

Community pharmacy supply of emergency hormonal contraception: a structured literature review of international evidence

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BACKGROUND: We could find no previous published review of the evidence relating to pharmacy supply of emergency hormonal contraception (EHC). Our objectives were to review, summarize and evaluate the peer-reviewed evidence relating to community pharmacy supply of EHC both in the UK and internationally. **METHODS:** Systematic searches were conducted for peer-reviewed international research from January 1990 to January 2005. The UK Health Development Agency's Evidence Base 2000 standards and the evidence categories used by the UK Department of Health were applied to each paper. **RESULTS:** We included 24 peer-reviewed papers. There was one randomized controlled trial (RCT); the remainder of the studies were qualitative or observational studies. Pharmacy supply of EHC enables most women to receive it within 24 h of unprotected sexual intercourse. Services were highly rated by women. One RCT showed that improving access to EHC did not reduce the use of other contraceptives, lead to an increase in risky sexual behaviour or increase the incidence of sexually transmitted infections (STIs). Users expressed some concerns about the appropriateness of receiving additional pharmacist advice regarding future contraception use and STIs. One study found pharmacy supply had led to a decrease in attendances at accident and emergency departments. **CONCLUSION:** There is good evidence that community pharmacy EHC services provide timely access to treatment and are highly rated by women.

Key words: community pharmacy/emergency hormonal contraception/sexually transmitted infections/systematic review

Introduction

It is generally accepted that community pharmacists have the potential to contribute to improving the public's health and there is a history of over two decades of developmental work in this setting in the UK (Anderson *et al.*, 2003). Supplying emergency hormonal contraception (EHC) through community pharmacies without the need for a doctor's prescription is an important public health role for pharmacists, which has long been campaigned for in the UK as a way of reducing unwanted pregnancies (Anderson, 2001). The original EHC treatment contained a combination of estrogen and progestogen, and its side effect profile was a key reason why it remained a prescription only medicine (POM). The introduction of a progestogen-only EHC product in the UK in early 2000, with its more favourable side effect profile, changed the risk/benefit balance and led to stronger arguments that pharmacy supply should become possible.

Barriers to accessing EHC are a key issue because one study showed that the sooner it is taken after unprotected sex, the more likely it is to be effective. Research has repeatedly confirmed that many women find it difficult to obtain doctor's appointments (or attend other service providers) within the crucial 72-hour window and that (some) women experienced

judgmental attitudes from existing service providers (Ellertson *et al.*, 2000).

In the USA in July 1997, a group of organizations in Washington State began an innovative effort to make emergency contraception more widely available to women (Wells *et al.*, 1998). Community pharmacists worked with local prescribers to produce Collaborative Drug Therapy Agreements (CDTAs). A CDTA is a local agreement between pharmacists and physicians which allows the supply of certain medicines by pharmacists. A two-year demonstration project was initiated including education for pharmacists about emergency contraception, helping pharmacists to establish formal links with prescribers, informing women about the availability of emergency contraception and evaluating the impact of the project. The scheme involved 140 pharmacies in Washington State, with training being undertaken by 1000 pharmacists (Hayes *et al.*, 2000). Six US states now have some form of CDTA allowing pharmacy supply: Washington, Maine, and pilot programmes in Alaska, California, New Mexico and Hawaii. However, unlike in much of Europe, Canada, Australia and New Zealand, over the counter (OTC) supply of EHC has not been approved by the Federal Drug Administration (FDA) in the USA.

In June 1999, progestogen-only EHC was made available from pharmacies in France, the first product to receive such status in a developed country. From around 2000 onwards, EHC became available from pharmacies in an increasing number of European countries, Canada, New Zealand and, more recently, Australia.

In December 1999, EHC became available in UK community pharmacies in two areas of England via Patient Group Directions (PGDs). A Patient Group Direction is 'a written direction, signed by a doctor or dentist, and by a pharmacist, relating to supply and administration only, of a prescription only medicine (POM) or P medicine to persons generally, subject to any specific exclusions set out in the Direction' (POM Human Use Order 1997, SI1830 Section 12). Schemes were developed in Manchester and south London to supply NHS-funded EHC (Anderson *et al.*, 2001a,b). The PGD protocol guides the decision-making of the pharmacist and provides the legal authority for the pharmacist to supply the product (Anderson *et al.*, 2001a,b; Savage, 2001; National Health Service Executive North West). There is no charge to the user.

These services have now been replicated in many areas of the UK. In 2001, EHC was deregulated from POM to Pharmacy ('P') medicine status in the UK. A P medicine is a 'behind the counter' product whose sale has to be supervised by a pharmacist. The NHS Centre for Pharmacy Education mounted an unprecedented national education programme for pharmacists, including workshops throughout England and a distance learning programme sent out to all pharmacists in England, which was also available via the internet. The product manufacturer also provided pharmacist education.

The contraception and sexual health survey carried out in the UK in 2003/04 showed that 27% of emergency hormonal contraception was obtained through community pharmacies (ONS, 2004).

We could find no previous published review of the evidence relating to pharmacy supply of EHC. Our objectives were through a structured literature review to: (i) evaluate the impact of pharmacy supply on service users, pharmacists and the health care system; and (ii) review the evidence on health care provider attitudes towards pharmacy supply.

Methods

Search strategies

Electronic databases (MEDLINE, EMBASE, Cochrane Library and International Pharmaceutical Abstracts) were searched for the period from 1 January 1990 to 31 January 2005 for UK and international literature. The inclusion period was from 1990 until 2004. Hand searches for the same period were conducted of the Health Education Journal, International Journal of Pharmacy Practice, Journal of Social and Administrative Pharmacy, Pharmacy World and Science, Annals of Pharmacotherapy (1992 onwards; previously Drug Intelligence and Clinical Pharmacy 1990–1991), Pharmaceutical Journal, Scanner, and abstracts of the British Pharmaceutical Conference and Health Services and Pharmacy Practice Research Conference. All searches included non-English language literature. Those studies with English abstracts were assessed for inclusion on the basis of the abstract.

Search terms were: pharmacists; community pharmacy; community pharmacy services; pharmacies; pharmaceutical services; health

education; health promotion; public health; emergency hormonal contraception; emergency contraception; and contraception.

The authors separately examined the lists of titles and abstracts of papers from the searches, and then compared inclusion/exclusion lists, resolving any differences by discussion. Hard copies were obtained for all papers to be considered for inclusion.

Inclusion and exclusion criteria

Studies were included if they: (i) measured one or more outcomes of pharmacy provision of EHC; or (ii) included empirical data on perceptions or attitudes of health care providers to pharmacy supply of EHC. Papers that described service developments without supporting data were excluded.

Abstraction of data

Data from the published papers were abstracted and entered into a matrix using the following framework: authors and study; study quality; country; study design and participants; interventions (including training); outcome measures; results; and conclusions. A sub-sample of six papers was abstracted by the authors and the findings compared to identify any differences and resolve them through discussion.

Quality assessment

Quality assessment frameworks for research are generally based on a hierarchy of evidence with the randomized controlled trial (RCT) as the 'gold standard'. The literature in the field of pharmacy practice/health promotion/public health in pharmacy contains relatively few RCTs, but a substantial number of experimental and descriptive studies.

Two approaches were used to assess the quality of the evidence. First, the UK Health Development Agency's Evidence Base 2000 standards for transparency, systematicity and relevance were applied to each paper (see Appendix I). Secondly, each study was allocated an evidence grade using the evidence categories used by the UK Department of Health in National Service Frameworks (see Appendix II).

Results

A total of 24 studies were included (see Tables I and II). The main reason why studies were excluded in the initial sift was because they were position/discussion papers (particularly from the USA) making the case for EHC to become an OTC product. In total, 15 papers examined pharmacy supply of EHC by either OTC or by protocols (for example Patient Group Directions in the UK and Collaborative Drug Therapy Agreements in the USA). These papers came from UK (5), Europe (2), Canada (4) South Africa (1) and USA (3). The majority of papers focussed on users' experience of EHC.

Service users' experience

In the USA, Sommers *et al.* (2001) conducted a questionnaire survey of providers and users of the Washington State scheme, in which 145 CDTAs were created and 11 969 supplies of EHC were made over 16 months. Pharmacists were highly rated by users for their personal interactions and for the quality of information supplied about EHC use. Ratings were lower for information about side effects, recognition and follow-up of EHC failure, and for information on regular contraceptive methods. A cross-sectional, self-administered questionnaire in 15 randomly selected pharmacies providing EHC in Washington State examined adolescent's reasons for seeking EHC from a

Table 1. Types of study and country

Topic	Number of studies	Countries
Service users' experience*	8	USA, France, Norway, Portugal, Sweden, Canada
Clinical and behavioural outcomes	1	USA
Pharmacists' experience	5	USA, UK, South Africa
Physicians' experience	1	USA
Health care provider perceptions	3	USA, UK
Potential service user perceptions	1	UK
Training and competence	2	Canada, UK
Quality of pharmacist emergency hormonal contraception (EHC) consultations	3	UK, Canada, USA
Impact of pharmacy EHC supply on health system usage	1	UK
Use of pharmacies to raise awareness of EHC	1	UK

*Two studies covered both service users' and pharmacists' experience.

pharmacist (Sucato *et al.*, 2001); 126 adolescents answered the survey. The most common reasons were: convenience (44%); lack of knowledge about alternatives (38%); and privacy (31%). Fifty-eight per cent said they would have gone to a doctor had it not been available in the pharmacy, 22% would have waited to see if they got pregnant, and 20% did not know. Eighty-one per cent said they needed a new method of regular contraception, an evaluation for sexually transmitted infections (STIs) or both. Adolescents were satisfied with the pharmacy service and most said they would recommend it to a friend.

Bissell and Anderson (2003) studied pharmacists and service users' experience of the PGD scheme in Manchester and 11 women took part in focus groups. The scheme was largely well received by users. Benefits included increased access at no cost to the user. Users noted a welcome lack of judgmental attitudes when accessing the service. There were a number of concerns from users and pharmacists regarding the potential for misuse, changes in contraceptive behaviour and the impact on STIs. Some women questioned the appropriateness of pharmacists providing advice about long-term contraception needs and STIs in the context of the pharmacy consultation. Some felt that the service should be confined to supplying EHC, rather than counselling individuals on their long-term contraception needs or the risks of STIs. On the other hand, some women felt it was definitely appropriate for pharmacists to counsel younger women (those aged under 16) and felt therefore that pharmacists might have to counsel all women in order to appear 'even handed.'

A series of 4–5 focus groups per country were held with 98 non-prescription EHC users from France, Norway, Portugal and Sweden (Gainer *et al.*, 2003). Participants overwhelmingly supported availability of EHC in pharmacies, saying it facilitated rapid access to emergency contraception. They often expressed polarized views of the counselling provided by pharmacists, particularly regarding privacy and judgmental attitudes. Norwegian pharmacy staff said very little when they handed over the product compared with other countries. Participants reported that they knew how to use the method safely and properly and found the package insert easy to understand. Women described their EHC experience as a motivating factor, which in many cases they said had led to more consistent use of regular contraception.

A total of 419 questionnaires were distributed to women receiving EHC on prescription from a GP or a clinic (34%), by PGD or OTC (66%) from 112 pharmacies from one large chain

in the UK (Killick and Irving, 2004). Originally, 5000 questionnaires had been distributed to 764 pharmacies; 112 had chosen to hand them out, making it impossible to measure the response rate. Sixth-four per cent of those who obtained EHC directly from the pharmacy were able to take it within 24 h of unprotected intercourse compared with 46% who obtained it on GP prescription. Around 40% were first time users. Women under 20-years-old were more likely to obtain EHC directly from a pharmacy. Women who obtained their EHC directly from a pharmacy appeared to be just as well informed, just as likely to arrange regular follow-up, and generally preferred this system, although they would prefer not to have to pay for OTC supply.

A 24-item questionnaire was sent to 800 randomly selected women in mid-Sweden one year after EHC had been deregulated (Larsson, 2004). There was a 71% response rate; 98% had heard of EHC and 65% preferred to purchase it from a pharmacy. Twenty-seven per cent (150) women had used EHC before. Regarding counselling, 39% of women favoured obtaining EHC from a clinic. Women who favoured the clinic were also more concerned about risks; 26% of women thought they would get more information from a trained professional in a clinic. Most women agreed that the service was anonymous in a pharmacy, 24% had worried about side effects and one third considered EHC to be a kind of abortion. The author therefore stated that there is still a need to improve the recruitment strategy and to get pharmacists to give more information when they supplied EHC. Regression models indicated that correct knowledge and positive attitudes were contributing factors for future use of EHC. No evidence of overuse was found. Aneblom *et al.* (2002) conducted focus groups with women who had purchased EHC as an OTC product in Sweden. Time saved was seen as the key benefit of pharmacy availability, also feelings of confidence and reassurance of being able to access EHC easily. The women reported both positive and negative experiences of their interactions with the pharmacist.

A Canadian programme supplied EHC directly in pharmacies using trained pharmacists to supply EHC via a prescribing protocol (Dunn *et al.*, 2003); 146 pharmacists practising in 40 Toronto pharmacies were linked with 34 physicians. A poster, a radio advertisement and a telephone hotline informed women about the service. In the first year of the project, 6931 supplies of EHC were made. A postal questionnaire was returned by 1457 (20.6%) of the women; 54% accessed EHC within 24 h

Table II. Matrix of publications

Publication details, evidence grading and country	Study design, participants and setting	Outcome measures	Key findings
Sommers SD, Chaiyakunapruk N, Gardner JS and Winkler J (2001) The emergency contraception collaborative prescribing experience in Washington state. <i>J Am Pharm Assoc</i> 41,60–66. C1 USA	Questionnaire survey of service providers and users. Provider questionnaires were distributed 6 months after the programme started. User questionnaires were distributed at the point of service and returned by mail.	User satisfaction with interaction with the pharmacist and specific information. Provider attitudes towards and experiences of the programme.	Response rates were 51% (159) for pharmacists, 27 (49%) for prescribers and 470 (6.5%) for users. Most (92%) of pharmacists and prescribers were 'satisfied' or 'very satisfied' with their prescribing agreements. Pharmacists were highly rated by users for their interactions with patients and quality of information about EHC use. Ratings were lower for information about side effects, recognition and follow-up of EHC failure, and regular contraceptive methods.
Sucato GS, Gardner JS and Koepsell TD (2001) Adolescents' use of emergency contraception provided by Washington State pharmacists. <i>J Pediatr Adolesc Gynecol</i> 14,163–169. B3 USA	Cross-sectional, self-administered survey in 15 randomly selected pharmacies providing EHC in western Washington State. Participants: adolescents aged 15–21 years who obtained EHC directly from a pharmacist.	To examine adolescent's reasons for seeking care from a pharmacist, need for additional medical evaluation, risk for not receiving additional medical care, and satisfaction with care provided by the pharmacist.	126 adolescents answered the survey. The most common reasons were: convenience (44%); lack of knowledge about alternatives (38%); and privacy (31%). 58% said they would have gone to a doctor had it not been available in the pharmacy, 22% would have waited to see if they got pregnant and 20% did not know. 81% said they needed a new method of regular contraception, an evaluation for STIs or both. Adolescents were satisfied with the pharmacy service and said they would recommend it to a friend.
Bissell P and Anderson C (2003) Supplying emergency contraception via community pharmacies in the UK: reflections on the experiences of users and providers. <i>Soc Sci Med</i> 57,2367–2378. B3 UK	Part of the evaluation of a scheme in Manchester, Salford and Trafford where accredited pharmacists were permitted to supply EHC free of charge under a patient group direction, on completion of a consultation with requesting users. Twenty-four pharmacist interviews took place, drawn from a total of 55 pharmacists participating in the scheme at the time of the evaluation. Two focus groups were held with women who had used the scheme.	Pharmacists' and women's views about the scheme.	The authors tentatively suggest that the scheme was largely well received by pharmacists and users. Benefits included increased access at no cost to the user. Users noted a welcome absence of judgmental attitudes when accessing the service. Both users and pharmacists had a number of major concerns about the scheme centring on the potential for misuse, changes in contraceptive behaviour and the impact on sexually transmitted infections. Many pharmacists spontaneously referred to the benefits that the scheme accrued to the pharmacy profession.
Gainer E, Blum J, Toverud E-L, Portugal N, Tyden T, Nesheim B-I, Larsson M, Vilar D, Nymoen P, Aneblom G, Lutwick A and Winikoff B (2003) Bringing emergency contraception over the counter: experiences of non-prescription users in France, Norway, Sweden and Portugal. <i>Contraception</i> 68,117–124. B3 Europe	A series of four or five focus group discussions per country were held with 98 non-prescription EHC users from urban centres in France, Norway, Portugal and Sweden. Inclusion criteria and research instruments were common across all sites but recruitment logistics varied. Topics discussed included knowledge and attitudes about EHC before use, personal experience and post-EHC reflections and opinions. Each participant also filled out a demographic questionnaire. All participants were given a modest compensation for their time in cash or kind. A third party observer took notes throughout and the focus groups were tape recorded on audio and/or video cassettes, and later transcribed. Content analysis was conducted and comments summarised according to identified themes.	To learn about women's experiences with this new means of EHC service delivery.	Participants overwhelmingly supported pharmacy access to EHC, explaining that pharmacy delivery facilitated rapid access to the method. Despite expressing often polarized views of the counselling given by the providing pharmacists, particularly regarding privacy and judgmental attitudes, participants reported that they knew how to use the method safely and properly. Pharmacy staff in Norway exchanged EHC with very few words compared with longer consultations in other countries. Most indicated that the package insert was easy to understand and answered the majority of their questions adequately. Participants described the EHC experience as a motivating factor that, in many cases, has led to more consistent use of regular contraceptive methods. The authors conclude that, while there are several issues to be addressed, EHC can be safely provided from pharmacies.
Killick SR and Irving G (2004) A national study examining the effect of making emergency hormonal contraception available without prescription. <i>Hum Reprod</i> 19,553–557. B3 UK	5000 self-completion, anonymous questionnaires were distributed to women requesting EHC through 764 Moss pharmacies.	Proportion of women receiving EHC within 24 h of unprotected intercourse.	419 questionnaires were returned from 112 different pharmacies. EHC users varied in age from 16–39 years. 143 (34%) received it with a prescription and 274 (65%) from the pharmacist, 64 (23%) by patient group direction and 210 (77%) by paying for it. Around 40% were first time users. Women under 20 years were more likely to access their EHC from a pharmacy. 64% of women who obtained EHC directly from a pharmacy were able to take it within 24 h compared with 46% who obtained it on a GP prescription. Women who obtained their drugs directly from a pharmacy were just as well informed, just as likely to arrange regular follow-up and generally preferred this system, although those who purchased the pharmacy medicine disliked having to pay.

Table II. Continued

Publication details, evidence grading and country	Study design, participants and setting	Outcome measures	Key findings
Larsson M, Eurenium K, Westerling R and Tyden T (2004) Emergency contraceptive pills over the counter: a population based survey of young Swedish Women. <i>Contraception</i> 69,309–315. B3 Sweden	A 24-item, pre-piloted, postal questionnaire was sent to 800 randomly selected women in mid Sweden a year after EHC had been deregulated to a pharmacy medicine.	Women's knowledge, attitudes and practices regarding the method.	Response rate 71% ($n = 564$). 98% had heard of EHC. 65% preferred to purchase EHC in the pharmacy. Women who had visited a contraceptive clinic in the last year had significantly better knowledge than women who had not. Attitudes to EHC were predominately positive but 24% had worries about side effects and a third considered EHC to be a kind of abortion. The researchers found no evidence of overuse. The majority of women said they wanted to receive counselling from a skilled pharmacist or another health professional. Logistic regression showed that correct knowledge of and positive attitudes towards EHC contributed to estimated future use.
Anebloom G, Larsson M, von Essen L and Tyden T (2002) Women's views about emergency contraception pills 'over the counter': a Swedish perspective. <i>Contraception</i> 66,339–343. B3 Sweden	Four focus groups with 27 women who had purchased over the counter (OTC) EHC. The participants also completed a structured questionnaire at the end of the focus group.	Women's knowledge, experience and attitudes towards purchasing and using OTC EHC.	Most participants (20) had used EHC once. 16 of the EHC purchases were made at the weekend. Most women had purchased EHC within 24 h of unprotected intercourse. The women found EHC expensive. Pharmacies were viewed as an appropriate place to supply EHC. Most women reported positive experiences of their consultations with the pharmacist. Smaller numbers reported neutral or negative responses from pharmacists. Advance purchase of EHC was generally thought to be appropriate. Most women thought wider EHC availability would have no effect on women's contraceptive use.
Raine TR, Harper CC, Rocca CH, Fischer R, Padian N, Klausner JD and Darney PD (2005) Direct access to emergency contraception through pharmacies and effect on unintended pregnancies and STIs: a randomized controlled trial. <i>JAMA</i> 293,54–62. B1 USA	Randomized controlled trial (RCT) with 2117 women aged 15–24 recruited through clinics. Three arms: access to EHC through clinics (usual care, 310 women); community pharmacy access (814); 'advance supply' (three packs of EHC supplied together, 826 women). Follow-up was for six months.	Pregnancy rates, acquisition of new sexually transmitted infections (STIs), contraceptive use, risky sexual behaviours (unprotected intercourse)	1950 women (92%) were included at follow-up and had an average age of 19.9 years. EHC use was comparable in the clinic and pharmacy groups (21.0% versus 24.2%) and higher in the advance supply group (37.4%). Pregnancy rates were comparable across the three groups, as was the incidence of new STIs. No differences in use of regular contraception or in risky sexual behaviour.
Dunn S, Brown TE, Cohen MM, Cockerill R, Wichman K, Weir N and Pancham A (2003) Pharmacy provision of emergency contraception: the Ontario emergency contraception pilot project. <i>J Obstet Gynaecol Can</i> 25,923–930. B3 Canada	Pharmacists and physicians working in three regions of Toronto were recruited to receive a training program on EHC. The pharmacists in each pharmacy were linked with a designated physician who retrospectively authorized prescriptions provided under the protocol. Women's eligibility for EHC was determined using a self-administered questionnaire, which that was reviewed by the pharmacist. A poster and radio campaign advertised the service, and a telephone hotline informed users of their nearest participating pharmacy. Data on the woman's age, reasons for requesting EHC, time elapsed from intercourse until presentation, and requests for follow-up referral were analysed using descriptive methodology. User satisfaction was determined through a postal questionnaire.	To develop and evaluate a programme to provide EHC directly in pharmacies that would recruit and train pharmacists and physician partners, and inform women about the availability of EHC in pharmacies.	146 pharmacists practising in 40 pharmacies were linked with 34 physicians. In the first year of the project, 6931 prescriptions for EHC were provided. 54% of the women accessed EHC within 24 h of intercourse. The postal questionnaire was returned by 1457 (20.6%) of women. The majority of them were very satisfied with the service and almost all agreed that they understood how to take EHC. 21.1% indicated that, had they not obtained EHC in this way, they would not have obtained it elsewhere. More information about birth control was desired by 10.2% of the women. An estimated 195–220 abortions were prevented by the pilot project.
Kumar AS, Hall LC, LePage A and Lim PC (2003) Providing emergency contraceptive pills 'behind the counter': opinions among Minnesota healthcare providers. <i>Contraception</i> 68,253–259. B3 USA	Mailed survey to random sample of 1000 health care providers: physicians, 'mid-level' practitioners (nurse practitioners, nurse midwives and physician assistants) and pharmacists.	Attitudes towards strategies to increase access to emergency contraception, including use of collaborative drug therapy agreements (CDTAs) to enable pharmacist supply.	The response rate was 50% (495). Percentages of physicians and mid-level practitioners in favour of 'behind the counter' OTC supply was 50% among physicians and 39% among mid-level practitioners. Around 20% of both groups said they would need more information about pharmacy supply before expressing a view. Almost half (46%) the pharmacists said they would participate in a CDTA. Overall, 18% of respondents expressed personal or moral objections to the use of EHC.

Table II. Continued

Publication details, evidence grading and country	Study design, participants and setting	Outcome measures	Key findings
D'Souza R and Bounds W (2001) Over the counter emergency contraception: a survey of pharmacists' and general practitioners' knowledge, use and views. <i>Pharm J</i> 266, 293–296. B3 UK	All registered GPs and community pharmacists in Camden and Islington, and Merton Sutton and Wandsworth health authorities in London. The Faculty of Family Planning and Reproductive Health Care guidelines were sent 4 weeks in advance to all of the above in Camden and Islington, with Merton Sutton and Wandsworth serving as a control.	To ascertain the knowledge, use and views of community pharmacists and general practitioners on EHC and its availability over the counter. The effectiveness of circulating educational material.	There was a 56% response rate for GPs and a 50% response rate for pharmacists, with GP respondents showing a good knowledge of EHC but a reluctance to use it. Although nearly all GPs had some reservations, usually regarding safety, privacy, pharmacy training and appropriateness and reduced use of regular contraception, 55% were in favour of OTC supply. Pharmacists had less knowledge about EHC but 75% wished to supply it OTC. Pharmacists expressed fewer reservations about OTC supply. However, a fifth expressed an ethical objection to supply. The guidelines had been read by 60% of GPs and 37% of pharmacists in Camden and Islington.
Barrett G and Harper R (2000). Health professionals' attitudes to the deregulation of emergency contraception (or the problem of female sexuality). <i>Social Health Illn</i> 22, 197–216. B3 UK	A qualitative study using data from depth interviews with 18 pharmacist and six GPs in South London	The aim was to examine interviewees' views on possible deregulation of EHC. The objective was to obtain personal and professional views on EHC and related factors and attitudes towards selling it in the future.	Most interviewees held overwhelmingly negative attitudes towards deregulation. The authors state that this opposition is due to clearly articulated assumptions about female sexuality, particularly that women are irresponsible, chaotic and deviant. The authors conclude that these attitudes are likely to undermine the provision of deregulated EHC.
Folkes L, Graham A and Weiss M (2001) A qualitative study of the views of women aged 18–29 on over-the-counter availability of hormonal emergency contraception. <i>J Fam Plann Reprod Health Care</i> 27, 189–192. B3 UK	Qualitative study using face-to-face, semi-structured interviews with 27 women aged 18–29 years in a NHS family planning clinic, a voluntary sector family planning clinic and a general practice in the south-west.	To explore women's views on the deregulation of EHC prior to it becoming deregulated on 1 January 2001.	Most women were in favour of deregulation with OTC provision perceived as quick, convenient and anonymous. Reservations regarding overuse and over-reliance upon EHC mirror those of health professionals, although it was not felt that the increased accessibility of EHC would lead to changes in sexual activity. Concerns that deregulation would promote an irresponsible attitude towards contraception were largely focused on younger women. Cost was generally regarded as a positive barrier to overuse. However, it was felt that the price should not be prohibitively high. A figure corresponding to the current prescription charge was most often cited. The pharmacy was the preferred choice of provider for most women.
Cockerill R, Cohen M, Dunn S and Brown T (2004) Recruitment strategies – pharmacists' participation in an evaluation project to dispense emergency contraception. <i>Eval Health Prof</i> 27, 70–79. C1 Canada	This paper describes the effectiveness of a multi-focus recruitment strategy to a pilot project allowing direct provision EHC in community pharmacy through collaborative agreements between pharmacists and physicians. The project recruited pharmacies through direct appeals to pharmacists, pharmacy managers and/or owners, and corporate pharmacy chains.		The evaluation project was successful in recruiting sufficient numbers of pharmacies to warrant proceeding with the project. The most successful component of the recruitment strategy was reference to the opportunities that participation offered to expand the pharmacist's role in patient-focused care. The importance of peer influence was also noted in terms of encouraging pharmacy involvement.
Seston EM, Holden K and Cantrill J (2001) Emergency hormonal contraception: the community pharmacy perspective. <i>J Fam Plann Reprod Health Care</i> 27, 203–208. B3 UK	14 community pharmacists in north-west England, eight of whom were supplying EHC via patient group direction (PGD) took part in two focus groups.	To explore the views of community pharmacists in the north west of England towards the deregulation of EHC and to examine their support and training needs.	A number of participants appeared to lack detailed knowledge about the mode of action of EHC and misunderstandings about this, coupled with erroneously held beliefs about the adverse effects of the drug, appeared to influence their attitudes to deregulation. Participants identified risks associated with pharmacy supply of EHC, both to women and to themselves, in the form of litigation. EHC was accorded a special status, which seemed to go beyond its pharmacological properties and risk-benefit profile. A key and recurring theme was abuse, an ill-defined concept which appeared to refer to multiple or repeated use. It is interesting to note that none of those participants supplying EHC under a PGD could provide any examples of such abuse from their own experience.

Table II. Continued

Publication details, evidence grading and country	Study design, participants and setting	Outcome measures	Key findings
Bissell P, Anderson C and Savage I (2005) A qualitative study of pharmacists' perspectives on the supply of emergency hormonal contraception via patient group direction in the UK. <i>Contraception</i> , in press. B3 UK	Qualitative study using depth interviews with 44 community pharmacists supplying EHC in Manchester, Salford and Trafford and Lambeth Southwark and Lewisham (London).	To investigate pharmacists views and experiences of supplying EHC via a group prescribing protocol in community pharmacies in the UK.	Pharmacists were broadly very positive about their experiences supplying EHC via the group prescribing protocol. Pharmacists identified many benefits of the EHC schemes for clients and, in particular, improved access to EHC at no cost to clients. The confidential nature of the scheme was also seen as an advantage, as was the scope for signposting to other service providers. Pharmacists also believed that the scheme had benefits for the profession in terms of enhanced professional standing. However, their concerns included the scope for repeated use of EHC, the possible impact on contraceptive behaviors and sexually transmitted infections and its impact on male coercive sexual behaviour. 96% of pharmacists had received requests for EHC within the last year. On average, each pharmacist received 177 requests. 69% of pharmacists were in favour of making EHC available without a prescription, 62% were already supplying EHC without a prescription and 67% felt that it was important to increase public awareness regarding EHC. 91% of pharmacists did not have any literature regarding EHC to hand to clients, 68% had a private area in their pharmacy to counsel patients and 86% of pharmacists indicated that they discussed long-term contraception with clients.
Hariparsad N (2001) Attitudes and practices of pharmacists towards emergency contraception in Durban, South Africa. <i>Eur J Contracept Reprod Health Care</i> 6,87–92. B3 South Africa	A questionnaire was sent to all 182 private sector pharmacies in north and south central Durban, South Africa. The questionnaire examined the frequency of demand and supply of emergency contraception, as well as pharmacists' attitudes and practices towards it.	Attitudes and practices of community pharmacists towards emergency contraception.	A formal course with role play was a successful training method. The course also served as a team building exercise. The pharmacists had understood the concept of client confidentiality and gained confidence over time in the use of the PGD. The on-call consultants received 152 calls in the first 12 months of the scheme. Over 80% of the calls concerned clinical criteria (notably including 22% that were queries about oral contraceptives). Frequency ranged from 1–8 calls per week with 28% made at weekends. In over half (60%) of the calls, the pharmacist was subsequently able to make a supply. Queries over client management resulted in several changes in the protocol. Pharmacists were concerned throughout the study about how clients might 'misuse' or 'abuse' the service, and this remained a concern despite the fact that it also applies to other routes of supply. However, the PGD cohort was more positive on local benefits than pharmacists who were not selected. The average scores on the pre- and post-training tests were 14.4/25 (57.6%) and 22.1/26 (85.0%), respectively ($P < 0.05$). Over a series of three workshops, 203 (17.2%) of Saskatchewan's 1182 pharmacists became certified to prescribe EHC, which they were allowed to do so after a change in the law on 1 September 2003.
Bacon L, Savage I, Cook S and Taylor B (2003) Training and supporting pharmacists to supply progesterone-only emergency contraception. <i>J Fam Plann Reprod Health Care</i> 29,17–22. B3 UK	A systematic analysis of written and oral data from 20 out of 23 pharmacists before and during training and at 5, 13–14 months after launch. Analysis of telephone calls to clinical support and analysis of written pharmacy records. Follow up of 6 out of 23 pharmacists who also applied but were not accepted were also followed up.	To describe and evaluate the training and support provided to the first cohort of community pharmacists to supply progesterone-only EHC under a patient group direction in Lambeth, Southwark and Lewisham, London.	315 (98%) pharmacists were contactable. One third of pharmacists stated the correct time parameter for EHC. 13% of pharmacists' responses either directly stated or indirectly indicated that EHC causes abortion. Only 35% of pharmacists said they would be able to dispense EHC that day if the caller came to the pharmacy with a doctor's prescription. Pharmacists who presented correct information about EHC were more likely to say they could dispense it. The authors concluded that significant numbers of pharmacists did not have sufficient or accurate information about EHC. They recommended education programmes on EHC for pharmacists and pharmacy students.
Neubauer SL, Suveges LG, Phillips KA and Kolodziejek LR (2004) Competency assessment of pharmacists providing emergency contraception. <i>Can Pharm J</i> 137,28–33. B3 Canada	209 out of 285 pharmacists from Saskatchewan agreed to take part in the training about the supply of EHC.	Participants completed a test before and after training and were required to attain a score of $\geq 80\%$ on the latter test to become certified to prescribe. 203 pharmacists (71%) became prescribers.	
Bennett W, Petraitis C, D'Anella A and Marcella S (2003) Pharmacists' knowledge and the difficulty of obtaining emergency contraception. <i>Contraception</i> 68,261–267. B3 USA	'Mystery shopper' telephone survey of a random systematic sample of 320 community pharmacies in Pennsylvania between January and March 2002.	Pharmacists' knowledge and attitudes relating to EHC; access to dispensing EHC.	

Table II. Continued

Publication details, evidence grading and country	Study design, participants and setting	Outcome measures	Key findings
Anderson C and Bissell P (2004) Using semi covert research to evaluate an emergency hormonal contraception service. <i>Pharm World Sci</i> 26,102–106. B3 UK	Aimed to evaluate: whether the patient group direction protocol for supply of EHC was being adhered to; whether pharmacists were undertaking their professional duties appropriately; and how women researchers felt that the service was being delivered. Semi covert research was used: two women researchers posed as clients seeking emergency contraception in a sample of 10 participating community pharmacies at which they used two rehearsed scenarios about unsafe sexual intercourse and missed doses of the oral contraceptive pill. All transactions were tape-recorded and the recordings were used to produce the findings. The two women researchers posing as clients were also asked to record their feelings and experiences concerning the service on leaving the pharmacy.	Adherence to the patient group direction protocol and women's perceptions of service provision.	For both scenarios, the protocol was largely adhered to and emergency contraception was supplied appropriately. The length of each consultation for both scenarios was 10–15 min. The women reported that the pharmacists had been courteous, polite and non judgemental. The consultations were carried out in a private area or in the dispensary. The women had no concerns about confidentiality.
Cohen MM, Dunn S, Cockerill R and Brown TER (2004) Using a secret shopper to evaluate pharmacist provision of emergency contraception: satisfaction levels high, with privacy a concern. <i>Can Pharm J</i> 137,28–33. B3 Canada	A pilot project in Toronto, Ontario, aimed to increase accessibility by allowing pharmacists to dispense EHC through a pharmacist–physician collaborative agreement, using a predefined protocol. Participating pharmacists received training in the pilot protocol and about EHC. Five trained 'secret shoppers' of varied ethnicity were trained for 2 h to use one of two predefined scripts (script 1 where EHC was clearly appropriate, and script 2 where EHC was not appropriate). They visited 34 participating pharmacies to request EHC. The pharmacists were sampled regarding size, location and hours of opening (usual business hours or open after 18.00) At the end of the visit, the secret shopper filled in a questionnaire about the encounter and provided comments. Percentages were calculated for all variables.	Whether participating pharmacists were following the project protocol and to determine the quality of the pharmacist–patient encounter.	23 small and 13 large pharmacies were visited. At two pharmacies, no pharmacist was available, leaving 34 for analyses. For script 1 encounters ($n = 17$), most pharmacists followed the protocol correctly to dispense EHC. For script 2 encounters ($n = 17$), 71.4% provided alternatives to EHC, but three pharmacists did not follow protocol and provided EHC. 52.9% of pharmacists for script 1 and 71.4% for script 2 provided a community referral for follow-up care. The majority of pharmacists (97%) treated the shopper with respect and 85% communicated clearly. Privacy was protected in 82.3% of cases but in only 22 (64.7%) of encounters was there a private consultation area. Most of the shoppers' comments were positive and the main negative comment about the encounter was lack of privacy. There were several comments about the need for more information about STIs or the lack of an appropriate referral by the pharmacist.
Kerins M, Maguire E, Fahey DK and Gluckman E (2004) Emergency contraception. Has over the counter availability reduced attendances at emergency departments? <i>Emerg Med J</i> 21,67–68. B3 UK	Retrospective search of electronic patient record systems for patients requesting emergency contraception at two emergency departments in south-east London. If reason for consultation was unclear, written case notes were reviewed. Data were collected on patient's age, GP registration and whether or not the patient was prescribed EHC after her request. Years 2000 and 2001, after introduction of pharmacy sale and supply of EHC were compared.	Number of consultations for EHC at the two emergency departments	There were a statistically greater proportion of attendances requesting EHC in 2000 compared with 2001 ($P < 0.001$); this reflected a 52% decrease in requests. Despite an overall increase in manufacturers' sales of EHC in 2001 compared with 2000, the change in legislation has resulted in a decrease in the burden of health care for emergency departments. The authors state there is room for further reduction in attendances at emergency departments.
Sharma S and Anderson C (1998) The impact of pharmacy using window space for health promotion about emergency contraception. <i>Health Ed J</i> 57,42–50. B3 UK	A 'before and after' study of the effect of pharmacy window displays on enquiries about emergency contraception. 20 pharmacies participated in one London health authority. Pharmacists attended an evening seminar to introduce the scheme. Pharmacies were paid £250 for participating.	Number of enquiries about emergency contraceptive pill (ECP); number of leaflets, ECP dispensed; pregnancy tests sold 2 weeks before, during, and 2 weeks following the campaign. Customer questionnaire to determine response to the display and how they would use pharmacies.	20 pharmacies collected data. Enquiries increased 2–4 fold. 13 collected leaflet data: there was an increase in leaflet uptake by 13–43 fold. There was a 4-fold increase in number of pregnancy tests sold and three times more prescriptions for ECP were dispensed. 160 women mainly aged from 12 to 25 years responded to the survey. The majority considered the display to be 'good or very good', and only 6% had not noticed it. 60% said they would use their pharmacist in the future for advice about ECP.

of unprotected intercourse. The majority were very satisfied with the service and almost all agreed that they knew how to take EHC. Twenty-one per cent indicated that, if EHC had not been available in the pharmacy, they would not have used it, while 10% wanted more information on contraception. Dunn *et al.* (2003) estimate that 195–220 abortions were prevented by their project.

Clinical and behavioural outcomes

An RCT was conducted in the USA which compared access to EHC through clinics (usual care), community pharmacies and 'advance supply' in which the woman received three packs of EHC (Raine *et al.*, 2005). This study provides important new evidence and its strength is in the large number of women enrolled. A total of 2117 women aged between 15 and 24 participated, and they were followed up for 6 months. Pregnancy rates were similar in the three groups, as was the incidence of new STIs (as measured using biomarkers). There were no differences in the use of other contraceptives and no increase in risky sexual behaviour. EHC was used on more than one occasion by a small proportion of women: 6.8% of women used it twice and 4.1% used it three times. The study subjects were women attending clinics that provided family planning services and the wider applicability of the findings is not known. At 6 months, the follow-up was likely to be of too short a duration to detect any possible reduction in the pregnancy rates that might be due to enhanced access to EHC.

Attitudes of health care providers

Kumar *et al.* (2003) surveyed physicians, nurse practitioners, physician assistants and pharmacists in one USA state. Substantial proportions (50% of physicians and 39% of 'mid-level' practitioners) respondents favoured improving access to EHC through 'behind the counter' availability in pharmacies. Around one fifth of respondents said they would need further information about pharmacy supply before they could state whether they would support it. The authors therefore recommended a campaign to educate healthcare providers about recent scientific evidence on EHC and about CDTAs. Almost half the pharmacists said they would participate in a collaborative protocol for provision of EHC.

Attitudes of providers and users prior to deregulation

Several studies in the UK investigated the perceptions of pharmacists, doctors and potential service users prior to deregulation of EHC. A questionnaire-based study examined knowledge, use of EHC and the views of GPs and pharmacists (D'Souza and Bounds, 2001). GP respondents showed good knowledge of EHC but a reluctance to use it. Although nearly all GPs had some reservations, 55% were in favour of OTC supply. Pharmacists had less knowledge about EHC, but expressed fewer reservations about OTC supply (75% wished to supply it OTC). However, one fifth expressed an ethical objection to supply. Barrett and Harper (2000) interviewed 18 community pharmacists and six GPs to explore attitudes towards possible deregulation of EHC. Seven interviewees objected outright to the idea of deregulation and a further 14

expressed strong reservations. Folkes *et al.* (2001) examined the views of women about EHC prior to deregulation. Twenty-seven women, aged 18–19, were interviewed in family planning clinics. Most favoured deregulation but there were some concerns about overuse and over-reliance on EHC as a contraceptive method.

Recruitment strategies

Cockerill *et al.* (2004) examined recruitment strategies to increase the number of Canadian pharmacists to participate in prescribing protocols for EHC. Pharmacists were recruited through direct appeals to pharmacists, pharmacy managers and/or owners, and corporate pharmacy chains. Reference to the opportunities that participation offered to expand the pharmacist's role in patient-focused care was the most successful strategy. Peer influence was also important.

Pharmacists' experience

Most of the pharmacists and prescribers (92%) in the Washington State scheme were 'satisfied' or 'very satisfied' with the prescribing arrangements (Sommers *et al.*, 2001). Seston *et al.* (2001) interviewed 14 UK pharmacists, eight of whom were supplying EHC under PGD took part in focus groups in north-west England. A number of them appeared to lack detailed knowledge about the mode of action of EHC and misunderstandings about this appeared to influence their attitudes to deregulation. Participants were worried about the risk of litigation. EHC was accorded a special status, which seemed to go beyond its pharmacological properties and risk–benefit profile. They were also concerned about abuse or recurrent use, although none of them could provide any examples of such abuse.

Bissell and Anderson (2003) studied the PGD scheme in Manchester. Twenty-four pharmacists participated in in-depth, semi-structured interviews. The scheme was largely well received. The authors discuss the fact that many pharmacists (and users) had anxieties about the potential for 'inappropriate' or 'irresponsible' use of EHC. One pharmacist was clearly against the scheme on the grounds that it would encourage promiscuity. Other pharmacists echoed the concerns of the GPs in Ziebland's study (Ziebland, 1999) and the GPs and pharmacists in Barrett and Harper's study (Barrett and Harper, 2000) in the sense that they differentiated between 'responsible' and 'irresponsible' requests for EHC. However, there were subtle differences between pharmacists' attitudes: some thought that it was 'better' that women should come forward to the pharmacy to obtain EHC rather than take no action and risk pregnancy. Some referred to this as an indication of 'responsible' behaviour, even where the client concerned had engaged in unprotected sex. The authors suggest that the attitudes of pharmacists in this study are more nuanced in comparison with those uncovered by some other researchers in this area, and this may be a reflection of the multi-disciplinary training received by pharmacists.

Many pharmacists spontaneously referred to the benefits that the scheme accrued to the pharmacy profession. Bissell *et al.* (2005) combined the data from the Manchester pharmacist

interviews with that from interviews in London giving data from 44 interviews. Pharmacists were broadly positive and identified many benefits of the scheme for women. The scope for signposting to other service providers was seen as positive. Concerns were as above and there was also anxiety regarding the impact on male coercive behaviour. The authors called for further research to resolve these issues.

In a survey of 182 pharmacists in Durban, South Africa (Hariparsad, 2001), an average of 177 requests for EHC were made per pharmacy per year. Sixty-two per cent supplied EHC without prescription and 67% felt public awareness regarding EHC needed to be increased. Ninety-one per cent did not have any literature on EHC to hand to women, while 86% of pharmacists said that they discussed long-term contraceptive use with women requesting EHC. Sixty-eight per cent had a private consultation area.

Training and competency

Studies in the UK (Bacon *et al.*, 2003) and Canada (Neubauer *et al.*, 2004) evaluated training and the competency of pharmacists to supply EHC. Bacon *et al.* (2003) examined written (pharmacy records) and oral (telephone calls to clinical support) data from 20 out of 23 pharmacists before and during training, and at 5, 13–14 months after the launch of an EHC PGD service. They conclude that a formal course with role play was a successful training method. The pharmacists had understood the concept of client confidentiality and gained confidence over time in the use of the PGD. The course had also served as a team building exercise. The on-call consultants received 152 calls in the first 12 months of the scheme; 80% were clinical in nature and 20% concerned oral contraception. The training for subsequent cohorts of pharmacists was altered after analysis of the calls.

A faculty of pharmacy in Saskatchewan (Neubauer *et al.*, 2004) developed a workshop to educate pharmacists about EHC. Of the 285 participants, 209 paid 20 Canadian dollars to be trained and completed a test consisting of 25 questions before and after a 3 h face-to-face workshop. They were required to score $\geq 80\%$ to be accredited to prescribe EHC; 203 (71%) became prescribers. The average pre- and post-training scores were 58% and 85%, respectively. Canadian pharmacists can now also become accredited via an online programme from the Canadian Pharmaceutical Association.

Quality of pharmacist consultations

Covert participant research (mystery shopping) was used to evaluate the PGD scheme in Manchester, UK (Anderson and Bissell, 2004) and a pilot project in Toronto, Canada (Cohen *et al.*, 2004). The aim of the UK study was to evaluate whether the PGD for supply of EHC was being adhered to and to evaluate how women researchers felt the service was being delivered. Two scenarios were used about unsafe intercourse and a missed dose of oral contraceptive. Two women each visited 10 pharmacies. The protocol was largely adhered to and EHC was supplied appropriately. The women reported that the pharmacists had been courteous, polite and non judgmental, and conducted the interview privately and confidentially.

In Toronto, five trained 'secret shoppers' visited 34 pharmacies and delivered two scenarios one where EHC was clearly appropriate ($n = 17$) and one where it was not ($n = 17$). Three pharmacists provided EHC when it was inappropriate to do so. The majority treated the shopper with respect and privacy was respected in 82% of cases. The pharmacist only used a private consultation area in 22 of the encounters. The main negative comment from the shoppers regarded lack of privacy. There were several comments about the need for more information about STIs.

A 'mystery shopper' telephone survey of community pharmacists was conducted in one USA state (Bennett *et al.*, 2003). The findings showed that many community pharmacists did not have sufficient or accurate information about EHC. Only one in three pharmacists said they would be able to fill a prescription for EHC that day. Pharmacists who knew less about EHC were less likely to say they could dispense a prescription for it. The authors concluded that increased education for pharmacists would be needed as part of interventions to increase timely access to EHC.

Effects of pharmacy EHC supply on health system usage

A retrospective study (Kerins *et al.*, 2004) examined electronic patient records for women requesting emergency contraception at two emergency departments in south-east London hospitals in 2000 and 2001, before and after pharmacy supply became available. There was a statistically greater proportion of attendances requesting EHC in 2000 compared with 2001 ($P = <0.001$); this reflected a 52% decrease in requests. The authors state that there is further room for reduction in attendances at emergency departments and call for potential barriers such as high cost, pharmacy opening hours and lack of patient awareness to be addressed.

Use of pharmacies to raise awareness of emergency contraception

Sharma and Anderson (1998) studied the effect of using pharmacy window displays about EHC on raising awareness of the technology in 20 community pharmacies in one area of the UK. Enquiries about EHC increased 2–4 fold and leaflet uptake by 3–43 fold. Prescriptions for EHC rose 3-fold and pregnancy tests 4-fold.

Discussion

There is a growing international body of research into pharmacy supply of EHC. We found only one RCT but the quality of the other, qualitative and descriptive studies was generally high. Most of the studies that assessed users' experience were either focus groups or had low response rates. Women who volunteer for a focus group or reply to a questionnaire may not be representative of the rest of the population. There may also be regional variations. The evidence shows that pharmacy supply of EHC improves access and enables most women to receive it within 24 h of unprotected sexual intercourse. Women were generally satisfied with pharmacy EHC supply and the information that they received from pharmacists. There

remain some issues regarding privacy and confidentiality, and not all pharmacists conducted EHC consultations in private areas. The amount and type of information provided by pharmacists during the consultation appeared to vary considerably. There was reluctance by some women to receive information about STIs and ongoing contraceptive needs as part of the EHC consultation with the pharmacist. On the other hand, other women said they did not receive sufficient information from the pharmacist. Some pharmacists appear to be reluctant to discuss issues of regular contraception and reducing risks of sexually transmitted infections. There is also the issue of cost, in the UK; EHC can be obtained free from GPs, clinics and from some pharmacies in deprived areas under PGD. Other women have to pay £25 to obtain a pharmacy supply. In other countries, women may not only have to pay for their visit to a doctor or clinic, but also for their supply of EHC. No studies were found regarding the effect of cost.

A recurring theme from studies, particularly those prior to deregulation, was a concern amongst pharmacists, GPs and potential service users about the potential for repeated use of EHC rather than a regular method of contraception. Bissell and Anderson (2003) concluded that the pharmacists in their study had more nuanced attitudes in comparison with those uncovered by some other researchers in this area and that this may be a reflection of the multi-disciplinary training and different perspectives experienced by the pharmacists in their study. Rowlands *et al.* (2000) disproved the notion of widespread repeated use of EHC services in a retrospective study. Using the General Practice Research Database of 15 205 women, only 4% had used it more than twice in any year and >70% had used regular contraception within a year of using EHC. Ellertson *et al.* (2000) argue that women tend to overrate the health risks of emergency contraception in general, and of repeated use in particular. They state that part of the problem is undoubtedly the medical barriers that are imposed in many settings such as the requirement for pregnancy tests.

Providers also tend to overestimate the potential for misuse, although there are no studies giving any empirical basis for the fear that women abuse EHC (Ellertson *et al.*, 2000). Indeed the European study by Gainer *et al.* (2003) indicates that women's emergency contraception experience was actually a motivating factor leading to more consistent use of regular contraception. Moreover, abuse was not considered to be a problem by the women who responded to a recent Swedish questionnaire (Larsson *et al.*, 2004).

Some commentators have argued that provision of EHC in the pharmacy might lead to changes in contraceptive behaviours that adversely affect STIs (Bissell *et al.*, 2001; Stammers, 2001a,b). The findings from a fairly large RCT provide evidence to refute this view (Raine *et al.*, 2005). With no changes in the use of other contraceptives, no increase in risky sexual behaviour and no increase in the incidence of STIs among the 2000 plus women in the study, the RCT provides evidence to counter negative perceptions. Moreover, a recent Scottish study (Fairhurst *et al.*, 2004; Ziebland *et al.*, 2005) concluded that advance supply was viewed positively by women and that concerns about repeated EHC use as well as links between easier access to EHC and risky sex or changed contraceptive

behaviours appear to be unfounded. Current guidance regarding pharmacy supply of EHC in the UK (RPSGB, 2004) does not allow for advance supply; this should be reconsidered in the light of this new evidence.

Younger women are at highest risk of unprotected intercourse and unwanted pregnancy. Community pharmacies were mainly sought by women over 20-years-old and the perception of participating pharmacists was that use was mainly confined to women from higher socio-economic groups. Little is known about the reasons why younger women do not choose pharmacy supply. A recent commentary calls for more research in this area (Bissell and Anderson, 2005)

Although training provision varies in different countries, training improved pharmacists' consultations and competency regarding EHC and enabled pharmacists to direct women to other service providers as appropriate. Mystery shopping studies have indicated that the majority of pharmacists studied supplied EHC according to protocols and in a non-judgemental manner.

There is little published research to date on the impact on other parts of the health care system. One study following deregulation of EHC in the UK showed a decrease in requests for EHC in accident and emergency departments.

Most published studies focused on obtaining feedback from service users and pharmacist service providers about their experiences. Before pharmacy supply of EHC, research from the UK and USA provided an indication of the perceptions of potential service users, pharmacists and other health professionals. In the UK, quantitative studies suggested that half of the responding GPs and three quarters of pharmacists supported pharmacy supply of EHC. Attitudes expressed by GPs and pharmacists towards potential future supply in a qualitative study were more negative. Following deregulation and the introduction of protocols for NHS supply of EHC, most pharmacists appear to be very satisfied with delivering EHC services. Pharmacists seem to see EHC supply as a way to extend and improve their role in patient-focussed care. Bissell and Anderson (2003) discuss this issue of role change and professionalization strategies in more depth.

While there was considerable support for pharmacy supply in the UK, concerns were expressed about whether improved access to EHC might affect women's behaviour and lead to greater promiscuity. Furthermore, it was claimed that pharmacists would not provide information about avoiding risks from sexually transmitted infections (Stammers, 2001a). Evaluation of evidence relating to potentially positive and negative impacts of pharmacy supply is therefore important.

The review findings permit some observations and suggestions to be made for practice development and future research. Privacy emerged as an issue. OTC availability of EHC means that most pharmacies are likely to stock it. Market forces are then likely to apply, in that women will have a choice of pharmacies and can opt for one where they perceive the level of privacy meets their needs. In England and Wales, the new community pharmacy contract is predicted to increase the percentage of pharmacies with a consultation area and this should increase privacy.

Pharmacy consultations for EHC are an opportunity for the pharmacist to raise the issues of future contraception and

prevention of STIs. In the UK, the protocol requirements of PGDs are specific about the provision of information about STIs and evaluations of such schemes showed that such information was usually given. The extent to which this happens in OTC consultations is not fully clear. There is evidence to suggest that some pharmacists are reluctant to discuss these subjects. Furthermore, some women do not see this as part of the pharmacist's role. Lack of privacy may be one reason for these beliefs, but pharmacists' and women's personal views will also play a part. Some women would like to receive more information from the pharmacist than they currently do. In considering how much and which information to give a woman, pharmacists should assess each case individually. Training may be one way to enable pharmacists to practice and develop their skills in this respect.

There is insufficient evidence to know definitively whether pharmacy availability has substituted for prescribing elsewhere (and indeed, whether it has prevented termination of pregnancies which might otherwise have resulted) or whether an increase in usage of EHC has resulted. Retrospective research analysing trends in prescribing data and pregnancy terminations in countries with and without pharmacy availability of EHC may shed further light on this aspect.

Conclusion

The evidence shows that supply of EHC from pharmacies whether by prescribing protocols or OTC sale is viewed mostly positively by both users and pharmacists. Access has improved and women are able to obtain EHC more easily—though they may have to pay more for it and take it more quickly after unprotected intercourse than if they obtain it by other routes. Evidence from a reasonably large RCT provides reassurance that EHC use is not associated with an increase in risky sexual behaviour or in the incidence of STIs. Further research is warranted on the amount and type of information that should be given at the time of the EHC consultation. Some pharmacists also need to give further consideration to using private areas for EHC consultations.

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Appendix 1 Health Development Agency standards: evidence base 2000 (UK)

Transparency—evidence must include a clear and transparent account of how it was collated, which sources of information have been consulted, who was involved in collating the evidence,

how the work was funded, a full disclosure of any analysis and findings.

Systematicity—evidence identified must display clearly, regardless of the individual study, report or review methodology, the process through which the evidence was gathered and assessed.

Relevance—evidence must be judged to be relevant to health development, and in this instance to the role of community pharmacy.

See the Health Development Agency's website (<http://www.HDA-online.org.uk/evidence/eb2000>): evidence base-quality standards for evidence

Appendix II Evidence categories used by the Department of Health in National Service Frameworks

Evidence from research and other professional literature

1. A1 Systematic reviews which include at least one randomized controlled trial (RCT), e.g. systematic reviews from Cochrane or NHS centre for review and dissemination.
- A2 Other systematic and high quality reviews which synthesize references
2. B1 Individual RCTs
3. B2 Individual non-randomized, experimental/intervention studies
4. B3 Individual well-designed non-experimental studies, controlled statistically if appropriate. Includes: studies using case control, longitudinal, cohort, matched pairs or cross-sectional random sample methodologies, and well-designed qualitative studies; and well-designed analytical studies including secondary analysis.
5. C1 Descriptive and other research or evaluation not in B (e.g. convenience samples)
6. C2 Case studies and examples of good practice
7. D Summary review articles and discussions of relevant literature and conference proceedings not otherwise classified