# Postpartum Hypertension
# Full Clinical Guideline

UHDB/PN/11:22/H1

## Contents



## 1. Introduction

Postpartum hypertension is a common complication of pregnancy which, if poorly treated carries increased risk of maternal morbidity and mortality from cerebral haemorrhage. It is well recognised that systolic severe hypertension (>160mmHg) requires urgent treatment to prevent such complications.

One third of women who have had pregnancy induced hypertension (PIH) or pre-eclampsia (PET) have sustained hypertension in the postnatal period

Over 50% of women who have had antenatal hypertension requiring treatment will have postnatal hypertension and if delivery was required preterm due to maternal hypertensive disease this increases to over 75%

Hypertension (affecting up to 12% of women) can occur de novo in the postnatal period as physiological cardiovascular changes of pregnancy resolve and accumulated extravascular fluid is mobilised, resulting in rises in both systolic and diastolic BP in the first 4 days.

New onset postpartum PET is more likely to be associated with symptoms (headaches, blurred vision, nausea, vomiting within 72 hours of delivery) and complications, especially eclampsia. Over 16% of cases of eclampsia occur postnatal and over 50% of these more than 48 hours after delivery.

Many of these women will be normotensive in the immediate/ early postnatal period due to the intravascular volume depletion associated with delivery. This increases the risk of unrecognised hypertension after discharge to the community unless appropriate guidance on monitoring is given to the community team.

## 2. Purpose and Outcomes

- To advise on the principles of management of postnatal hypertension.
- To advise on options for antihypertensive therapy in both acute and chronic postnatal hypertension and compatibility with breastfeeding
- Suggested regimes for ongoing management and monitoring
- Guidance on community and hospital follow up

## 3. Abbreviations/Definitions

***BP*** Blood Pressure

***Chronic/pre-existing hypertension*** Hypertension present at/prior to booking visit or before 20 wks

***Gestational or pregnancy induced hypertension (PIH/GH)*** New hypertension after 20 weeks without significant proteinuria

***Pre-eclampsia (PET)*** New hypertension after 20 weeks with significant proteinuria

***Superimposed pre-eclampsia*** New symptoms/signs PET after 20 weeks in a woman with chronic hypertension

***Eclampsia*** Occurrence of one or more seizures in a woman with pre-eclampsia

***Mild hypertension*** Diastolic BP 90-99mmHg and/or systolic BP 140-149mmHg

***Moderate Hypertension*** Diastolic BP 100-109mmHg and/or systolic 150-159mmHg

***Severe Hypertension*** Diastolic BP 110mmHg or greater and/or Systolic BP 160mmHg or greater

## 4. Key Responsibilities and Duties

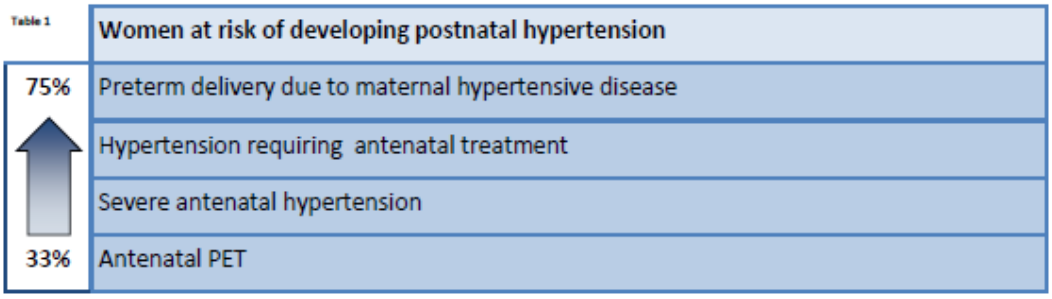
Obstetrician: diagnosis/definition of hypertension, appropriate monitoring and treatment, adequate communication to GP and CMW on discharge, hospital follow up arrangements where appropriate.

Hospital and Community Midwifes: Monitor postnatal BP according to local guidance, appropriate escalation of postnatal hypertension or symptoms suggestive of postnatal PET. Provide postnatal women with advice and patient information on postnatal hypertension and symptoms of PET to report within first 72 hours post birth

Consultant Obstetricians: Identify women with pregnancy related hypertension either antenatal or postnatal who would benefit from hospital postnatal follow up, planning for future pregnancy or specialist referral.

## 5. Management of Postnatal Hypertension

### 5.1 Risk Factors for Postnatal Hypertension




### 5.2 Suggested Antihypertensive Agents for Treatment of Postnatal Hypertension

| Drug | Dose | Contra-indications | Side effects include | Safe breast feeding |
|---|---|---|---|---|
| CHRONIC TREATMENT | | | | |
| Nifedipine (SR) | 10-40mg BD | Advanced Aortic Stenosis | Headaches<br>Tachycardia<br>Palpitations<br>Flushing | ✔ |
| Atenolol | 25-100mg OD | Asthma<br>Bradycardia<br>Heart block<br>Cardiac failure | Postural hypotension<br>Headache<br>Fatigue<br>Urinary hesitance | ✔ |
| Enalapril | 5-20mg BD | AKI | Hypotension<br>Cough<br>Renal impairment | ✔ |
| Labetalol (if available) | 100mg BD — 200mg QDS | As Atenolol | As Atenolol | ✔ |
| Nifedipine (MR)Only use once control established on Nifedipine SR | 30-60mg OD | | | |
| ACUTE TREATMENT | | | | |
| Labetalol | 200mg oral 200mg IV 20 mins later RPTD 20 mins intervals as required | As above | As above | ✔ |
| Hydralazine | 5-10mg IV (or IM) repeated if necessary | Severe tachycardia<br>High output cardiac failure | Headache<br>Anxiety<br>Flushing<br>Arrhythmias | ✔ |
| Nifedipine POST NATAL ONLY | 10mg sublingual RPTD 20 mins intervals if required | Do not use icw MgSO4 (Couse profound hypotension) | As above | ✔ |

The aim is to choose an agent which will reliably control BP without diurnal peaks and troughs (may be best achieved with twice daily regimens). However use of once daily dosing agents should be considered as this may improve compliance.

Methyldopa if used in antenatal period should be discontinued postnatally because of the risk of maternal sedation, postural hypotension and postnatal depression

*Second line* Agents
Other agents considered safe for breastfeeding are Captopril and Metoprolol

Amlodipine is considered a safe second line Calcium channel blocker (5-10mg once daily) but there is insufficient evidence on safety to recommend its use in breastfeeding.

There is insufficient evidence on ACE inhibitors other than enalapril and captopril and on angiotensin receptor blocking agents for use in breastfeeding mothers

*Cautions*
Nifedipine may increase the BP lowering effect of other antihypertensives when used in combination
Sublingual Nifedipine and MgSO4 used together may result in profound hypotension
Both Nifedipine and Labetolol may result in alterations in blood sugar control in women with diabetes

If uncertain about which agent to use it should be discussed with a Consultant Obstetrician.

**5.3 Management of Postnatal Hypertension in Women with Chronic Hypertension**
See Appendix 1 for suggested flow chart

**5.4 Management of Postnatal hypertension in Women without Chronic Hypertension**
See Appendix 2 for suggested Flow chart

**5.5 Patient Information**
Give the patient information leaflet Postnatal hypertension (high blood pressure) to all women with pre-existing hypertension, pregnancy induced hypertension, Pre-eclampsia or new postnatal hypertension before discharge.

Advise all women of the symptoms of PET within the first 72 hours after birth which they should report and how to do this

**5.6 Recommendations for BP Monitoring and Follow up after Discharge to Community**

**5.6.1** Chronic Hypertension (no PET)
See Appendix 1 flow chart

Communication to GP/CMW on discharge should include:

- antihypertensive treatment on discharge
- if woman is breastfeeding
- Thresholds for stepping down anti-hypertensive medication
- Advice to consider switching back to pre-pregnancy medication at 2 weeks or 6-8 weeks depending on infant feeding plans

Hospital follow up at 6-8 weeks may be advised for individual patients especially if future pregnancy planned, pregnancy BP control difficult or complicated pregnancy. This should be confirmed with the womans own Consultant before discharge

**5.6.2** Pregnancy Induced Hypertension (no PET)
See appendix 2 flow chart for advice on duration of inpatient monitoring and frequency of BP monitoring

Communication on discharge to CMW/GP should include

- Treatment at time of discharge
- Thresholds for stopping/reducing treatment
- Thresholds for starting treatment or referral back
- Review need for ongoing treatment at 2 weeks postnatal
- If requiring ongoing treatment at 6-8 weeks postnatal should be offered a specialist referral for investigation of BP

**5.6.3** Pre-eclampsia

See Appendix 2 flow chart

Discharge to Community is only appropriate if

- There are no symptoms of PET
- BP is less than 150/100
- Blood tests are stable or improving

Communication to GP/CMW should include

- Assess for symptoms PET each visit
- Frequency of BP monitoring
- Thresholds for reducing/stopping treatment
- Thresholds for referral back
- Need for specialist referral if BP or proteinuria persistent at 6-8 week postnatal review

Hospital follow up may be advisable for the following

- Women with abnormal blood results on discharge as these will need repeating at 6-8 weeks post birth
- Women with very high levels of proteinuria pre delivery
- Women with preterm delivery
- Women with difficult BP control or those requiring double anti-hypertensive agents

The need for hospital follow up should be discussed with the woman's own Consultant before discharge and arrangements made as appropriate

**5.7 Suspected Postpartum Pre-eclampsia**

The possibility of imminent pre-eclampsia or eclampsia should be considered up to 4 weeks postpartum if any of the following develop
Immediate referral for assessment is recommended

- Severe headaches unrelieved by regular analgesics
- Blurred vision, flashing lights, double vision, floaters
- Vomiting
- Hypertension
- Proteinuria
- Breathlessness due to pulmonary oedema
- Sudden swelling of face, hands or feet
- Seizure within 4 weeks of birth

## 6. Monitoring compliance and Effectiveness

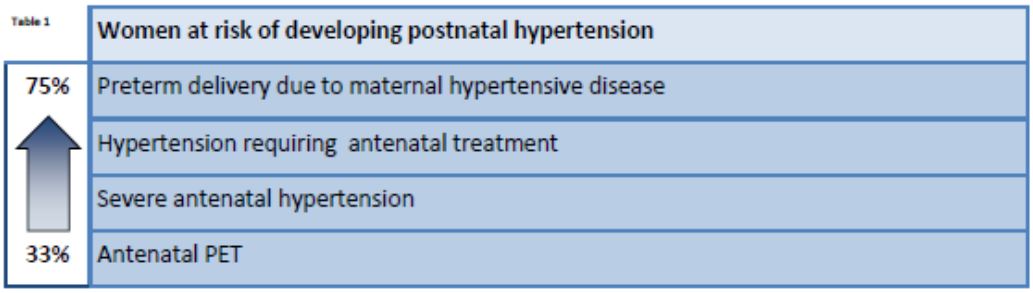
Audit antihypertensive management of postpartum hypertension
Audit communication to GP on discharge

## 7. References

Hypertension in Pregnancy NICE, October 2016

Smith M, Waugh J, Nelson –Piercy C Management of postpartum hypertension: The Obstetrician and Gynaecologist 2013; 15: 45-50

**Appendix 1**

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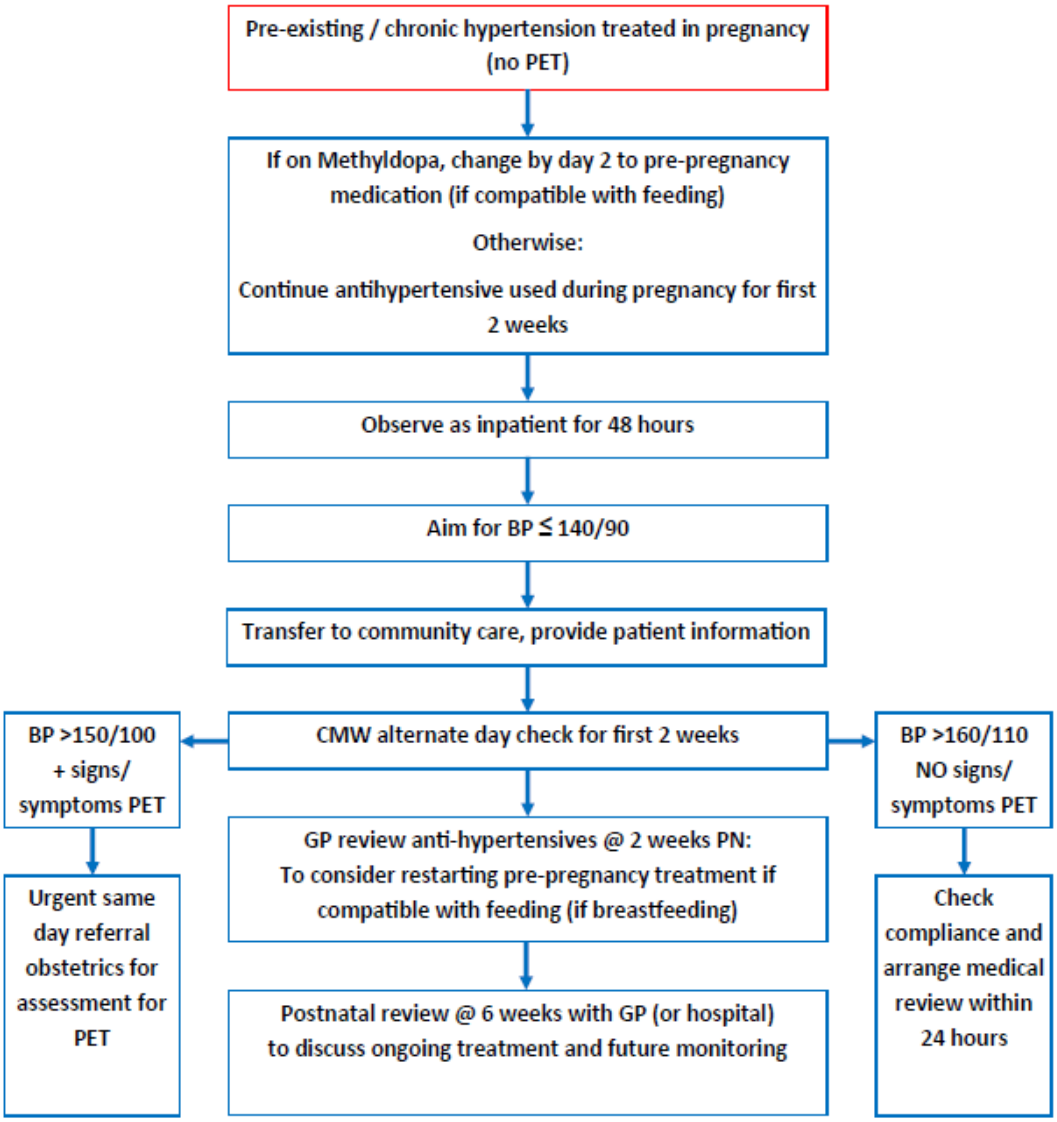
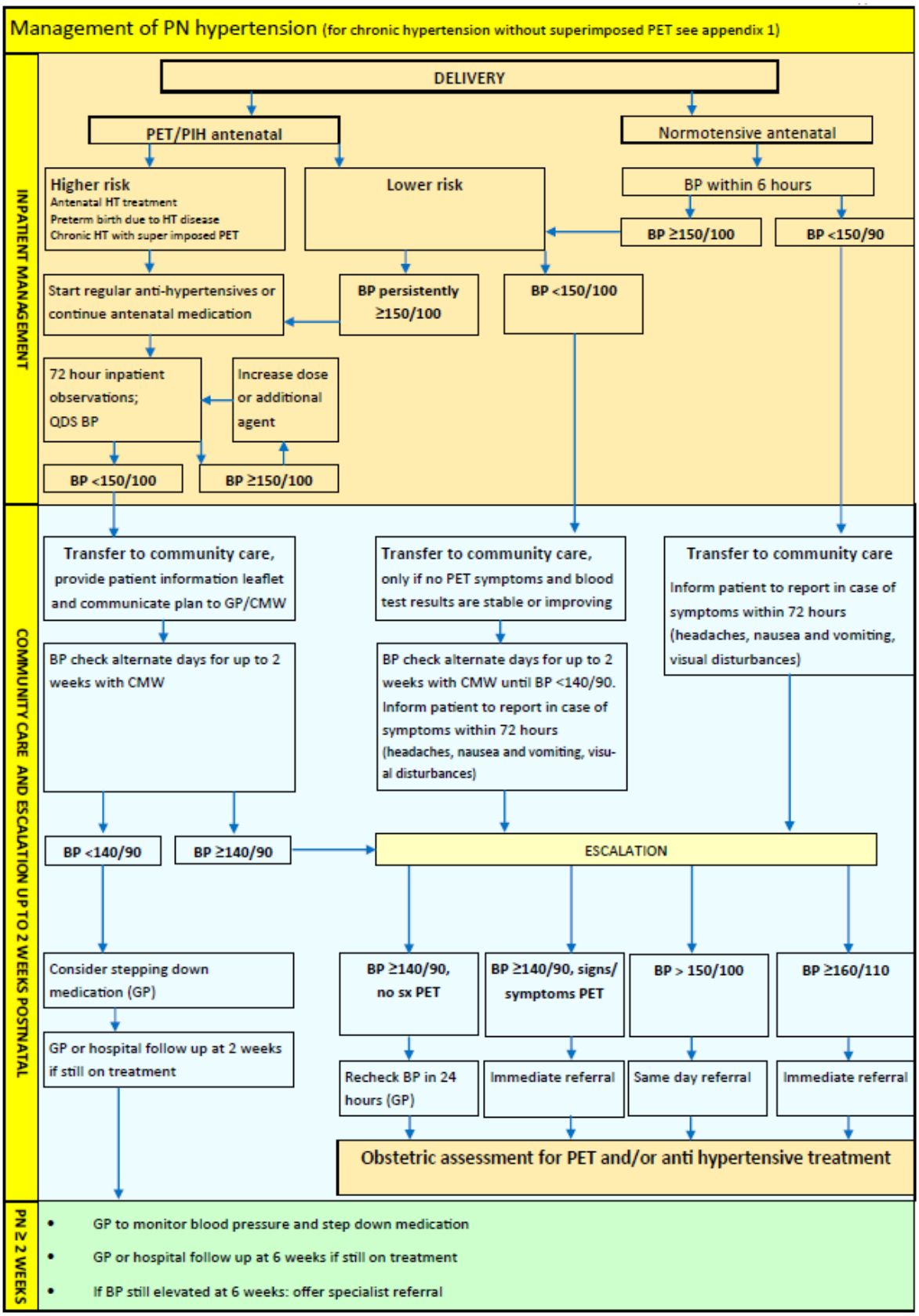
Appendix 1

## Management of PN hypertension in women with chronic hypertension




Management of PN hypertension (for chronic hypertension without superimposed PET see appendix 1)
INPATIENT MANAGEMENT
DELIVERY
PET/PIH antenatal
Normotensive antenatal
Higher risk
Antenatal HT treatment
Preterm birth due to HT disease
Chronic HT with super imposed PET
Lower risk
BP within 6 hours
BP ≥150/100
BP <150/90
Start regular anti-hypertensives or continue antenatal medication
BP persistently ≥150/100
BP <150/100
72 hour inpatient observations; QDS BP
Increase dose or additional agent
BP <150/100
BP ≥150/100
COMMUNITY CARE AND ESCALATION UP TO 2 WEEKS POSTNATAL
Transfer to community care, provide patient information leaflet and communicate plan to GP/CMW
Transfer to community care, only if no PET symptoms and blood test results are stable or improving
Transfer to community care
Inform patient to report in case of symptoms within 72 hours (headaches, nausea and vomiting, visual disturbances)
BP check alternate days for up to 2 weeks with CMW
BP check alternate days for up to 2 weeks with CMW until BP <140/90. Inform patient to report in case of symptoms within 72 hours (headaches, nausea and vomiting, visual disturbances)
BP <140/90
BP ≥140/90
ESCALATION
Consider stepping down medication (GP)
GP or hospital follow up at 2 weeks if still on treatment
BP ≥140/90, no sx PET
BP ≥140/90, signs/ symptoms PET
BP > 150/100
BP ≥160/110
Recheck BP in 24 hours (GP)
Immediate referral
Same day referral
Immediate referral
Obstetric assessment for PET and/or anti hypertensive treatment
PN ≥ 2 WEEKS
GP to monitor blood pressure and step down medication
GP or hospital follow up at 6 weeks if still on treatment
If BP still elevated at 6 weeks: offer specialist referral

## POSTNATAL HYPERTENSION (HIGH BLOOD PRESSURE)

### Advice for women, their partners and GP

This information is for women who have had hypertension (high blood pressure) either during pregnancy or shortly following the birth of their baby

This includes women with:

- High blood pressure before pregnancy (pre-existing hypertension)
- High blood pressure as a result of pregnancy (gestational or pregnancy induced hypertension)
- Pre-eclampsia during or following pregnancy (a pregnancy disease which causes high blood pressure and leakage of protein in urine)
- New onset postnatal hypertension

Women who have raised blood pressure during pregnancy have a greater risk of hypertension in future pregnancies and of early onset (non pregnancy related) hypertension or other health issues in later life. Some of these risks can be reduced by making healthy lifestyle choices and having regular blood pressure check ups with your GP. This information leaflet will tell you what you can do over the next few weeks, any concerning symptoms to report and what to consider for the future.

### What happens after I am sent home?

Following the birth of your baby we will recommend your Community Midwife (CMW) monitors your blood pressure in the first few weeks. If it is higher than expected you might need to return to hospital for some treatment. There are many safe drugs that can be used so you will not need to stop breastfeeding. It is important to treat high blood pressure to prevent you from coming to harm.

If you have been discharged home from hospital already on blood pressure medication (treatment) your CMW will monitor your blood pressure as above, but it is also recommended that you see your GP about 2 weeks following discharge to see if this medication is still needed as it may be possible to reduce the treatment. If treatment needs to be continued you will need to see your GP again at 6-8 weeks after your baby's birth to make sure that your high blood pressure is improving as expected following pregnancy and is not due to another cause.

Occasionally high blood pressure can worsen in the first 3-5 days after birth and rarely pre-eclampsia can develop for the first time. If you experience severe headaches, nausea, blurred vision or unusual upper tummy pain it is important to report this to your Community Midwife so that you can be checked to make sure there is no sign of this.

If you are on blood pressure treatment and feel dizzy or lightheaded on standing it is possible your blood pressure may be lower than necessary. We would recommend seeing your GP (family doctor) to have your blood pressure control checked.

### Will I get high blood pressure in my next pregnancy?

If you had high blood pressure before this pregnancy or developed high blood pressure or preeclampsia during this pregnancy you have an increased risk of high blood pressure again in any future pregnancy.
How high this risk is depends on how severe your blood pressure has been and how early in pregnancy this started.

If your blood pressure became raised only in the later part of pregnancy (after 37 weeks) there is about a 1 in 10 chance that it could happen again at a similar or later stage of pregnancy, but is likely to be less severe than this time.

If your blood pressure increased in early pregnancy or had a significant effect on the pregnancy (requiring delivery before 34 weeks) there is about a 4 in 10 chance that you could be affected in a future pregnancy. This is most likely to occur a few weeks later than in this pregnancy but can still be severe. You may wish to discuss this further with your Obstetrician.

If you had very severe high blood pressure requiring much earlier delivery (before 28 weeks) your Obstetrician will usually offer you the chance to come back for follow up to discuss your own specific risks for future pregnancy.

If you have high blood pressure requiring treatment when you are not pregnant it is important to plan for a future pregnancy to optimise blood pressure control and to use safe medication for your pregnancy. You can discuss this with your Obstetrician or ask your GP to refer you for preconception advice. This is even more important if you have a long interval between pregnancies.

In any future pregnancy we will recommend that you are referred to an Obstetrician for your pregnancy care. We will also recommend you take aspirin 150 mg once daily from 12 weeks of pregnancy to reduce the risk of high blood pressure.

**Will I have high blood pressure or other health problems when I'm older?**

If you have had high blood pressure in pregnancy you have a higher chance of developing other health problems later in life, especially if your baby needed delivery before 37 weeks of pregnancy. You may be able to reduce these risks if you have regular check ups and help yourself to stay healthy.

The other health problems related to high blood pressure include:

- Chronic hypertension or long term high blood pressure
- Cardiovascular disease – problems affecting your heart or blood vessels such as angina or palpitations
- Cerebrovascular disease – problems with blood vessels in your brain which can lead to strokes or mini-strokes or dementia
- Kidney disease
- Eye disease that can lead to poor vision or blindness
- Venous thromboembolism – blood clots in the deep veins that can move to the lungs

**What can I do to help myself to stay healthy?**

We recommend that you have your blood pressure checked at least once a year at your GP surgery to make sure it remains normal. Your doctor may also want to check your cholesterol levels.

If you have high blood pressure that requires treatment after the pregnancy it is important to make sure it is well controlled as this reduces your chances of complications now and in the future. Make sure you follow the plan for your blood pressure checks with your Midwife and GP. Make sure you take the medications advised as these will keep you safe. If you have any questions about your blood pressure you can speak to your GP, Midwife or Obstetrician.

There are other things you can do once you have recovered from your baby's birth in order to stay healthy and reduce your risks of high blood pressure in the future:

- Do regular exercise – for example 20 minutes fast walking a day
- Eat a healthy balanced diet – your GP surgery can advise you on this

- Drink less alcohol (less than 14 units a week is recommended)
- Keep to a healthy weight for your height – your midwife or GP can give you some advice on this
- Do not smoke or take recreational drugs – your GP can give you advice on local support available to help you stop
- If you are diabetic make sure you keep your blood sugars within target as advised by your diabetic doctor and GP

**More information**
If you have any further questions about the information in this leaflet you can discuss with your midwife, GP or obstetrician.
Further information can also be obtained from:

NHS Choices for information on healthy eating and exercise following childbirth:
www.nhs.uk/conditions/pregnancy-and-baby/pages/keeping-fit-and-healthy.aspx

Action on Pre-eclampsia
www.action-on-pre-eclampsia.org.uk

NICE – NG133 – Hypertension in pregnancy – diagnosis and management
https://www.nice.org.uk/guidance/ng133/informationforpublic

**Documentation Control**

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|---|---|---|---|---|
| **Reference Number:**<br><br>UHDB/PN/11:22/H1 | **Version: UHDB 2** | | **Status: Final** | |
| Version / Amendment | Version | Date | Author | Reason |
| | 1 | May 2019 | Miss RJ Hamilton<br>Consultant Obstetrician | New clinical guideline |
| | 2 | Nov 2022 | Miss RJ Hamilton<br>Consultant Obstetrician<br>Miss S Rajendran<br>Consultant Obstetrician, | Triannual review |
| **Intended Recipients:** All staff caring for women postpartum | | | | |
| **Training and Dissemination:**<br>Cascaded through lead sisters/midwives/doctors; Published on Intranet; NHS mail circulation list; | | | | |
| **To be read in conjunction with:** | | | | |
| Consultation with: | Obstetricians / Midwifery Staff | | | |
| Business Unit sign off: | 15/11/2022: Maternity Guidelines Group:<br>Miss S Rajendran – Chair<br><br>01 /12/2022: Maternity Governance<br>CD – Mrs K Dent<br><br>**20/12/2022: Full BU meeting** | | | |
| Implementation date: | 21 /12 /2022 | | | |
| Review Date: | November 2025 | | | |
| Key Contact: | Cindy Meijer | | | |