Complete Summary

GUIDELINE TITLE

Pre-eclampsia community guideline.

BIBLIOGRAPHIC SOURCE(S)

Action on Pre-Eclampsia (APEC). Pre-eclampsia community guideline. Middlesex (UK): Action on Pre-Eclampsia (APEC); 2004. 20 p.

Milne F, Redman C, Walker J, Baker P, Bradley J, Cooper C, de Swiet M, Fletcher G, Jokinen M, Murphy D, Nelson-Piercy C, Osgood V, Robson S, Shennan A, Tuffnell A, Twaddle S, Waugh J. The pre-eclampsia community guideline (PRECOG): how to screen for and detect onset of pre-eclampsia in the community. BMJ 2005 Mar 12;330(7491):576-80. [24 references] PubMed

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Pre-eclampsia

GUIDELINE CATEGORY

Diagnosis
Evaluation
Risk Assessment
Screening

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Obstetrics and Gynecology

INTENDED USERS

Advanced Practice Nurses
Patients
Physician Assistants
Physicians
Public Health Departments

GUIDELINE OBJECTIVE(S)

- To provide recommendation for the antenatal care of pregnancies where pre-eclampsia is more likely to develop
- To outline the appropriate response to indications of the onset of pre-eclampsia for all pregnant women
- To provide a framework for antenatal care in the community in which a pregnant woman with pre-eclampsia is referred for specialist care at the appropriate time for her and her baby

Note: This guideline does not cover hospital obstetric day unit or in-patient care, post-natal onset, or post-natal management of pre-eclampsia

TARGET POPULATION

All pregnant women

INTERVENTIONS AND PRACTICES CONSIDERED

1. Identification of factors that predispose a pregnancy to pre-eclampsia
2. Referral of women with predisposing factors for early investigation
3. Community monitoring after 20 weeks for indications of pre-eclampsia according to risk level
4. Evaluation for 5 significant signs and symptoms of pre-eclampsia:
    - New hypertension
    - New and/or significant proteinuria
    - Maternal symptoms of headache and/or visual disturbance
    - Epigastric pain and/or vomiting
    - Reduced fetal movements, small for gestational age infant
5. Continued monitoring for pre-eclampsia using:
    - Diastolic blood pressure (BP)
    - Systolic blood pressure
    - Urine dipstick (measurement of proteinuria)
6. Assessment of fetal compromise
7. Referral for hospital step-up assessment or immediate admission

MAJOR OUTCOMES CONSIDERED

- Sensitivity and specificity of diagnostic tests
- Predictive value of diagnostic tests
- Maternal and fetal morbidity and mortality
- Birth weight
- Risk of pre-eclampsia

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases
Searches of Unpublished Data

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The evidence was identified from published studies and from unpublished Cochrane Reviews. In addition, the guideline developers identified a meta-analysis of risk factors for pre-eclampsia. Relevant evidence-based guidelines were also considered (and otherwise unpublished data contained within them). No studies were excluded solely on the year in which they were published, as valuable data on the natural course of the condition can be obtained from earlier studies. The remit of the guideline was agreed by the PRECOG Development Group and the MEDLINE and EMBASE electronic databases were searched using key words related to sections within the guideline. Experts in the field were also consulted.

NUMBER OF SOURCE DOCUMENTS

103

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Grading of Evidence

1a*: Evidence obtained from meta-analysis of randomised controlled trials

1b: Evidence obtained from at least one randomised controlled trial

IIa: Evidence obtained from at least one well-designed controlled study without randomisation. Includes cohort studies

IIb: Evidence obtained from at least one other type of well-designed quasi-experimental study. Includes case control studies

III: Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies, and case studies

IV: Evidence obtained from expert committee reports or opinions and/or clinical experience of respected authorities

*The highest level of evidence

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Full papers were obtained of every selected paper. These were reviewed and summarized as shown in the Evidence Tables. The studies were graded independently by two colleagues in the Pre-eclampsia Community Guideline (PRECOG) group using the grading system described in the "Rating Scheme for the Strength of the Evidence" and "Rating Scheme for the Strength of the Recommendations" fields.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The guideline has been developed by a multi-professional and lay working group (the Pre-eclampsia Community Guideline [PRECOG] development group) representing parties involved in the provision or use of maternity services in the United Kingdom. The group was convened by the national charity Action on Pre-eclampsia (APEC) and has been funded in part through educational grants or grant in kind from Bayer plc and GlaxoSmithKline plc. The group has included obstetricians and obstetric physicians who specialise in pre-eclampsia, representatives from teaching hospitals, district general hospitals and day-care obstetric units, general practitioners, midwives, and a health economist. Among the group were nominated representatives of the Royal College of Midwives, Royal College of General Practitioners, and from two key user groups: the National Childbirth Trust and Action on Pre-eclampsia. Please see page 19 of the original guideline document for names of participants.

The group followed a guideline development process that drew on methodology outlined in the National Health Service (NHS) National Institute for Health and Clinical Excellence (NICE) publication "The Guideline Development Process - Information for National Collaborating Centres and Guideline Development Groups (December 2001)" and the British Medical Journal criteria for guidelines, which is adapted from the US Agency for Health Care Policy and Research.

The PRECOG development group first defined the remit of the guideline, after which a systematic review of the literature was conducted. The recommendations were developed by the group and graded according to the levels of evidence on which they were based. In the guideline the recommendations are explicitly linked to the highest level of evidence available.

The accompanying document "Evidence Used to Develop the PRECOG Guideline" gives more detail of the methodology of the process, and the evidence supporting each recommendation. It includes:

- A description of each relevant study or meta-analysis of studies, from systemic review, which were considered in the development of the recommendation. Each piece of evidence is graded.
- A summary of the evidence, consideration of other guidelines and consensus of the PRECOG development group
- The subsequent recommendation graded according to the highest level of evidence available

At the same time a national survey of maternity units across the UK (Action on Pre-eclampsia, 2002) provided data on the patterns of referral into hospital day units for suspected pre-eclampsia, and assessment procedures and policies. This information was fed into the development group and also used to provide a statement on resource implications.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Grading of Recommendations

Grade A*: Directly based on category I evidence

Grade B: Directly based on category II evidence or extrapolated recommendation from category I evidence

Grade C: Directly based on category III evidence or extrapolated recommendation from category I or II evidence

Grade D: Directly based on category IV evidence or extrapolated recommendation from category I, II or III evidence

Good practice point (GPP): The view of the guideline development group.

Note: The grading of recommendations follows that adopted in the National Institute for Health and Clinical Excellence (NICE) guideline and differs from recent Royal College of Obstetricians and Gynaecologists (RCOG) recommendations: see "Evidence used to develop the Pre-eclampsia Community Guideline (PRECOG) guideline" in the "Availability of Companion Documents" field for further details.

*The highest grade

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Clinical Validation-Pilot Testing
External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Validation

The guideline validation process has involved:

- Peer review by independent reviewers not involved in the development of the guideline (see page 19 of the original guideline document for names). Their comments and the Pre-eclampsia Community Guideline (PRECOG) group responses are available from the offices of Action on Pre-eclampsia
- Presentation at the following national society conferences: International Society for the Study of Hypertension in Pregnancy 2003 (plenary session), Royal College of Midwives Annual Conference 2004 (poster presentation), British Congress of Obstetrics and Gynaecology 2004 (oral presentation)
- The official review process of the Royal College of Obstetrics and Gynaecology, the Royal College of Midwives, the Royal College of General Practitioners, the National Childbirth Trust. These organizations endorsed the guideline.
- Submission for publication to a peer-review journal (accepted for publication by the British Medical Journal)

Pre-pilot and Extended Pilot

From 2004 the guideline and associated materials and the audit form have been tested for:

- Ease of use
- Issues concerning the integration of the guideline into existing policies and procedures at local level
- Response of pregnant women
- Outcome measures

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The grades of recommendations (A-D) and levels of evidence (Ia, Ib, IIa, IIb, III, and IV) are defined at the end of the "Major Recommendations" field.

In addition to evidence-based recommendations, the guideline development group also identifies good practice points (GPP).

Term	Definition used in the guideline
FETAL COMPROMISE	Reduced fetal movements, small for gestational age infant
HYPERTENSION	A diastolic blood pressure of 90 mmHg or more
NEW HYPERTENSION	Hypertension at or after 20 weeks gestation in a woman with a diastolic blood pressure of less than 90mmHg before 20 weeks
PRE-EXISTING HYPERTENSION	A diastolic blood pressure pre-pregnancy or at booking (before 20 weeks) of 90mmHg or more
NEW PROTEINURIA	The presence of proteinuria as shown by 1+ (0.3g/l) or more on proteinuria dipstick testing, a protein/creatinine ratio of 30mg/mmol or more on a random sample or a urine protein excretion of 300mg or more per 24 hours
SIGNIFICANT PROTEINURIA	Urine protein excretion $\geq$300mg per 24 hr
PRE-ECLAMPSIA	New hypertension and significant proteinuria at or after 20 weeks of pregnancy, confirmed if it resolves after delivery
SUPERIMPOSED PRE-ECLAMPSIA	The development of features of pre-eclampsia in the context of pre-existing hypertension, pre-existing proteinuria or both

Note that there are no uniformly adopted definitions for pregnancy induced hypertension, gestational hypertension or severe pre-eclampsia. The terms are only used in the guideline when referring to a study definition, which is given in parentheses and/or in the Evidence Tables.

Pre-eclampsia Community Guideline (PRECOG) Recommendation 1

Identify the presence of any one of the following factors that predispose a woman in a given pregnancy to pre-eclampsia. [**Grade B/C**]

Box 1: Factors that can be measured early in pregnancy that increase the likelihood of pre-eclampsia developing in any given pregnancy

FACTOR	PRECOG Grade
First pregnancy	B
Multiparous with • Pre-eclampsia in any previous pregnancy • Ten years or more since last baby	 B B
Age 40 years or more	B
Body Mass Index of 35 or more	B
Family history of pre-eclampsia (in mother or sister)	B
Booking diastolic blood pressure of 80 mmHg or more	B
Booking proteinuria (of $\geq$1+ on more than one occasion or quantified at $\geq$0.3 g/24 hr)	C
Multiple pregnancy	B
Certain underlying medical conditions:	B

FACTOR	PRECOG Grade
• Pre-existing hypertension • Pre-existing renal disease • Pre-existing diabetes • Antiphospholipid antibodies	

PRECOG Recommendation 2

Offer pregnant women with the following predisposing factors for pre-eclampsia referral early in pregnancy for specialist input to their antenatal care plan [**Grade D/GPP**]. The factors indicate an underlying pathology, concomitant condition, or otherwise high level of obstetric risk related to pre-eclampsia, which would benefit from specialist input: this may be for further specialist investigation, for clarification of risk, or to advise on early intervention or pharmacological treatment.

It is not within the remit of this guideline to prescribe specialist-led care or to exclude general practitioner (GP) or midwife led care. It is recognised that all women benefit from a continuity of care and need midwifery care as part of their individual antenatal care plan, whatever their obstetric risk.

Box 2: Factors for referral in early pregnancy for specialist input to care

FACTOR	PRECOG Grade
Multiple pregnancy	D
Underlying medical conditions: • Pre-existing hypertension or booking diastolic blood pressure (BP) $\geq$90 mmHg • Pre-existing renal disease or booking proteinuria ($\geq$1+ on more than one occasion or quantified at $\geq$0.3 g/24 hour) • Pre-existing diabetes • Antiphospholipid antibodies	D D D D
Pre-eclampsia in any previous pregnancy	D
Any two other pre-disposing factors from Recommendation 1 (i.e., first pregnancy, age 40 years or more, body mass index $\geq$35, family history, booking diastolic BP $\geq$80 mmHg <90 mmHg)	GPP*

*Note that the effect of two pre-disposing factors on the overall likelihood of developing pre-eclampsia has yet not been studied, so there is no evidence. Therefore the recommendation that these women would benefit from specialist input to assess their obstetric risk is the opinion of the pre-eclampsia specialists in the PRECOG group.

PRECOG Recommendation 3a

Offer pregnant women one of two levels of midwife/GP-led community monitoring after 20 weeks* for indications of pre-eclampsia, according to their level of risk of developing pre-eclampsia [**Grade B**]

Box 3: Frequency of community monitoring after 20 weeks for indications of pre-eclampsia

Frequency Level	Women who Qualify**	Frequency interval	
		24 to 32 weeks' gestation	**32 weeks' gestation to delivery**
LEVEL 1	None of the predisposing factors listed in Recommendation 1	As per local protocols/NICE Antenatal guideline for low risk multiparous women	As per local protocols/NICE Antenatal Guideline for low risk multiparous women
LEVEL 2	One predisposing factor listed in Recommendation 1. No factor that requires referral in early pregnancy (Recommendation 2).	Minimum standard no more than 3-week interval between assessments, adjusted to individual needs and any changes during pregnancy***	Minimum standard no more than 2-week interval between assessments, adjusted to individual's needs and any changes during pregnancy***

*By definition pre-eclampsia cannot be diagnosed before 20 weeks' gestation.

**Note that women who have been referred early in pregnancy (See Recommendation 2) do not qualify for level 1 or level 2 or midwife or GP-led PRECOG community monitoring.

***Interval corresponds to NICE Antenatal Guideline for primiparous women.

Recommendation 3b

All pregnant women should be aware that after 20 weeks' gestation pre-eclampsia may develop between antenatal assessments and that it is appropriate for them to self-refer at any time. [**Grade B**]

Recommendation 4

At every PRECOG assessment the healthcare provider and pregnant women should identify the presence of any one of the five significant signs and symptoms of the onset of pre-eclampsia and act according to Recommendation 5. [**Grade B and C**]

Box 4: Community monitoring: content

Signs and Significant Symptoms	PRECOG Grade
• New hypertension	B

Signs and Significant Symptoms	PRECOG Grade
• New and/or significant proteinuria	B
• Maternal symptoms of headache and/or visual disturbance	C
• Epigastric pain and/or vomiting	C
• Reduced fetal movements, small for gestational age infant	B

Description of Symptoms [GPP]

As there are limited data from studies, the following are descriptions and comments from the pre-eclampsia specialists in the PRECOG group and the Confidential Enquiries into Maternal Deaths in the United Kingdom (CEMD) [Good Practice Points]:

Headache and Visual Disturbances

- Severe pounding headache, partial loss of visual acuity, bright/flashing visual disturbances. Migraines can continue during pregnancy and any migraine can be excruciating without being life threatening or associated with signs of pre-eclampsia.
- A headache of sufficient severity to seek medical advice (CEMD)

Epigastric Pain

- Epigastric pain, especially if severe or associated with vomiting. The most sinister epigastric pain is described by the sufferer as severe and is associated with definite tenderness to deep epigastric palpation (the woman winces)
- New epigastric pain (CEMD)

Recommendation 5

Box 5: Community monitoring: thresholds for further action

Description	Definition	Action by midwife/GP	PRECOG Grade
New hypertension without proteinuria after 20 weeks	Diastolic BP ≥90 and <100 mmHg	Refer for hospital step-up assessment within 48 hours	C
	Diastolic BP ≥90 and <100 mmHg with significant symptoms*	Refer for same day hospital step-up assessment	C
	Systolic BP ≥160 mmHg	Refer for same day hospital step-up assessment	C
	Diastolic BP ≥100 mmHg	Refer for same day	C

Description	Definition	Action by midwife/GP	PRECOG Grade
		hospital step-up assessment	
New hypertension and proteinuria after 20 weeks	Diastolic BP ≥90 mmHg and new proteinuria ≥1+ on dipstick	Refer for same day hospital step-up assessment	A
	Diastolic BP ≥110 mmHg and new proteinuria ≥1+ on dipstick	**Arrange immediate admission**	A
	Systolic BP ≥170 mmHg and new proteinuria ≥1+ on dipstick	**Arrange immediate admission**	A
	Diastolic BP ≥90 mmHg and new proteinuria ≥1+ on dipstick and significant symptoms*	**Arrange immediate admission**	A
New proteinuria without hypertension after 20 weeks	1+ on dipstick	Repeat pre-eclampsia assessment in community within 1 week	C
	2+ or more on dipstick	Refer for hospital step-up assessment within 48 hours	C
	≥1+ on dipstick with significant symptoms*	Refer for same day hospital step-up assessment	C
Maternal symptoms or fetal signs and symptoms without new hypertension or proteinuria	Headache and or visual disturbances with diastolic blood pressure less than 90 mmHg and a trace or no protein	Follow local protocols for investigation. Consider reducing interval before next PRECOG assessment	C
	Epigastric pain with diastolic blood pressure less than 90 mmHg and a trace or no protein	Refer for same day hospital step-up assessment	C
	Reduced movements or small for gestational age infant with diastolic blood pressure less than 90 mmHg and a trace or no protein	Follow local protocols for investigation of fetal compromise. Consider reducing interval before next full pre-eclampsia assessment	C

*Epigastric pain, vomiting, headache, visual disturbances, reduced fetal movements, small for gestational age infant

Recommendation 6

Reducing Errors in Blood Pressure Measurement

- Use accurate equipment (mercury sphygmomanometer or validated alternative method). [**Grade C**]

- Use sitting or semi-reclining position so that the arm to be used is at the level of the heart. [**GPP**]
- Do not take the blood pressure in the upper arm with the woman on her side as this will give falsely lower readings.[**Grade D**]
- Use appropriate size of cuff: standard size (13 x 23 cm) for an arm circumference of up to 33 cm, a large size (33 x 15 cm) for an arm circumference between 33 and 41cm) and a thigh cuff (18 x 36cm) for an arm circumference of 41cm or more. There is less error introduced by using too large a cuff than by too small a cuff. [**Grade C**]
- Deflate the cuff slowly, at a rate of 2 mmHg to 3 mmHg per second, taking at least 30 seconds to complete the whole deflation. [**Grade D**]
- Use Korotkoff V (disappearance of heart sounds) for measurement of diastolic pressure, as this is subject to less intra-observer and inter-observer variation than Korotkoff IV (muffling of heart sounds) and seems to correlate best with intra-arterial pressure in pregnancy. [**Grade A**] In the 15% of pregnant women whose diastolic pressure falls to zero before the last sound is heard, then both phase IV and phase V readings should be recorded (e.g., 148/84/0 mmHg). [**GPP**]
- Measure to the nearest 2 mmHg to avoid digit preference. [**Grade D**]
- Obtain an estimated systolic pressure by palpation, to avoid auscultatory gap. [**Grade D**]
- If two readings are necessary, use the average of the readings and not just the lowest reading. This will minimize threshold avoidance (the tendency to repeat a reading until one that is below a known threshold is recorded that requires no action). [**GPP**]

PRECOG Recommendation 7

Improving Reliability of Proteinuria Estimate Using Dipstick Testing

The performance of a semi-quantitative dipstick is dependent on many variables, including how the dipstick is read (by all comers to a clinic, staff at a routine clinic, trained research observers, or a machine) and the urine concentration of the sample. The performance of quantitative methods of measuring protein is also dependent on a number of factors, such as the adequate collection of a 24 hour sample and the method used to measure protein.

- Reduce false positive results by training the reader of the dipstick to use the correct methodology to read the dipstick tests. Manufacturer's recommendations should be followed. [**Grade C**]
- Automated dipstick readers reduce reader error [**Grade C**]
- Do not repeat a test on a second sample, as this does not improve the predictive value of result for significant proteinuria [**Grade D**]
- Use a 24 hour urine collection to quantify excreted protein. The use of a protein/ creatinine ratio instead of a 24 hour urinary protein requires local confirmation of performance, as the method of measuring proteinuria has been shown to modify the results [**Grade C**]
- Reduce concentration-related errors by assessing specific gravity or urine creatinine simultaneously with the protein dip result [**Grade C**]
- When required, confirm a 1+ result from a dipstick test for proteinuria by measuring protein excretion in a 24 hour urine collection [**Grade C**]

Recommendation 8

Assessment of Fetal Compromise in the Community

There is limited evidence to recommend a particular method of determining fetal growth and well being in the community, with no evidence to support the superiority of one method over another.

Please refer to the companion Evidence Document (see "Availability of Companion Documents" field) for a summary of the National Institute for Health and Clinical Excellence (NICE) Antenatal Guideline recommendations on assessment of fetal size and wellbeing. The Royal College of Obstetricians and Gynaecologists (RCOG) Guideline recommendations, entitled "RCOG Guideline Investigation and Management of the Small for Gestational Age Fetus" covers the method and predictive value of biometric and biophysical tests for diagnosis and management of the fetus. (RCOG, 2002)

Definitions:

Grading of Recommendations

Grade A*: Directly based on category I evidence

Grade B: Directly based on category II evidence or extrapolated recommendation from category I evidence

Grade C: Directly based on category III evidence or extrapolated recommendation from category I or II evidence

Grade D: Directly based on category IV evidence or extrapolated recommendation from category I, II or III evidence

Good practice point (GPP): The view of the guideline development group.

Note: The grading of recommendations follows that adopted in the National Institute for Health and Clinical Excellence (NICE) guideline and differs from recent Royal College of Obstetricians and Gynaecologists (RCOG) recommendations: see "Evidence used to develop the Pre-eclampsia Community Guideline (PRECOG) guideline" in the "Availability of Companion Documents" field for further details.

*The highest grade

Grading of Evidence

1a*: Evidence obtained from meta-analysis of randomised controlled trials

1b: Evidence obtained from at least one randomised controlled trial

IIa: Evidence obtained from at least one well-designed controlled study without randomisation. Includes cohort studies

IIb: Evidence obtained from at least one other type of well-designed quasi-experimental study. Includes case control studies

III: Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies, and case studies

IV: Evidence obtained from expert committee reports or opinions and/or clinical experience of respected authorities

*The highest level of evidence

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Appropriate screening and early detection of pre-eclampsia in the community and appropriate referral from community to step-up care
- If the recommendations in this guideline are followed, pregnant women will be alerted to the possibility of developing pre-eclampsia during pregnancy, the symptoms to look out for, and the care they may need.

Subgroup Most Likely to Benefit

As more women in the population with predisposing factors will develop pre-eclampsia -- by definition of relative risk -- early detection and reduction in morbidity will benefit this group more overall.

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Incorporating the Guideline into Local Policy and Practice

Under the auspices of the charity Action on Pre-eclampsia there is an active implementation process with the primary aim of supporting the incorporation of the Pre-eclampsia Community Guidelines (PRECOG) guideline into local antenatal care schedules in the United Kingdom (UK). To facilitate this, the guideline is available as part of a PRECOG package, available by e-mail, CD-ROM (Word documents for cut/paste or pdf files for printing), or hard copy. The PRECOG package includes:

- PRECOG adoption, training, and implementation flowcharts
- Resource implication audit tool
- The guideline with supporting graded evidence and summary evidence tables
- PRECOG slide resource kit for presentation and training
- User aids including PRECOG stickers, A4 laminated care cards, woman information leaflets
- Audit form and audit support sheet

There is a central contact-line for information (Action on Pre- eclampsia on 0208 863 3271 or email mikerich@apec.org.uk or visit http://www.apec.org.uk/home.htm. Expert speakers are available on request to visit locally and further training is available at 6-monthly pre-eclampsia health seminars.

Resource Implications

This section discusses the likely impact on the National Health Service (NHS) of implementing the recommendations of the guideline in the UK. The major source of this information is a survey of maternity units, undertaken by Action on Pre-eclampsia (APEC) in 2002. A resource implication audit tool to assess the local resource implications is available as part of the Pre-eclampsia Community Guideline (PRECOG) package.

Recommendation 1: Identification of factors that predispose a pregnancy to pre-eclampsia

- This is part of the routine booking assessment and therefore has no significant resource implications

Recommendation 2: Offer referral for early investigation for women with predisposing factors

- The majority of women with these factors would be referred as part of current practice. There may be some increase in referrals for some groups, such as those identified in the Good Practice Point (GPP). The degree to which this impacts on specialist antenatal clinics at a local level depends on current local protocols and can be assessed using the local audit tool.

Recommendation 3a: Offer women one of two levels of midwife/general practitioner (GP)-led community monitoring after 20 weeks for

indications of pre-eclampsia according to their level of risk if developing pre-eclampsia

- This recommendation corresponds to the recommendations of the National Institute for Health and Clinical Excellence (NICE) guideline on antenatal care. There should therefore be no additional resource implications, although this will depend on the degree to which the NICE guideline has been implemented, which can be assessed using the local audit tool.

Recommendation 3b: All pregnant women should be aware that after 20 weeks gestation pre-eclampsia may develop between antenatal assessments, and that it is appropriate for them to self-refer at any time [Grade B]

- Women are required to receive information at booking but this information needs to be reinforced during subsequent visits. This may involve some resource implications for the National Health Service if this requires additional time spent on antenatal visits.

Recommendation 4: At any PRECOG assessment the healthcare provider and pregnant women should identify the presence of any of the five significant signs and symptoms of the onset of pre-eclampsia and apply the appropriate threshold for action

- The signs are routinely investigated at each antenatal visit and therefore significant resource implications associated with this recommendation are unlikely.

Recommendation 5: Community monitoring: thresholds for action

- This is routine clinical practice, but there may be major resource implications in areas without daycare provision if they were to set these up. The 2002 Action on Pre-eclampsia survey found that 12 of the 72 hospitals with more than 2,000 births annually do not have a daycare unit, although this was largely because of the wide catchment areas. In these areas women would usually be seen in the inpatient or delivery areas or in a designated area of the antenatal clinic and thus it may not be necessary to set up a designated day care unit.

Recommendation 6: Reducing errors in blood pressure measurement

- The major resource implication associated with this recommendation is to ensure that all equipment used for measuring blood pressure is calibrated correctly. In areas where such routine checks are not made there will be some resource implications associated with setting up such a programme.

Recommendation 7: Improving reliability of proteinuria using dipstick testing

- The NICE guideline recommends the use of dipstick reading at every antenatal visit and therefore this recommendation is unlikely to be associated

with significant resource implications. However, there may be resource implications associated with introducing both training in the methodology of reading dipstick tests and in the use of automated dipstick readers.

Recommendation 8: Assessment of fetal compromise in the community

- Assessment of fetal compromise is a routine component of antenatal care in the community and thus, this recommendation is unlikely to be associated with significant resource implications.

Overall, therefore there are unlikely to be significant resource implications associated with the implementation of the PRECOG community guideline, although the local impact will depend on the degree to which the NICE guideline on antenatal care has been implemented and local circumstances. The likely local resource implications can be assessed using the resource implication audit tool.

IMPLEMENTATION TOOLS

Foreign Language Translations
Patient Resources
Pocket Guide/Reference Cards
Slide Presentation
Tool Kits

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness
Timeliness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Action on Pre-Eclampsia (APEC). Pre-eclampsia community guideline. Middlesex (UK): Action on Pre-Eclampsia (APEC); 2004. 20 p.

Milne F, Redman C, Walker J, Baker P, Bradley J, Cooper C, de Swiet M, Fletcher G, Jokinen M, Murphy D, Nelson-Piercy C, Osgood V, Robson S, Shennan A, Tuffnell A, Twaddle S, Waugh J. The pre-eclampsia community guideline

(PRECOG): how to screen for and detect onset of pre-eclampsia in the community. BMJ 2005 Mar 12;330(7491):576-80. [24 references] PubMed

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2004

GUIDELINE DEVELOPER(S)

Action on Pre-eclampsia - Private Nonprofit Organization

SOURCE(S) OF FUNDING

Not stated

GUIDELINE COMMITTEE

PRECOG Development Group

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

PRECOG Development Group Members: Phil Baker, Obstetrician; Julian Bradley, General Practitioner, RCGP Representative; Janet Bray, Medical Writer; Carol Cooper, General Practitioner; David Davies, Obstetrician; Kirsten Duckitt, Obstetrician; Michael de Swiet, Obstetric Physician; Gillian Fletcher, Representing pregnant women; Mervi Jokinen, Midwife, RCM Representative; Fiona Milne, Guideline Coordinator; Deidre Murphy, Obstetrician; Catherine Nelson-Piercy, Obstetric Physician; Vicki Osgood, Obstetrician; Chris Redman, Obstetric Physician; Steve Robson, Obstetrician; Andrew Shennan, Obstetrician; Angela Tuffnell, Midwife; Sara Twaddle, Health Economist; James Walker, Obstetrician; Jason Waugh, Obstetrician

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

All members of the group have been invited to report conflicts of interest and none were recorded.

ENDORSER(S)

National Childbirth Trust - Medical Specialty Society
Royal College of General Practitioners - Medical Specialty Society
Royal College of Midwives - Medical Specialty Society
Royal College of Obstetricians and Gynaecologists - Medical Specialty Society

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format from the Action on Pre-eclampsia (APEC) Web site.

Electronic copies also available from the British Medical Journal Web site.

Print copies: Available from the Action on Pre-eclampsia, 84-88 Pinner Road, HARROW, Middlesex HA1 4HZ, England, UK; Phone: 020 8863 3271

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Evidence used to develop the PRECOG guideline. 2004. 59 p. Electronic copies: Available in Portable Document Format (PDF) from the Action on Pre-eclampsia (APEC) Web site.
- Evidence tables. 2004. 106 p. Electronic copies: Available in Portable Document Format (PDF) from the Action on Pre-eclampsia (APEC) Web site.

Print copies: Available from the Action on Pre-eclampsia, 84-88 Pinner Road, HARROW, Middlesex HA1 4HZ, England, UK; Phone: 020 8863 3271

Additionally, a PRECOG implementation package, containing adoption, training, and implementation flowcharts, a resource implication audit tool, a slide resource kit, audit forms and support sheets, and user aids, including stickers, laminated care cards, and patient information leaflets, is available by e-mail, CD-ROM (Word documents for cut/paste or PDF files for printing), or hard copy. There is a central contact-line for information (Action on Pre- eclampsia on 0208 863 3271 or email mikerich@apec.org.uk or visit http://www.apec.org.uk/home.htm.

PATIENT RESOURCES

The following is available:

- Pre-eclampsia community guideline. Information for women. 2 p. Electronic copies: Available in Portable Document Format (PDF) from the Action on Pre-eclampsia (APEC) Web site.
- Multilingual information. Available from the Action on Pre-eclampsia (APEC) Web site.

NGC STATUS

This NGC summary was completed by ECRI on May 23, 2005. The information was verified by the guideline developer on June 17, 2005.

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