NICE support for commissioning for hypertension in pregnancy

July 2013

1 Introduction

Implementing the recommendations from NICE guidance and other NICE-accredited guidance is the best way to support improvements in the quality of care or services, in line with the statements and measures that comprise the NICE quality standards. This report:

- considers the resource impact of implementing the changes needed to achieve the quality standard at a local level
- identifies where potential cost savings can be made
- highlights the areas of care in the quality standard that have potential implications for commissioners
- directs commissioners and service providers to a package of support tools that can help them implement NICE guidance and redesign services.

NICE quality standards describe high-priority areas for quality improvement in a defined care or service area. Each standard consists of a prioritised set of specific, concise and measurable statements. They draw on existing guidance, which provides an underpinning, comprehensive set of recommendations, and are designed to support the measurement of improvement. For more information, see NICE quality standards.

NHS England’s Clinical Commissioning Group (CCG) outcomes indicator set is part of a systematic approach to promoting quality improvement. The outcomes indicator set provides CCGs and health and wellbeing boards with comparative information on the quality of health services commissioned by CCGs and the associated health outcomes. The set includes indicators
derived from NICE quality standards. By commissioning services in line with the quality standards, commissioners can contribute to improvements in health outcomes.

 Commissioners can use the quality standards to improve services by including quality statements and measures in the service specification of the standard contract and establishing key performance indicators as part of tendering. They can also encourage improvements in provider performance by using quality standard measures in association with incentive payments such as Commissioning for quality and innovation (CQUIN) 2013/14 guidance. NICE quality standards provide a baseline against which improvements can be measured and rewarded, enabling commissioners to address gaps in service provision, support best practice and encourage evidence-based care.

This report on the hypertension in pregnancy quality standard should be read alongside:

- **Hypertension in pregnancy.** NICE quality standard 35 (2013).
- **Hypertension in pregnancy: the management of hypertensive disorders during pregnancy.** NICE clinical guideline 107 (2010).

Commissioners should also be aware that the quality standard for hypertension in pregnancy is part of a suite of maternity quality standards, of which antenatal care, intrapartum care and postnatal care form the core pathway. The full set of quality standards that should be considered when commissioning and providing high-quality maternity services includes:

- **Postnatal care.** NICE quality standard 37 (2013).
- **Caesarean section.** NICE quality standard 32 (2013).
- **Hypertension.** NICE quality standard 28 (2013).
- **Antenatal care.** NICE quality standard 22 (2012).
- **Patient experience in adult NHS services.** NICE quality standard 15 (2012).
- **Specialist neonatal care.** NICE quality standard 4 (2010).
- **VTE prevention.** NICE quality standard 3 (2010).
Overview of hypertension in pregnancy

Hypertension in pregnancy can occur for several reasons. Women might have pre-existing hypertension when they become pregnant. This includes women with hypertension at the booking appointment or before 20 weeks of pregnancy. New-onset hypertension (presenting after 20 weeks of pregnancy) is known as gestational hypertension. It can occur in isolation, or in association with proteinuria when it is known as pre-eclampsia. Pre-eclampsia is a multisystem disorder that can affect almost all maternal organ systems and the unborn baby. Women with either pre-existing hypertension or gestational hypertension are at increased risk of developing pre-eclampsia. See appendix A for ‘Hypertension in pregnancy definitions’.

Hypertensive disorders in pregnancy carry risks for both the mother and the baby. They can result in substantial maternal morbidity and place women at an increased lifetime risk of cardiovascular disease.

Hypertension in pregnancy remains one of the leading causes of maternal death in the UK. Effective and safe control of severe hypertension in pregnancy is an important aspect of critical care management.

An enquiry into maternal deaths found that the main failings in managing pre-eclampsia were lack of routine observations of blood pressure and failure to treat significantly elevated levels of blood pressure. There were a number of women with severe hypertension in pregnancy for whom junior obstetricians had failed to consult with senior staff, and there were delays in involving anaesthetic or critical care services sufficiently early.

Women with pre-existing hypertension, diabetes, chronic kidney disease or autoimmune disease, and women who had hypertension in a previous pregnancy, are at high risk of hypertension in their current pregnancy.

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This support for commissioning document covers pre-pregnancy advice for women with pre-existing hypertension, as well as the antenatal, intrapartum and postnatal care of women at risk of or with hypertensive disorders of pregnancy.

2.1 Epidemiology of hypertension in pregnancy

Reports on maternal and perinatal deaths show that 5% of stillbirths without congenital abnormality occurred in infants whose mothers had pre-eclampsia. Hypertension in pregnancy is associated with 8–10% of all preterm births and more than half of women with severe pre-eclampsia give birth preterm. Small-for-gestational-age babies (mainly because of fetal growth restriction arising from placental disease) are common, with 20–25% of preterm births and 14–19% of term births in women with pre-eclampsia being less than the tenth centile of birth weight for gestation.

Pre-eclampsia becomes eclampsia when the mother develops seizures. In the UK over the last century, the rates of eclampsia appear to have fallen. Maternal deaths due to pre-eclampsia have also fallen, with about 6 women dying from the complications of pre-eclampsia every year in the UK.

In England, the total number of maternities in 2011 was 680,565. Gestational hypertension is estimated to complicate 12–15% (91,900) of pregnancies; 15–30% (20,700) of cases of gestational hypertension subsequently develop pre-eclampsia. In 2011–12, there were approximately 47,500 admissions to

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2 Hypertension in pregnancy: the management of hypertensive disorders during pregnancy. NICE full guideline 107 (2010)


4 NICE clinical guideline 107 costing template, gestational hypertension is estimated to complicate 12–15% of pregnancies. The midpoint of 13.5% has been used.

5 NICE clinical guideline 107 costing template, between 15% and 30% of cases of gestational hypertension subsequently develop pre-eclampsia. The midpoint of 22.5% has been used.


7 Hospital Episode Statistics (HES) Online – Admitted patient care by primary diagnosis code 2011/12, for ICD-10 codes O10 to O16, excluding O12 codes.
hospital that were related to pre-existing hypertension, gestational hypertension, pre-eclampsia or eclampsia.

3 Commissioning and resource implications


The cost of achieving the quality standard for hypertension in pregnancy depends on current local practice and the progress organisations have made in implementing NICE and NICE-accredited guidance.

Under the new maternity services pathway payment system, which came into effect in April 2013, the payment system is split into 3 modules, each of which is paid separately. These modules are antenatal care, the delivery and postnatal care.

The antenatal pathway payment system starts when the pregnant woman has her first antenatal appointment or attendance with her maternity provider. The antenatal pathway payment (standard, intermediate or intensive) is based on information collected at the antenatal assessment appointment (usually undertaken around 10 weeks’ gestation) when the health and social care risk assessment is carried out.

There are two delivery pathway prices, split by whether there were complications and comorbidities or not. The price includes all postpartum care of the mother and well/healthy baby until transfer to community postnatal care.

The postnatal pathway payment system usually begins after the woman and baby have been transferred to community postnatal care and ends once the woman has been transferred to primary care. If the care normally delivered under the postnatal pathway is provided while the woman remains in the hospital, the postnatal care provider is still entitled to payment for that element.
of the pathway. The postnatal pathway payment (standard, intermediate or intensive) is based on likely resource usage during the postnatal period. Commissioners should be aware of the potential impact of the pathway payment system.

Services should be commissioned from and coordinated across all relevant agencies encompassing the hypertension in pregnancy care pathway. Achievement of the quality statements aims to improve the control of hypertension in pregnancy. This is likely to contribute to a reduction in the rates of pre-eclampsia and eclampsia and the associated adverse effects. Commissioners are reminded of the equality and diversity considerations in each of the quality statements. Information should be accessible to women, including women who do not speak or read English and those with additional needs such as physical, sensory or learning disabilities. Women receiving information should have access to an interpreter or advocate if needed.

Table 1 summarises the commissioning and resource implications for commissioners working towards achieving this quality standard. Commissioners and providers may wish to work together to seek assurance that the quality statements are being achieved in line with the quality measures detailed in the quality standard. See section 4 for more detail on commissioning and resource implications.
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<th>Quality statement</th>
<th>Commissioning implications</th>
<th>Estimated resource impact</th>
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<td>1 - Pre-pregnancy advice for women with treated hypertension</td>
<td>Demonstrating evidence of practice and monitoring to ensure that women with treated hypertension are given information annually about safe antihypertensive treatment during pregnancy.</td>
<td>No significant resource impact is anticipated.</td>
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<tr>
<td>2 - Antenatal assessment of pre-eclampsia risk</td>
<td>Demonstrating evidence of practice to ensure that pregnant women have their risk factors for pre-eclampsia identified and recorded at the booking appointment and that those at increased risk are offered a prescription of 75 mg of aspirin to take daily from 12 weeks until birth. Measuring outcomes by monitoring the incidence of pre-eclampsia in women at increased risk.</td>
<td>The costing report for NICE clinical guideline 107 estimates that implementing this statement could lead to a net saving of £2000 per 100,000 population because of an increase in the use of aspirin and a subsequent reduction in pre-eclampsia.</td>
</tr>
<tr>
<td>3 - Antenatal blood pressure targets</td>
<td>Demonstrating evidence of practice, and monitoring outcomes to ensure that women with hypertension in pregnancy have a blood pressure target set and maintained throughout their pregnancy.</td>
<td>No significant resource impact is anticipated.</td>
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<tr>
<td>4 - Assessing women with severe hypertension in pregnancy</td>
<td>Demonstrating evidence of practice to ensure that pregnant women with severe hypertension are admitted to hospital for a full assessment by an appropriately trained healthcare professional. Measuring outcomes by monitoring the number of women with severe hypertension in pregnancy who have a stroke.</td>
<td>Depending on current local practice, full assessments for women with severe hypertension could increase admissions but may reduce adverse effects caused by poorly controlled hypertension.</td>
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<tr>
<td>5 - Admission to hospital for women with pre-eclampsia</td>
<td>Demonstrating evidence of practice to ensure that women with a diagnosis of pre-eclampsia are</td>
<td>Depending on current local practice, admissions for women with pre-eclampsia might increase but may result in a</td>
</tr>
<tr>
<td>6 - Planning mode and timing of birth for women with pre-eclampsia</td>
<td>Demonstrating evidence of practice to ensure that women with pre-eclampsia have an agreed and documented consultant obstetrician-led plan for the timing and mode of birth. Measuring women's satisfaction and whether they felt sufficiently involved in planning the timing and mode of the birth of their baby.</td>
<td>The costing report for NICE clinical guideline 107 suggests that implementation should not lead to a significant change in the use of NHS resources but could lead to potential savings due to a reduction in maternal and fetal morbidity.</td>
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<tr>
<td>7 - Transfer of information about ongoing management</td>
<td>Demonstrating evidence of practice and monitoring to ensure quality communication for ongoing antihypertensive management to GPs for women who have had hypertension in pregnancy.</td>
<td>No significant resource impact is anticipated.</td>
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<tr>
<td>8 - Communicating information about future risks</td>
<td>Demonstrating evidence of practice and monitoring to ensure that women diagnosed with gestational hypertension or pre-eclampsia have a medical review and a discussion about future related risks at their 6–8-week postnatal check.</td>
<td>No significant resource impact is anticipated.</td>
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4 Commissioning implications and resource impact

This section considers the commissioning implications and potential resource impact of implementing the recommendations to achieve the NICE quality standard for hypertension in pregnancy.

4.1 Pre-pregnancy advice for women with treated hypertension

Quality statement 1:

Women of childbearing potential with treated hypertension are given information annually about safe antihypertensive treatment during pregnancy.

In line with NICE clinical guideline 107 Section 1.2.1 Pre-pregnancy advice (recommendations 1.2.1.1 [key priority for implementation {KPI}], 1.2.1.3 and 1.2.1.4), commissioners should ensure that there is evidence of local arrangements for women of childbearing potential with treated hypertension to be given information about safe antihypertensive treatment during pregnancy as part of an annual review of their hypertension care.

Commissioners may consider raising awareness in primary care and among GPs about the need to inform women who are being treated for hypertension about the potential risks, including the risk of congenital abnormalities, linked to particular antihypertensive drugs. This should enable women to arrange a discussion with the healthcare professional responsible for managing their hypertension if they are planning to, or, become pregnant.

Commissioners may also signpost GPs to the Complications in pregnancy online educational tool that has been developed to help healthcare

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8 Treated hypertension is hypertension that is treated with 1 or more antihypertensive drugs.
professionals to feel confident to advise and manage patients with chronic diseases, such as hypertension through pregnancy.

Commissioners are reminded that childbearing potential should be determined for women on an individual basis, and that access to information about safe antihypertensive treatment during pregnancy should not be determined solely by age, because childbearing potential is also dependent on factors other than age.

The costing report for NICE clinical guideline 107 suggests that providing specific information for women who take angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARBs) can be carried out as part of the existing management programme and the cost impact is anticipated to be minimal.

4.2 Antenatal assessment of pre-eclampsia risk

<table>
<thead>
<tr>
<th>Quality statement 2:</th>
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<tr>
<td>Pregnant women at increased risk of pre-eclampsia at the booking appointment are offered a prescription of 75 mg of aspirin to take daily from 12 weeks until birth.</td>
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</table>

Aspirin prophylaxis, unless contraindicated, reduces the occurrence of pre-eclampsia, preterm birth and fetal and neonatal mortality in women at increased risk of developing the condition (if they have 1 high-risk factor or more than 1 moderate risk factor for pre-eclampsia).

Commissioners should specify that pregnant women have their risk factors for pre-eclampsia identified and recorded at the booking appointment⁹, in line with NICE clinical guideline 107 Section 1.1 Reducing the risk of hypertensive disorders in pregnancy (recommendations 1.1.2.1 [KPI] and 1.1.2.2) and

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⁹ The booking appointment is the appointment where the woman enters the maternity care pathway. See Antenatal appointments (schedule and content) in NICE clinical guideline 62.
NICE clinical guideline 62 Section 1.9.2 Pre-eclampsia (recommendation 1.9.2.2). (See also NICE support for commissioning antenatal care).

To achieve the quality statement, commissioners also need to specify and check that the pregnant women who are found to be at increased risk of pre-eclampsia are offered a prescription of 75 mg of aspirin to take daily (unless contraindicated) from 12 weeks until birth\(^{10}\).

Offering pregnant women at increased risk of pre-eclampsia at the booking appointment, a prescription of 75 mg of aspirin to take daily from 12 weeks until birth is likely to lead to incremental costs and savings. The costing report for NICE clinical guideline 107 on hypertension in pregnancy estimates that the increased use of aspirin and a reduction in adverse events would result in net savings of £2000 per 100,000 population. The unit cost of aspirin in these circumstances is estimated at around £6 per woman (although there may also be costs associated with prescribing aspirin), while savings from reducing some of the adverse events associated with pre-eclampsia are estimated at around £3100 (avoiding pre-eclampsia), £1500 (avoiding delivery <34 weeks) and £700 (avoiding baby born small for gestational age). Savings realised from a reduction in adverse events include savings from reduced antenatal care, reduced length of hospital stay for both mother and baby, and a reduction in resource use during hospital stay.

Commissioners may refer to the Maternity Services Secondary Uses Dataset which collects data on:

- Risk factors at booking: hypertension, renal disease, diabetes, autoimmune disease (global number 17200350).
- Obstetric diagnoses from previous pregnancies including ‘severe pre-eclampsia requiring pre-term birth’, ‘eclampsia’ and ‘gestational hypertension’ (global number 17200720).

\(^{10}\) Contraindications to taking aspirin include, but are not limited to: aspirin allergy; medical conditions precluding the use of aspirin; present use of another drug with the potential to interact with aspirin. Note: aspirin did not have UK marketing authorisation for the indication in question at the time of publication of NICE clinical guideline 107 (August 2010). Informed consent should be obtained and documented.
• Obstetric conditions diagnosed in the current pregnancy, including ‘severe pre-eclampsia’, ‘severe pre-eclampsia requiring pre-term birth’ and ‘eclampsia’ (global number 17203940).

4.3 Antenatal blood pressure targets

Quality statement 3:
Women with hypertension in pregnancy have a blood pressure target set below 150/100 mmHg or, if they also have target organ damage\(^{11}\), below 140/90 mmHg.

Commissioners need to specify and check that providers are adhering to NICE guidance (recommendations 1.2.3.1 [KPI], 1.2.3.3, 1.4.1.3 and 1.5.1.2), and that women with hypertension in pregnancy are having appropriate blood pressure targets set. Antihypertensive treatment should aim to lower blood pressure from the moderate or severe range, while avoiding excessive reductions that may affect fetal growth.

Commissioners need to ensure that services have sufficient capacity and that staff are competent so that pregnant women with hypertension in pregnancy have appropriate blood pressure targets set, and receive monitoring and treatment that is aimed at keeping blood pressure within the recommended targets.

Achievement of this statement is unlikely to have a significant impact on NHS resources because this can be incorporated into existing antenatal care.

Commissioners can refer to the NICE ‘referral advice’ recommendations database in accordance with NICE clinical guideline 107.

\(^{11}\) Examples of target organ damage include left ventricular hypertrophy, chronic kidney disease and hypertensive retinopathy. See NICE clinical guideline 127 (Hypertension) recommendation 1.2.6 in Section 1.2 Diagnosing hypertension.
4.4 Assessing women with severe hypertension in pregnancy

Quality statement 4:

Pregnant women with severe hypertension are admitted for a full assessment, carried out by a healthcare professional trained in managing hypertension in pregnancy.

Effective and safe control of severe hypertension is the most important aspect of critical care management, because the main causes of maternal death and severe maternal morbidity (including stroke) are the consequence of poorly controlled hypertension.

In line with NICE clinical guideline 107 Section 1.4 Management of pregnancy with gestational hypertension (recommendations 1.4.1.1 and 1.4.1.3) and Section 1.5 Management of pregnancy with pre-eclampsia (recommendations 1.5.1.1 and 1.5.1.2), commissioners should ensure that care pathways are in place for women with severe hypertension in pregnancy to be referred from primary care or emergency departments as soon as possible to receive assessment from healthcare professionals with expertise in managing hypertensive disorders.

Commissioners need to ensure that pregnant women with severe hypertension are admitted to hospital for full assessment and until blood pressure is maintained. Full assessment should include blood pressure measurements, proteinuria testing and blood tests in accordance with those set out for severe gestational hypertension and pre-eclampsia with severe hypertension in tables 1 and 2 of recommendations 1.4.1.3\(^\text{12}\) and 1.5.1.2\(^\text{13}\). This is essential to ensure early identification of pre-eclampsia and the provision of critical care where it is needed.

\(^{12}\) NICE clinical guideline 107, Table 1 Management of pregnancy with gestational hypertension.

\(^{13}\) NICE clinical guideline 107, Table 2 Management of pregnancy with pre-eclampsia.
Depending on current local practice, the admission of women for a full assessment may lead to an increase in admissions. Under the new maternity services payment pathway system, any additional cost associated with an admission for assessment is already covered by the antenatal payment tariff. However, additional admissions could result in increased costs for providers. Full assessments carried out by healthcare professionals trained in managing hypertension in pregnancy could lead to a reduction in adverse effects caused by poorly controlled hypertension and a subsequent reduction in admissions for suspected pre-eclampsia.

Commissioners may find it useful to refer to the NICE ‘do not do’ recommendations database, which identifies NHS clinical practices that should be stopped completely or should not be used routinely in accordance with NICE clinical guideline 107. The ‘do not do’ recommendations may be because there is evidence that the practice is not, on balance, beneficial or there is a lack of evidence to support its continued use.

4.5 Admission to hospital for women with pre-eclampsia

Quality statement 5:
Women with a diagnosis of pre-eclampsia are admitted to hospital and monitored daily.

Commissioners should ensure that secondary care services are in place for women with pre-eclampsia to be admitted to hospital to enable their condition to be fully assessed and monitored. High-quality care should include treatment, measuring blood pressure, testing for proteinuria and blood tests, in line with NICE clinical guideline 107 Section 1.5 Management of pregnancy with pre-eclampsia (recommendation 1.5.1.2 [KPI]). Some women may need to stay in hospital until after the birth of their baby. For others, daily monitoring outside hospital may be possible if pre-eclampsia is stable, and if the woman has easy access to daily monitoring services and can be readmitted to hospital if her clinical condition deteriorates.
In 2011–12, there were approximately 12,000 admissions for pre-eclampsia (ICD-10 code O14) in England. Full assessments carried out by healthcare professionals trained in managing hypertension in pregnancy for women with severe hypertension (quality statement 4) may lead to appropriate admissions for women with diagnosed pre-eclampsia. Depending on current local practice, admissions for women with pre-eclampsia might increase but may result in a reduction of the adverse effects of pre-eclampsia for women and babies as a result of daily monitoring and treatment. Under the new maternity services payment pathway system, any additional costs associated with admissions for women with a diagnosis of pre-eclampsia are already covered by the antenatal payment tariff. However, additional admissions could result in increased costs for providers.

NICE clinical guideline 107: audit tool – criteria 4–6 can help with data collection activity.

Commissioners may also find it useful to refer to the NICE ‘do not do’ recommendations database, which identifies NHS clinical practices that should be stopped completely or should not be used routinely in accordance with NICE clinical guideline 107. The ‘do not do’ recommendations may be because there is evidence that the practice is not, on balance, beneficial or there is a lack of evidence to support its continued use.

4.6 Planning mode and timing of birth for women with pre-eclampsia

Quality statement 6:

Women with pre-eclampsia have an agreed consultant obstetrician-led plan for the timing and mode of birth.

Some women who have pre-eclampsia with mild or moderate hypertension progress to have severe pre-eclampsia, which is associated with serious adverse outcomes. Because the progress of the condition differs between
women, commissioners need to specify that consultant obstetrician-led plans are developed for each woman with pre-eclampsia and that they are documented in the woman’s notes\textsuperscript{14}. Plans should include acceptable monitoring thresholds (maternal and fetal) for early birth and should be agreed with the pregnant woman and the multidisciplinary team providing the woman’s care. The plans need to be updated as needed and should supersede any original birth plan.

The \textit{costing report for NICE clinical guideline 107} suggests that this statement should not lead to a significant change in the use of NHS resources because documentation of maternal (biochemical, haematological and clinical) and fetal thresholds, for elective birth before 34 weeks in women with pre-eclampsia can be recorded at the same time as other information. It is anticipated that having an agreed consultant obstetrician-led plan for women with pre-eclampsia about the timing and mode of birth could lead to potential savings due to a reduction in maternal and fetal morbidity.

Commissioners may refer to the \textbf{Maternity Services Secondary Uses Dataset} which collects data on the date a care plan has been created or changed. This covers antenatal, birth and postnatal care plans (global number 17201890). Data are also collected on the stage to which the plan applies (global number 17201900) and the professional category of the clinician with overall responsibility for care during the pregnancy (global number 17201920).

Commissioners may also find it useful to refer to the \textbf{NICE ‘do not do’ recommendations database}, which identifies NHS clinical practices that should be stopped completely or should not be used routinely in accordance with \textit{NICE clinical guideline 107}. The ‘do not do’ recommendations may be because there is evidence that the practice is not, on balance beneficial or there is a lack of evidence to support its continued use.

\textsuperscript{14} For indications for timing of birth see NICE clinical guideline 107 \textit{Section 1.5.2 Management of pregnancy with pre-eclampsia} (recommendations 1.5.2.1 to 1.5.2.7)
4.7 Transfer of information about ongoing management

**Quality statement 7:**

Women who have had hypertension in pregnancy have a plan for ongoing antihypertensive management included in their postnatal care plan, which is communicated to their GP when they are transferred to community care after the birth.

There are particular risks to women who have had hypertension in pregnancy (such as the risk of stroke) in the immediate postnatal period. Commissioners need to ensure that individualised care plans for women who have had hypertension in pregnancy are developed before they are transferred to community care\(^{15}\). Individualised care plans should be used to support ongoing antihypertensive management and be communicated to GPs in order to enable risks to be monitored and addressed, including variations in blood pressure.

Transfer of information between secondary care and community care should include details of who will provide follow-up care, including medical review if needed, frequency of blood pressure monitoring needed, thresholds for reducing or stopping treatment and indications for referral to primary care for blood pressure review and self-monitoring for symptoms.

Implementation of this statement is unlikely to lead to a significant resource impact because this can be incorporated into existing discharge procedures.

4.8 Communicating information about future risks

**Quality statement 8:**

Women who have had gestational hypertension or pre-eclampsia discuss future pregnancy and lifetime cardiovascular risks during a medical review at

\(^{15}\) Community care is defined as transfer to the care of a community midwife or health visitor.
their 6–8 week postnatal medical check.

The long-term risks for women who have had hypertension in pregnancy include developing high blood pressure and an increased lifetime cardiovascular risk. In line with NICE guidance (recommendation 1.10.1.1) and in conjunction with statement 7, women and their primary care clinicians should be told of these associated risks. Increased awareness and surveillance may lead to earlier intervention, such as antihypertensive treatment, with likely benefits for the woman.

In line with NICE clinical guideline 107 recommendations 1.4.3.7, 1.5.3.10 [KPI] 1.10.1.1, 1.10.4.1 and 1.10.4.2, commissioners should ensure that there is sufficient local capacity and awareness to ensure that women who have had gestational hypertension or pre-eclampsia are offered a medical review at their postnatal medical check (6–8 weeks after the birth) and that they are made aware of the risks in future pregnancies resulting from hypertension in a previous pregnancy during that review. The Topic Expert Group consensus was that the medical review could be carried out by a GP or an appropriately trained midwife.

The costing report for NICE clinical guideline 107 suggests that implementing this statement is unlikely to lead to a significant resource impact because this can be incorporated into either the existing postnatal review (6–8 weeks after the birth) or as part of ongoing antihypertensive management. Long term savings may be possible due to earlier intervention for women with increased cardiovascular risk.

5 Other useful resources

5.1 Policy documents

• Department of Health (2009) Delivering high quality midwifery care: the priorities, opportunities and challenges for midwives.

5.2 Useful resources

5.3 NICE implementation support
• Hypertension in pregnancy. NICE baseline assessment tool (2010).
• Hypertension in pregnancy. NICE costing report (2010).
• Hypertension in pregnancy. NICE costing template (2010).
• Hypertension in pregnancy. NICE slide set (2010).
• Antenatal care. (NICE clinical guideline 62 implementation tools and resources (2008)
• Postnatal care. NICE clinical guideline 37 implementation tools and resources (2006)

5.4 NICE pathways
• Hypertension (2013).
• Patient experience in adult NHS Services (2012).
• Antenatal care (2011).
• Postnatal care (2011).
• Venous thromboembolism (2011).
• Caesarean section (2011)

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Appendix A

**Hypertension in pregnancy definitions**

- **Chronic hypertension** is hypertension that is present at the booking appointment or before 20 weeks of pregnancy. This could include women with pre-existing hypertension (*hypertension that is present before pregnancy*).

- **Gestational hypertension** is new hypertension presenting after 20 weeks of pregnancy without significant proteinuria (urinary protein:creatinine ratio greater than 30 mg/mmol or a validated 24-hour urine collection result greater than 300 mg protein).

- **Hypertension in pregnancy** includes chronic hypertension, gestational hypertension and pre-eclampsia.

- **Pre-eclampsia** is new hypertension presenting after 20 weeks of pregnancy with significant proteinuria (urinary protein:creatinine ratio greater than 30 mg/mmol or a validated 24-hour urine collection result greater than 300 mg protein).

- **Severe hypertension** is when the systolic blood pressure is 160 mmHg or greater, diastolic blood pressure is 110 mmHg or greater.

- **Severe pre-eclampsia** is pre-eclampsia with severe hypertension and/or with symptoms, and/or biochemical and/or haematological impairment.

- **Treated hypertension** is hypertension that is treated with 1 or more antihypertensive drugs.