. 'Medical services' are not defined to specifically include the ordering/interpretation of tests but legal opinion favours this interpretation (Minter Ellison Northmore Hale, Lawyers, legal advice, 1996). At present, none of this legislation provides for midwives to be included as 'medical practitioners' and midwives may therefore be in breach of these legislative arrangements by ordering and interpreting tests (which is routine practice in many public maternity services). The *Code of Practice for Midwives in Victoria* (Nurses Board of Victoria 1996) makes no specific reference to ordering/interpreting tests.



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## CHAPTER 3

### MIDWIFERY MODELS OF CARE

Midwifery models of care were supported by recent reviews of birth services in New South Wales, Victoria and Western Australia (NSW Health 1989, Victorian Health Department 1990, WA Health Department 1990). In these models, the midwife is the primary care provider for women with an uncomplicated pregnancy, in collaboration with the medical team and with ready access to consultation and transfer if complications arise. These models of care were also promoted in the report *Options for Effective Care in Childbirth* (NHMRC 1996) as options that should be available for Australian women.

For public maternity services, midwifery models of care include services such as midwifery antenatal clinics (either in a maternity unit in hospital or in a community setting), birth centres (in-hospital or free-standing) and different models of team midwifery, in which a group of midwives provide continuity of care to a caseload of women during pregnancy, labour, birth and the postnatal period, within standard maternity settings. In all these models, the midwife is the primary care provider for women with uncomplicated pregnancies, in collaboration with the medical team. In uncomplicated pregnancies, women see a doctor (obstetrician or general practitioner) for medical review, one to three times during the antenatal period. If complications arise, women are referred for further medical consultation, or care may be completely transferred to the medical practitioner. Midwives attend women with uncomplicated labour and birth and consult with, or transfer to, a medical practitioner when complications arise. Continuity of care is an important feature of some of these models (birth centres and team midwifery in standard care). Beside these models, midwives practise in collaborative arrangements with the medical staff within hospitals and community settings, and with varying degree of involvement in women's care.

#### **Effectiveness of midwifery care**

Evidence from national and international randomised controlled trials suggests that midwifery care of the kind outlined above does not have an adverse impact on the health outcomes of women and babies when compared with conventional care. In addition, there is Level I evidence of an associated benefit reflected in women's greater satisfaction with midwifery care (Hodnett 1996).

Following an evaluation of ten small pilot programs in New South Wales, one of which assessed an extended midwifery role at Shoalhaven Hospital, the *NSW Nurse Practitioner Final Report* concluded that nurse (or midwife) practitioners 'be recognised, on the basis of feasibility, safety and effectiveness as legitimate providers of health services in New South Wales' (NSW Health 1996b).

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No randomised controlled trials have been conducted (or are likely to be considered feasible) that evaluate specifically the midwifery practices of ordering tests and 'prescribing' pharmacological substances. However, several studies have been published during the last 25 years on midwifery care more generally, mainly in relation to alternative models of care, such as birth centres, as discussed in *Options for Effective Care in Childbirth* (NHMRC 1996, pp 23-24). Many of these studies are descriptive, but an increasing number of randomised controlled trials have been published during the last eight years, making it possible to draw valid conclusions about related outcomes for midwifery care during uncomplicated pregnancy compared to conventional (obstetrician-led) care. The most significant of these studies are described below.

### **Randomised trials comparing midwifery models of care with conventional care**

1. The Cochrane systematic review on this topic titled *Continuity of caregivers during pregnancy and childbirth* was conducted by Professor Ellen Hodnett in March 1996, and has not been updated since. This review includes two trials (Flint et al 1989 and Rowley et al 1995) details of which are described below. The results of the meta-analysis indicated a range of short-term beneficial outcomes for women allocated to midwifery models of care. Both trials had higher perinatal mortality rates in the midwifery models than in conventional care, but this was not statistically significant. The review called for further research by randomised trials to further evaluate a range of outcomes on safety and satisfaction with models of care, in which continuity of care is provided (Hodnett 1988). Such trials are underway in Australia and elsewhere.
2. The first 'team midwifery' trial, which was reported from London (Flint et al 1989) compared a team of four midwives providing continuity of care to 478 women from early pregnancy to the postnatal period, with conventional care provided to 471 women by doctors and midwives. Continuity of care, as well as satisfaction with care was higher in the midwife team group, waiting times were shorter, interventions were used less frequently (augmentation, analgesia, episiotomy), and no statistically significant differences were observed in maternal and neonatal outcomes.
3. An Australian study of 89 pregnant women (Giles et al 1992) compared antenatal care provided to low-risk women by midwives with conventional antenatal care. The aim of the trial was to study costs and patient satisfaction. The routine procedures regarding ordering of tests were not specified. The results showed lower costs and higher satisfaction in the midwifery group than in the group receiving conventional antenatal care.

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4. A large trial of 3,510 women in the United Kingdom compared midwife managed care during pregnancy, labour and birth with conventional care (MacVicar et al 1993). There were no statistically significant differences between the groups in health outcomes or in the mode of delivery. Some interventions were used less frequently in midwifery care (induction, augmentation of labour, cardiotocography, episiotomy, analgesia) and first stage labour was longer. Women receiving midwifery care were more satisfied than women receiving conventional care. A separately published cost analysis (Hundley et al 1995) indicated that although the intrapartum costs of midwives caring for women at low obstetric risk were similar to the costs of conventional care, the impact of establishing a separate midwifery-managed delivery unit, requiring an increase in midwifery staffing levels, can be significant. However, the model of care considered by this Working Party is collaborative care within standard maternity settings, and not the establishment of separate units.
  5. A trial undertaken in Scotland (Hundley et al 1994) randomly allocated 2,844 women to either midwife managed care during pregnancy, labour and birth, or to conventional care. The midwifery care was associated with fewer interventions (cardiotocography, analgesia, episiotomy) and no statistically significant differences were observed in the duration of labour, operative delivery rates and neonatal mortality.
  6. An Australian trial (Rowley et al 1995) randomly allocated 814 low and high-risk women to either a team of six midwives providing continuity of care, or to conventional care from a variety of doctors and midwives. The NHMRC guidelines for antenatal care and schedule visits were followed for all women in the trial. No statistical differences were observed in the rate of operative deliveries, episiotomies, inductions or epidural anaesthesia. However, the number of births with no interventions was higher in the team care. Women were more satisfied with team care and it was associated with lower costs.
  7. In a Scottish trial (Turnbull et al 1996) 1,299 pregnant women were randomly allocated to receive either midwife-managed care during pregnancy, labour, birth and the postnatal period, or conventional shared care. Interventions were similar in the two groups or lower with midwife-managed care (induction, cardiotocography, episiotomy), and infant and maternal outcomes were similar. Women in midwife-managed care were more satisfied with the care they received.

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8. In a controlled trial in Sweden (Waldenstrom et al 1997, Waldenstrom and Nilsson 1997) 1,860 women were randomised to either birth centre care (autonomous midwifery care) or conventional midwifery-led care (collaborative midwifery care). There were no statistically significant differences in health outcomes, or in the rate of operative deliveries, epidural anaesthesia and episiotomies, but less of some other interventions (cardiotocography, induction, augmentation of labour, analgesia) in the birth centre group compared with conventional care. Women in the birth centre group were more satisfied with care, especially with antenatal care. Sixty-three per cent said antenatal care had raised their self esteem compared with 18 per cent in conventional care.
  9. In an unpublished trial from New South Wales, Kenny et al (1994) randomly allocated 446 women at low and high risk to midwife-managed care during pregnancy, labour, birth and the postnatal period with medical backup, or to conventional public hospital care. Intervention rates were similar (induction, augmentation, epidural, narcotics, caesarean section), but instrumental vaginal deliveries were less frequent in the team midwifery group. There was no difference in perinatal mortality. Satisfaction with care was greater in the team midwifery group than in conventional care. A cost analysis indicated that overall, the costs of the team midwifery program and conventional care were similar.

In summary, these trials (which involved a range of practices by midwives) showed that, overall, women are more satisfied with models of care with extended responsibilities for midwives compared with conventional care, and medical interventions usually were used less frequently. The extent to which midwives in these trials ordered tests and prescribed medications was often not stipulated, but it can be assumed that there was a substantial degree of autonomy in such practices in these trials. None of the trials had sufficient power to draw conclusions about mortality, although they indicate that the midwifery models were as safe as routine care (Level II); meta-analysis of these results is problematic because of differences in the care provided in both the 'alternative' and 'conventional' forms of care.

### **Ordering tests and initiating the use of pharmacological substances**

The practices of ordering tests and initiating the use of pharmacological substances were not specifically addressed in the studies described above. However, such practices form part of the overall package of midwifery care in the new models being evaluated, compared to the control groups of conventional care.

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There is, therefore, no evidence from the literature or from current international and Australian practice (see Chapter 2) to indicate that there is any adverse effect on patient care, resulting from midwives assuming the responsibility of initiating, under agreed protocols, the use of a limited range of pharmacological substances and ordering and interpreting routine tests during uncomplicated pregnancy and childbirth and the postnatal period.

Both the *NSW Nurse Practitioner Project: Final Report* (NSW Health 1996b) and the *NSW Midwifery Taskforce: Final Report* (NSW Health 1996a) included recommendations endorsing the development of policies to authorise nurse practitioners to order and interpret a limited range of tests and to prescribe a limited range of medications.

### ***Recommendation 2***

***The practice of midwives ordering and interpreting a limited range of tests and initiating, under agreed protocols, the use of a limited range of pharmacological substances, should be supported as part of midwifery practice in Australian public maternity services for uncomplicated pregnancy, labour, birth, and postnatal care.***

***Evidence:*** *There is no evidence that collaborative midwifery models of care that include these practices have adverse impacts on health outcomes for women and babies. There is Level II, III and IV evidence supporting safety. These practices are already commonplace in Australian public hospitals without any indication that they are unsafe, and they are common practices in many other countries with similar perinatal outcomes, when compared to Australia.*



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## CHAPTER 4

### SCOPE OF EXTENDED MIDWIFERY SERVICES

#### **Routine care during uncomplicated pregnancy and childbirth**

The role of the midwife is usually to provide care for women and babies during uncomplicated pregnancy, labour, birth and the postnatal period. The procedures followed during this time, including initiating the use of pharmacological substances and ordering and interpretation of tests, should therefore be consistent with the care of healthy women having uncomplicated pregnancies and, wherever possible, be confined to procedures for which there is sound evidence of effectiveness. As discussed in Chapter 2, several of the procedures that fall into this category are frequently ordered and interpreted or initiated as part of routine midwifery care in public hospitals.

#### **Care during the antenatal period**

During the antenatal period the routine tests considered beneficial in uncomplicated pregnancy are as follows with their respective levels of evidence (United States Preventive Services Task Force 1996):

- blood tests including haemoglobin and full blood count (Level III-2), blood group and antibody screen (Level I), screening for syphilis (Level III-3), hepatitis B (Level II), rubella (Level III-2) and other tests specified by the institution;
- mid-stream urine (Level I); and
- cervical (Pap) smear (Level III-2).

The Working Party agreed that, on the basis of available evidence, routine ultrasound, cardiotocography, blood glucose screening and group B streptococcus screening cannot be generally recommended as part of standard care, whether by midwives or medical practitioners (United States Preventive Services Task Force 1996). Midwives should therefore not be authorised to order these tests. However, it was acknowledged that if local circumstances such as geographic isolation or working with specific populations at risk should indicate, then appropriately educated midwives may, under these circumstances, be authorised to order these tests.

#### **Care during labour and birth**

A number of pharmacological substances are used as part of routine care during labour, including narcotic analgesics (such as pethidine, although its use is diminishing), or inhalational nitrous oxide for pain relief, local anaesthetics, antiemetics and oxytocic drugs (in third stage). The effectiveness of prophylactic oxytocin for the third stage of labour is well established (Level I; systematic

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review by Prendiville et al 1997). The evidence for the effectiveness of the pharmacological methods of pain relief is based on descriptive studies, extensive experience and expert opinion (Level IV).<sup>2</sup>

Routine cord blood tests such as haemoglobin, blood group and antibody screen, are based on Level II evidence (United States Preventive Services Task Force 1996).

### **Postnatal care**

Pharmacological substances routinely used after the birth for the care of the mother or newborn infant include, Vitamin K (Level I; systematically reviewed in Sinclair and Bracken 1992) and narcotic antagonists (Level IV). The postnatal tests undertaken by midwives are cervical (Pap) smear (Level I) and the neonatal screening ('heel prick') test for phenylketonuria, cystic fibrosis, hypothyroidism and galactosaemia (Level III-2) (United States Preventive Services Task Force 1996).

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<sup>2</sup> There is also some Level IV evidence indicating adverse effects of narcotic analgesia and local anaesthetics on mothers and babies, but these agents are still used as part of routine care during uncomplicated labour and birth.

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### **Recommendation 3**

*The ordering and initiating rights of midwives, under agreed protocols, should be limited to tests and pharmacological substances, for which there is evidence of benefit for uncomplicated pregnancy, labour, birth and postnatal care. Currently, this includes the following tests/substances:*

			<b>Evidence of benefit</b>
Pregnancy (antenatal)	Tests	Routine blood tests as specified by the institution	Levels II, III-2 and III-3
		Mid-stream urine	Level I
		Cervical (Pap) smear	Level III-2
Labour and birth	Tests	Routine cord blood tests as specified by the institution	Level II
	Substances	Narcotic analgesia	Level IV
		Local anaesthetics	Level IV
		Nitrous oxide	Level IV
		Antiemetics	Level IV
		Oxytocics in third stage management	Level I
Postnatal	Tests	Neonatal screen ('heel prick')	Level III-2
		Cervical (Pap) smear	Level I
	Substances	Narcotic antagonist	Level IV
		Vitamin K	Level I

*Note:* The precise nature and dosage of the pharmacological substances and investigations should be determined by the institution.

**Evidence:** *Evidence from systematic reviews, randomised controlled trials and clinical opinion indicates that the tests and pharmacological substances listed above can be recommended for the routine care of women and babies during uncomplicated pregnancy and childbirth (Levels I-IV, see above). These procedures form part of existing models of collaborative midwifery care.*



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## CHAPTER 5

### PROCEDURES TO ENSURE SAFETY

#### **Educational requirements**

Consideration needs to be given to the education programs required to adequately prepare midwives to safely order and interpret specified tests and to initiate the use of specified pharmacological substances during the care of women and babies experiencing uncomplicated pregnancy and childbirth.

While some current midwifery curricula do address these topics, assistance is required from all universities and hospitals who conduct education programs for the preparation of midwives, to ensure that these programs include the necessary educational requirements.

Ongoing education and assessment programs will also be required to ensure that competency standards are maintained amongst qualified midwives.

#### ***Recommendation 4***

*To ensure safe practice in the ordering and interpreting of a limited range of tests and initiating, under agreed protocols, a limited range of pharmacological substances, State/Territory authorities, in collaboration with relevant professional and educational bodies, should identify the educational preparation and assessment required on a national basis for:*

- *midwifery students; and*
- *registered/endorsed midwives wishing to practise in such collaborative models of midwifery care.*

*Consideration should also be given by professional bodies and institutions to the means, whereby ongoing competency will be determined, and the period of time for which midwives' certification should remain current, with due regard to the circumstances of midwives in rural areas.*

#### **Institutional procedures**

Individual public institutions offering maternity services should develop procedures to enable midwives to assume their responsibilities safely. These will need to include policies on a number of different levels. Firstly, an overall policy will be required to authorise midwives employed in the service to take responsibility for ordering and interpreting specified tests and initiating the use of specified pharmacological substances, as part of their responsibilities during the care of women and babies during uncomplicated pregnancy and childbirth. Such policies need to take account of all relevant legislation and specify conditions of employment, including professional indemnity cover.

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Secondly, agreed protocols will need to be prepared that are specific for each test and pharmacological substance, for which midwives will be taking responsibility. These protocols will need to be developed by multidisciplinary teams of midwifery, medical and pharmacy staff.

Finally, clear guidelines will be required to cover the situation, where test results obtained fall outside the normal range and indicate the need for referral to a medical practitioner.

### ***Recommendation 5***

*In order to allow midwives to safely assume responsibility for ordering and interpreting a limited range of tests and initiating, under agreed protocols, the use of a limited range of pharmacological substances, institutions providing public maternity services, in collaboration with members of the midwifery, medical and pharmacy staff, should develop:*

- *policies authorising midwives to assume responsibility for ordering/interpreting tests and initiating the use of a specified range of pharmacological substances;*
- *agreed protocols for these procedures; and*
- *guidelines for consultation and referral to a medical practitioner, in the event of an abnormal result to any test.*

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## CHAPTER 6

### OTHER CONSIDERATIONS

#### **Legal implications and indemnity**

If the scope of practice under consideration is restricted to midwives practising within public maternity services, the recommendations in this report merely legitimise current standard midwifery practice in that ordering tests and initiation of the use of a range of specified pharmacological substances are now a standard (but only informally authorised) part of midwifery practice. Midwives should, therefore, be indemnified by their employers for these responsibilities, as outlined in Recommendations 2 and 3.

In considering the legal implications, the *NSW Nurse Practitioner Project Final Report* (NSW Health 1996b) recommended that nurse practitioners working in the public maternity system have their indemnity confirmed by the institution, and should not be required to carry other private professional indemnity insurance. The report further stated that nurse practitioners working outside such arrangements 'be required to carry professional indemnity insurance and that evidence of such insurance should be a requirement of appointment to such positions [outside the public maternity system]'. Such arrangements would also apply to independently practising midwives but this was not considered further for this review.

#### **Recommendation 6**

*Public maternity services, including birth centres and community and outreach settings, should confirm that professional indemnity insurance covers midwives ordering and interpreting a specified range of tests and the initiation, under agreed protocols, of the use of a specified range of pharmacological substances during uncomplicated pregnancy, labour, birth and postnatal care of mothers and babies.*

*Public maternity services should also confirm professional indemnity insurance for other health care providers which could arise from a negligent action of a midwife.*

#### **Cost-effectiveness**

There is limited evidence from the literature based on analyses, of the cost-effectiveness of alternative models of pregnancy care. However, three randomised controlled trials performed in Australia (Giles et al 1992, Kenny et al 1994, Rowley et al 1995) have indicated that team midwifery care was of comparable cost to conventional care. These analyses included the cost implications of midwives ordering tests and prescribing medications for uncomplicated pregnancy and childbirth care.

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Consideration was given to the financial implications if midwives no longer required the endorsement of a medical practitioner for ordering the above-named tests and pharmacological substances. It was determined that there should be no cost impact on public patients arising from midwives ordering tests. Further, it is considered that there should be no additional tests ordered or pharmacological substances initiated as the type and frequency will be determined, as part of the relevant agreed protocols.

Importantly, it was acknowledged that the expansion of midwives' responsibility to order a limited range of tests, instead of these same tests being ordered by medical practitioners, should not result in any increased costs.

### **Effect on other aspects of medical practice**

Review of the literature and evidence of current practice show that responsibilities for ordering of tests and initiating drugs have been widely assumed by midwives in Australian hospitals. Consequently, if implemented, the recommendations in this report will regularise and authorise current midwifery practice.

The implications of these midwifery practices on other aspects of health and medical practice cannot be considered in isolation from the overall impact of the introduction of the midwifery models of care as an alternative to conventional care. Specifically, the ordering of these tests and initiation under agreed protocols of these pharmacological substances will enable midwives in public hospital practice to assume responsibility for comprehensive care during uncomplicated pregnancy, childbirth and the postnatal period.

The concept of midwifery models of care, as a safe and effective childbirth option (along with other forms of care) for Australian women and their families, has already been approved by the NHMRC when it endorsed *Options for Effective Care in Childbirth* (NHMRC 1996). The endorsement of these two further items will enable midwifery models of care to become a realistic option for Australian childbearing women and their families.

Further, within the setting of public maternity services, increasing the responsibility of midwives in this way should contribute to the productivity of medical practitioners, enabling them to devote more time to complicated cases and emergencies. It should also improve overall continuity of care for women with uncomplicated pregnancies while increasing consumer satisfaction, allowing midwives to develop further expertise.

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## **Evaluation**

In the event of the endorsement of midwife responsibilities for ordering tests and initiating the use of pharmacological substances, the impact on maternal and infant outcomes (eg safety and satisfaction) will need to be monitored. There is sufficient evidence from both international and national literature and experience to justify support for the introduction of midwifery models of care. However, programs within hospitals will need to be audited by monitoring standard parameters of safety and satisfaction, such as those applied to conventional care in public maternity units. These parameters include perinatal mortality and morbidity review, monitoring of obstetric interventions such as operative delivery, episiotomy and postnatal complications such as haemorrhage and breastfeeding difficulties.

### ***Recommendation 7***

*Institutions that incorporate midwifery models of care into mainstream maternity services should include audit mechanisms (as for other models of care) to evaluate the health outcomes of mothers and babies. This should include review by quality assurance committees with representation from management, midwifery staff, consumers and medical staff.*



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## APPENDIX A

### WORKING PARTY MEMBERSHIP AND TERMS OF REFERENCE

#### Working Party

Dr James King (Chair)	Obstetrician/perinatal epidemiologist
Dr Syd Allen	Medical administrator/obstetrician
Ms Gail Batman	Health Benefits Division, Department of Health and Aged Care
Associate Professor Dianne Cutts	Midwife educator
Ms Dell Horey	Consumer representative (Maternity Alliance)
Dr Richard McKinnon	General practitioner
Dr Jacqueline Smith	Obstetrician/gynaecologist
Ms Georgie Stamp	Midwife
Professor Robin Watts	Nurse educator
Professor Ulla Waldenstrom	Academic (midwifery research)

#### Terms of Reference

1. Review national and international evidence to determine the extent of practice and the circumstances under which midwives presently prescribe or administer pharmacological substances during pregnancy, labour, birth and the postnatal period, and order and interpret screening and diagnostic tests. Consideration should be given to evidence relating to overall standards of care and, in particular, to current policies.
2. Examine evidence about the impact of such practices, and any positive or adverse impact on women and their babies, and their care during pregnancy and childbirth.
3. Provide advice on whether and under what circumstances midwives in Australia should be permitted to undertake such 'prescribing' and the ordering and interpreting of such tests, and any limitations which should apply. Consideration should be given to the following:
  - educational requirements;
  - legal implications;
  - indemnity;

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- cost-effectiveness;
  - financial implications including those for the patient and the midwife; and
  - any other relevant factors.
4. Consider the implications that any such changes in midwifery practice might have on other aspects of health and medical practice.
  5. Make a recommendation on how outcomes of this Working Party might be evaluated.

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## APPENDIX B

### REPORT DEVELOPMENT PROCESS

#### **Background**

In November 1995, the NHMRC endorsed the report titled *Options for Effective Care in Childbirth* (NHMRC 1996). This report provides an overview of current practice issues in childbirth care in Australia; describes areas where current practice is at variance with the aim of optimising outcomes for the mother, baby and family; and identifies methods of improving care. The document goes on to make a series of recommendations regarding maternity care.

Council endorsed the report subject to a number of changes, including the deletion of the following two recommendations:

- The Australian College of Midwives Inc., in collaboration with the Joint Committee on Maternity Services, should investigate a mutually agreed education program designed to provide the skill and knowledge necessary for ordering and interpretation of a limited range of tests required for the assessment for normal pregnancy; and
- The Australian College of Midwives Inc., in collaboration with the Joint Committee on Maternity Services, should investigate the feasibility of obtaining limited prescribing rights for midwives to prescribe a range of substances consistent with the care of normal pregnancy in healthy women.

While omitting these recommendations from the report, Council asked the National Health Advisory Committee (NHAC) to give further consideration to these issues.

NHAC subsequently established the Working Party to Review the Services Offered by Midwives. The membership of the Working Party reflected the multidisciplinary nature of midwifery and childbirth and comprised representatives from obstetrics, gynaecology, general practice, epidemiology, midwifery, health economics, health administration and the consumer movement. The full lists of the Working Party members and the Terms of Reference are at Appendix A.

#### **Purpose and scope of the report**

In examining midwifery practices within Australia, the Working Party identified variations between States in legislative arrangements about restrictions on midwives in ordering tests and prescribing drugs, but noted that the relevant Acts were already being reviewed in some States (New South Wales and Queensland) with the view to amending them.

In view of these variations and restrictions, the Working Party agreed that it would restrict its considerations with regard to midwives' extended involvement with the

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ordering of drugs and medications to midwives initiating the use of such substances under standing orders and agreed protocols, rather than the prescribing of such drugs and medications.

In order to maintain achievable Terms of Reference, the Working Party confined its scope to midwives employed by public hospitals, providing public maternity services, where midwifery models of care are widely practised in response to increasing demand. These midwives may work in maternity units in public hospitals or in community settings and outreach areas.

### **Processes employed**

The Working Party approached the development of the report and the recommendations by way of five key tasks:

- Identification of the known clinical issues surrounding the extended responsibilities of midwifery care
- Identification and collection of selected international data
- Review of the national and international scientific literature, including meta-analyses, to identify the best and most appropriate practice and health outcomes
- Development of a glossary of technical terms for incorporation in the report
- Public consultation

Most of the work of the Working Party was conducted out of session, with meetings used primarily to identify the direction to follow, plan the timeframe and division of tasks among the members and review the out of session activity.

International practices were systematically explored. A form containing a list of basic tests and medical substances administered during the antenatal, intrapartum and postpartum period was sent to a selected number of countries to determine the variation in midwifery practice. Only countries with cultural similarities to Australia in which midwifery is well established were selected, and therefore the sample is not representative of all developed countries. The forms were sent to national colleges of midwives in New Zealand, Norway, Denmark, Sweden and Switzerland, and to leading national representatives of midwifery in England, The Netherlands and the United States. The findings are summarised in Table 1.

The report and recommendations were prepared by synthesising this evidence and information. All the members of the Working Party contributed to the preparation of material for the report and the glossary of terms, which is included in the Appendices.

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A technical editor/writer was contracted to finalise the editing as recommended by the NHMRC.

## **Consultation**

When the draft report was ready, members of the Working Party agreed that the document should undergo peer review consultation and the professional opinions of several organisations were sought. These organisations were:

1. The Royal Australian College of Obstetricians and Gynaecologists (RACOG)
2. The Royal Australian College of General Practitioners (RACGP)
3. The Australian College of Midwives Incorporated (ACMI)
4. The Australian Nursing Federation
5. The NSW Chief Nursing Officer
6. The Federal Australian Medical Association (AMA)
7. Maternity Alliance
8. State and Territory Health Departments
9. The Royal New Zealand College of Obstetricians and Gynaecologists (RNZCOG)
10. The Royal New Zealand College of Midwives
11. The College of Nurses Aotearoa, New Zealand

Further, the draft report was circulated for comment to the 91 organisations and individuals who responded to the NHMRC report *Options for Effective Care in Childbirth* at the public consultation stage.

A second stage of public consultation took place during December 1996–January 1997. Following an advertisement in the Government Gazette, 47 submissions were received from individuals, colleges and professional organisations.

The Working Party members attended a meeting where each submission was discussed separately. Subsequent to careful consideration amendments were made to the report.

Due to the controversy surrounding the issues of extending the role of midwives and providing adequate training and education, the Working Party had to modify its expectations on several levels.

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For example, current and future legal constraints in the States and Territories prompted the Working Party to modify the new extended role of midwives from 'prescribing specific drugs' to 'initiation of the use of specified drugs' under standing orders. The Working Party limited its review and recommendations to midwives practising in public hospitals.

### **Implementation**

The Working Party believed that these extended responsibilities of midwives are currently taking place in public hospitals.

The Working Party acknowledged that the extended responsibility of midwives for providing primary care should enable medical teams in public hospitals to devote more care and attention to women with pregnancy complications. This will enable more continuity of care in both the midwifery and medical models.

The Working Party noted that this extended responsibility has implications for the education and training of midwives, and recommends that midwifery curricula ensure that midwives are adequately prepared to assume these responsibilities.

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## APPENDIX C

### LEGISLATION

The following list indicates the legislation (acts, regulations and other relevant statements) in each State/Territory that relates to the initiation of pharmacological substances and the ordering/interpretation of diagnostic tests, particularly as it may affect midwives. It is included to illustrate the legal complexity of the issues considered by the Working Party. It is not intended to be exhaustive. The Working Party is aware that the legislation in some States is currently under consideration.

Care is needed in comparing legislation between States/Territories because there is inconsistency in the terminology used. For example, nitrous oxide is described as a 'restricted drug' in Queensland, a 'poison' in the Australian Capital Territory, a 'volatile solvent' in South Australia and a Schedule 4 (S4) drug in the Northern Territory. Similarly, terms such as 'supply', 'administer' and even 'prescribe' are not always used consistently. The definitions that have been used in this report for these terms are shown in the Glossary.

#### **New South Wales**

##### *Poisons and Therapeutic Goods Act 1966*

Poisons and Therapeutic Goods Regulation 1994

NSW Health Department statements on ordering and interpreting of the diagnostic tests (eg, circulars 97/10 and 95/37)

#### **Victoria**

##### *Drugs, Poisons and Controlled Substances Act 1981*

Drugs, Poisons and Controlled Substances Regulations 1995

##### *Medical Treatment Act 1988*

##### *Nurses Act 1993*

Code of Practice for Midwives in Victoria (Nursing Board of Victoria, 1996)

#### **Queensland**

##### *Health Act 1937*

Health (Drugs and Poisons) Regulation 1996

##### *Drugs Misuse Act 1986*

##### *Medical Act 1939*

##### *Nursing Act 1992*

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## **Australian Capital Territory**

### *Poisons Act 1933*

Poisons Regulations

### *Poisons and Drugs Act 1978*

### *Drugs of Dependence Act 1989*

Drugs of Dependence Regulations

### *Pharmacy Act 1931*

### *Medical Practitioners Act 1930*

### *Nurses Act 1988*

## **South Australia**

### *Controlled Substances Act 1984*

Controlled Substances (Poisons) Regulations 1996

Drugs of Dependence (General) Regulations 1985

### *Medical Practitioners Act 1983*

Regulations under the Medical Practitioners Act 1983

*Nurses Act 1984* (new legislation is currently before Parliament)

## **Western Australia**

### *Poisons Act 1964*

Poisons Regulations 1965

### *Pharmacy Act 1964*

### *Medical Act 1894*

## **Tasmania**

### *Poisons Act 1971*

Poisons Regulations 1975 - (Amended in 1993)

### *Nursing Act 1995*

(Code of Practice for Midwives is also under development)

## **Northern Territory**

### *Poisons and Dangerous Drugs Act 1983*

Poisons and Dangerous Drugs Regulations 1985

### *Misuse of Drugs Act 1990*

### *Nursing Act 1982*

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## APPENDIX D

### DRUGS AND POISONS SCHEDULES

States and Territories poisons acts list the various drugs and poisons into categories, or schedules based on the recommendations of the *Standard for the Uniform Scheduling of Drugs and Poisons* (Australian Health Ministers' Advisory Council 1996). Drugs used in medical practice fall into one of the following categories:<sup>1</sup>

- Schedule 1 – Poisons of plant origin of such danger as to warrant their being available only from medical practitioners, pharmacists or veterinary surgeons.
- Schedule 2 – Poisons for therapeutic use that should be available to the public only from pharmacies; or where there is no pharmacy service available, from persons licensed to sell Schedule 2 poisons.
- Schedule 3 – Poisons for therapeutic use that are dangerous and are so liable to abuse as to warrant their availability to the public being restricted to supply by pharmacists or medical, dental or veterinary practitioners.
- Schedule 4 – Poisons that should, in the public interest, be restricted to medical, dental or veterinary prescription or supply, together with substances or preparations intended for therapeutic use, the safety or efficacy of which requires further evaluation.
- Schedule 8 – Poisons to which the restrictions recommended for drugs of dependence by the 1980 Australian Royal Commission of Inquiry into Drugs should apply.

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1 Schedules 5, 6 and 7 do not apply to pharmacological preparations



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## GLOSSARY

<b>Administer</b>	act of giving a medication to a patient/client
<b>Agreed protocol</b>	written instructions developed by a multidisciplinary team for the administration of a specific medication or medications in particular clinical circumstances in a defined environment and approved by the relevant institutions with whom ultimate responsibility lies; an agreed protocol will not require retrospective signature by a medical practitioner
<b>Analgesia</b>	the relief of pain without causing unconsciousness
<b>Analgesic</b>	a remedy or agent that causes insensibility to pain
<b>Antenatal</b>	existing or occurring before birth (also <i>prenatal</i> )
<b>Augmentation of labour</b>	a medical (eg, intravenous oxytocin) or surgical (amniotomy) intervention in an attempt to increase the strength of uterine contractions
<b>Birth centre</b>	a home-like environment where healthy women can give birth within or adjacent to a maternity unit and receive midwifery-based care with continuity of care throughout pregnancy, birth and the early postnatal period; emergency backup, support and transfer are readily available
<b>Cardiotocography</b>	the electronic monitoring and recording of the fetal heart rate and uterine activity
<b>Cervical smear</b>	<i>see</i> Pap smear
<b>Dispense</b>	to prepare and distribute medicines to those who are to use them
<b>Drug</b>	chemical substance, which can be synthetic or extracted from plant or animal tissue, administered to prevent or cure disease or to alleviate pain
<b>Drug schedule</b>	The lists accompanying States and Territory poisons legislation, listing various drugs and poisons into categories, based on the recommendations of the <i>Standard for the Uniform Scheduling of Drugs and Poisons</i> (see Appendix D), Australian Health Ministers' Advisory Council 1996

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<b>Episiotomy</b>	surgical incision into the perineum and vagina to prevent traumatic tearing during childbirth
<b>Group B streptococcus screening</b>	introital and anorectal cultures for the detection of this bacterium
<b>Indemnity</b>	a collateral contract or security to compensate for damage or loss sustained, expense incurred, etc
<b>Initiate</b>	the activity of determining the need for a non-prescribed medication, or a medication from agreed protocols, based on a nursing/midwifery assessment and making appropriate arrangement for administration of the medication (see also 'prescribe')
<b>Maternal</b>	pertaining to the mother
<b>Medication</b>	a method of treatment by the administration of drugs
<b>Midwife</b>	a person appropriately educated and licensed in a State or Territory to practise midwifery
<b>Midwifery</b>	the theory and practice associated with the care provided by qualified midwives for the care of childbearing women and babies
<b>Narcotic</b>	an agent that relieves pain; the term is applied especially to the opioids, ie natural or synthetic drugs with morphine-like actions
<b>Neonatal</b>	pertaining to the first 28 days of life
<b>Neonatal screening ('heel prick') test</b>	a blood test recommended for all babies to detect phenylketonuria, cystic fibrosis, hypothyroidism and galactosaemia; performed by State laboratories on a sample of blood taken from the baby's heel at five days of age
<b>Oxytocin</b>	a hormone which is administered intramuscularly or by intravenous infusion to induce active labour, to increase the force of uterine contractions in labour, to contract uterine muscle after birth of the placenta to control postpartum haemorrhage

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<b>Papanicolaou ('Pap') smear</b>	a test in which surface cells are gently scraped from the inner surface of the cervix (neck of the uterus) and examined microscopically to screen women for the earliest signs of cervical cancer
<b>Pethidine</b>	a narcotic analgesic drug, used in obstetrics and in preoperative and postoperative medication
<b>Possession</b>	holding or having control over medications for the purpose of initiation or supply
<b>Postnatal</b>	occurring after birth, with reference to the mother or the newborn
<b>Prescribe</b>	the provision in writing by a medical practitioner or other designated professional, after clinical assessment of a patient, of instructions for the dispensing and administration of a drug or remedy. In the context of this report, 'prescribing' means the initiation and supply of drugs by practitioners acting entirely in their own right as professionals, ie, not acting under any protocols or orders (see also 'initiate')
<b>Psychoactive</b>	affecting the mind or behaviour
<b>Substance</b>	a pharmacological preparation registered for use for mother or baby
<b>Supply</b>	act of providing scheduled medication to a patient/client or a third party for use by the patient/client
<b>Team midwifery</b>	a small group of midwives who provide comprehensive midwifery care for their clients
<b>Ultrasound</b>	a diagnostic test which is performed by using ultrasonic waves used to examine the interior organs and structures of the mother and fetus
<b>Visiting midwife</b>	a practising midwife who is appropriately educated and accredited by the Australian College of Midwives Incorporated and also by the institution where she/he has been granted visiting rights (see also 'midwife')



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