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Best Practice Statement ~ *May 2008*

Routine examination of the newborn

NHS Quality Improvement Scotland is committed to equality and diversity. We have assessed this Best Practice Statement for likely impact on the six equality groups defined by age, disability, gender, race, religion/belief and sexual orientation. For a summary of the equality and diversity impact assessment, please see our website (www.nhshealthquality.org). The full report in electronic or paper form is available on request from the NHS QIS Equality and Diversity Officer.

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Introduction

NHS Quality Improvement Scotland (NHS QIS) was set up by the Scottish Parliament in 2003 to take the lead in improving the quality of care and treatment delivered by NHSScotland.

The purpose of NHS QIS is to improve the quality of healthcare in Scotland by setting standards and monitoring performance, and by providing NHSScotland with advice, guidance and support on effective clinical practice and service improvements.

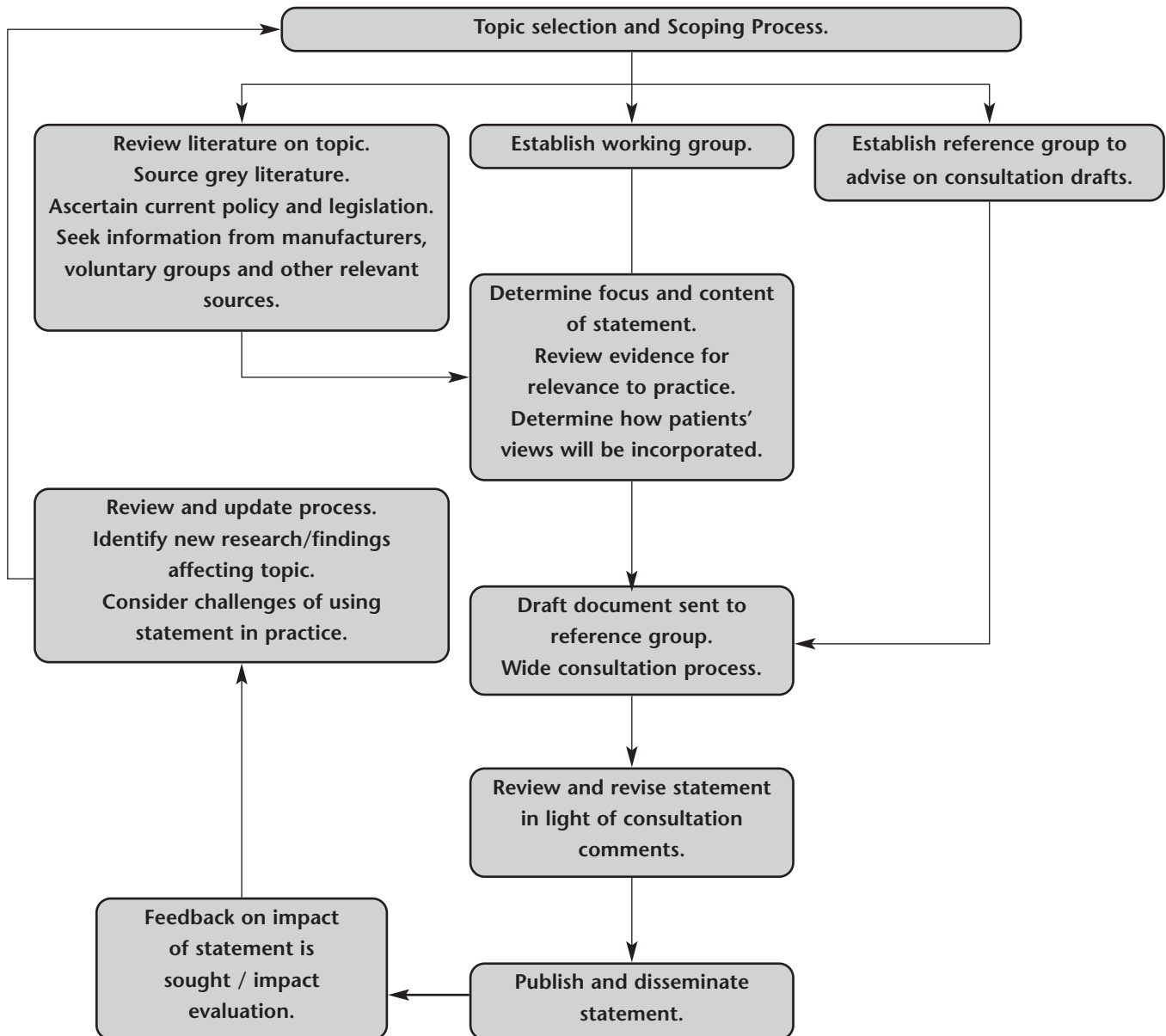
A series of best practice statements has been produced within the Practice Development Unit of NHS QIS, designed to offer guidance on best and achievable practice in a specific area of care. These statements reflect the current emphasis on delivering care that is patient-centred, cost-effective and fair. They reflect the commitment of NHS QIS to sharing local excellence at a national level.

Best practice statements are produced by a systematic process, outlined overleaf, and underpinned by a number of key principles.

- They are intended to guide practice and promote a consistent, cohesive and achievable approach to care. Their aims are realistic but challenging.
- They are primarily intended for use by registered nurses, midwives, allied health professionals, and the staff who support them.
- They are developed where variation in practice exists and seek to establish an agreed approach for practitioners.
- Responsibility for implementation of these statements rests at local level.

Best practice statements are reviewed, and, if necessary, updated after 3 years in order to ensure the statements continue to reflect current thinking with regard to best practice.

Key stages in the development of best practice statements



Best Practice Statement: Routine examination of the newborn


The best practice statement routine examination of the newborn was originally developed in 2004¹ by a project midwife seconded to the Practice Development Unit of NHS QIS together with a multiprofessional working group. The aim of the statement is to offer guidelines for all registered maternity care professionals undertaking the routine examination of newborn babies, and is based on the evidence currently available together with a consensus by experts of established practice. The statement was reviewed and updated by a working group in 2008. In addition to the review process, an audit tool has been developed to support registered maternity care professionals and organisations who would like to audit current local practice.

Babies are inspected soon after birth to identify any obvious visible unexpected features or abnormalities and to reassure parents. The midwife in attendance at the birth usually conducts this initial inspection. It is established as good practice to carry out a more detailed examination of the baby within 24 hours of birth as part of the core health programme for under five's.² During this routine examination problems can be identified, and if appropriate referred for investigation, specialist assessment and treatment, as well as being fully discussed with the parents.

Rennie³ states that the newborn examination “gives healthcare advice, to ensure that plans made regarding antenatal diagnosed abnormalities are implemented, and to provide reassurance about minor medically unimportant deviations from normal which worry parents”.

The value of this preventative health contact was demonstrated by Townsend *et al*⁴ when the discussion of healthcare issues by the examiner and continuity of care were both significantly related to higher satisfaction in parents. Midwives in the study were found to be significantly more likely to discuss healthcare issues such as feeding, sleeping and skin care, and provide continuity of care.

In Scotland, up until 2004, the routine examination of the newborn was traditionally carried out by doctors. These were mainly senior house officers (now described as foundation year two doctors) but in some areas a variety of other doctors took responsibility for the examination of babies, eg general practitioners (GPs), associate specialists and community medical specialists. Advanced neonatal nurse practitioners (ANNPs), who have undertaken specific training which includes examination of the newborn, take responsibility, in some NHS boards, for the routine examination of babies. In recent years across the UK there has been a move to reconsider who should conduct the routine examination of the newborn.⁵⁻⁸



Both the Framework for Maternity Services in Scotland⁹ and the report of the Expert Group on Acute Maternity Services in Scotland (EGAMS)¹⁰, outlined a number of practice development issues for midwives, examination of the newborn was one of these.

“In order to provide a seamless service, midwives (especially in remote areas) should be able to complete the first and discharge examination of the baby. In order to complete the examination the professional must be able to understand the relevance of the examination, examine, assess and identify normality and abnormality and be able to refer appropriately”.¹⁰

Hall and Elliman² state “The professional qualification of the person(s) delivering the various aspects of this programme is less important than the quality of their initial and continuing training, audit and self-monitoring”.

The training medical staff receive in the routine examination of a newborn baby is variable.^{11,12} Similarly, as a result of the small number of home or community maternity unit births, GPs have reduced opportunities to maintain their skills in examination of the newborn. GPs also have many conflicting demands on their time and therefore many are reluctant to increase their involvement and responsibility.¹³ Midwives have some of the required skills as they already perform the initial inspection of babies at birth and on the subsequent days of postnatal care. The Royal College of Midwives (RCM) endorses the extension of the midwife’s role to include examination of the newborn with the following qualifications:

- as long as this improves continuity of carer; or
- allows more women to benefit from either care in a midwife-led unit or at home; or
- improves the care to women and their babies in other ways.¹⁴

Although there is mention of the routine examination of the newborn in most midwifery and paediatric textbooks there has been no agreed process for this examination or what it should include. Other issues that can impact on the routine examination of the newborn had not been evidenced, for example where and when it is conducted and the competencies required.

Prior to the development of this best practice statement in 2004 neither Scotland nor England had nationally agreed evidence-based guidelines for any professional undertaking the routine examination of a baby. The National Institute for Clinical Excellence (NICE) guidelines¹⁵ now cover what should be included in the physical examination of the newborn but no actual standards for how it should be conducted, and includes the 2004 edition of this best practice statement¹ as part of the evidence.

As follow on work from the 2004 edition of the best practice statement the Scottish Multiprofessional Maternity Development Programme (SMMDP) has developed a training programme for the preparation of all registered maternity care professionals who wish to undertake this additional activity as part of their holistic care of women and their babies. Midwives are now examining babies alongside other registered maternity care professionals in 11 of the 14 NHS boards in Scotland. In an impact evaluation of the SMMDP and some of its courses the Robert Gordon University¹⁶ recommended that the “Scottish routine examination of the newborn course is accessed by more midwives in a range of settings, including tertiary level units throughout Scotland”. The structured approach and core competencies outlined in the 2004 best practice statement¹ are used as the baseline for this training course.

This best practice statement is applicable to the routine examination of babies who are thought to be well, without significant problems, and being cared for in a postnatal ward or at home.

Note on terms used in this best practice statement:

Parent is used to include mother, father or that person who will be the prime carer of the baby.

Baby is used to indicate the newborn baby unless specified otherwise.

Routine examination is used to indicate the examination of a baby carried out between 6-72 hours after birth. In Scotland this is generally performed at around 24 hours of age.

Normality is defined as no unexpected or abnormal findings detected at the time of examination. This does not guarantee absolute normality as signs of abnormality may only present at a later date.

Must is used to describe an overriding duty or principle.¹⁷

Should is used when an explanation is provided of how the overriding duty will be met.¹⁷

Should is also used where the duty or principle will not apply in all situations or circumstances, or where there are outside factors that affect whether or how the guidance can be followed.¹⁷

Section 1: The where, when, what and by whom of the routine examination of the newborn

1.1 Key point

Where: the environment and location in which the routine examination is carried out can affect the behaviour of the baby, the concentration of the healthcare professional and the ability of the parent to participate.

Statement	Reasons for statement	How to demonstrate statement is being achieved
The routine examination of the baby will be carried out in a safe, warm, well-lit environment which is mutually convenient to the parents and registered maternity care professional eg maternity unit or home.	The baby must be kept safe and warm while being examined. The registered maternity care professional requires good light, and there needs to be sufficient uninterrupted time for the parent and professional to concentrate on the examination, and to discuss the findings.	The location in which the routine examination of the baby occurs is recorded in the baby record for audit purposes.
Privacy will be provided particularly when discussing family health issues of a sensitive nature. This may require moving to a separate room.	Confidentiality must be maintained when discussing sensitive issues.	In local audit the majority of parents and registered maternity care professionals report that examinations were conducted in a suitable environment, at a mutually convenient location, were uninterrupted, and privacy was provided.
The registered maternity care professional will allow sufficient time for an unhurried examination which includes discussing findings with the parents, referral if necessary, and completing the required documentation.	Interruptions can lead to omissions in the examination, upset of the baby and fragmentation of discussions with the parents.	In local audit parents report having sufficient time for discussion.

Challenges

- *To ensure minimal distraction during the routine examination of the newborn, for example having to respond to emergencies, beeps or telephone calls or other family members.*
- *To ensure privacy prior to, during and following the examination for discussions of a confidential nature.*
- *To provide sufficient resources to allow the routine examination to be carried out at home.*
- *To ensure appropriate referral.⁴*
- *To provide additional heating, if required, to maintain the baby's temperature throughout the examination*
- *To ensure a trained registered maternity care professional is available to undertake the routine examination of the newborn in the community.*

1.2 Key point

When: the age of the baby, the baby's state of hunger and alertness can affect the routine examination.

Statement	Reasons for statement	How to demonstrate statement is being achieved
<p>After the birth of the baby, parents will be offered two physical examinations of their newborn baby. The initial examination is carried out immediately after birth and the routine examination takes place between 6 and 72 hours of life.^{15,18,19}</p> <p>The routine examination of the baby will be carried out only with parental consent at a time suitable to the baby, parents and registered maternity care professional conducting the examination.^{15,18,19}</p>	<p>Current practice is that the routine examination of the newborn takes place within the first 24 hours of life, however there is no evidence that this is the optimal time.¹⁹</p> <p>Examining cardiac function should not be before 6 hours of age to allow for extra uterine adaptation.^{15,18}</p> <p>There is no optimal time to examine a baby which will detect all possible abnormalities.²⁰</p>	<p>The age of the baby at examination is recorded and available for audit.</p> <p>In local audit, parents report the timing of the examination was appropriate for them and their baby.</p>
<p>If the baby has not fed, passed urine and meconium by the time of the routine examination, this will be clearly documented and followed up. If there is an ongoing delay, the baby may require further investigation.</p>	<p>Examination after 6 hours allows time for the baby to begin to adapt to extra-uterine life, to have had the opportunity for at least one feed, and to possibly have passed urine and meconium.</p>	<p>The time of first feed, passage of the first urine and meconium will be recorded in the baby record.</p>
<p>It is preferable that the examination is conducted when the baby is quiet and alert, not hungry or crying.</p> <p>If the baby becomes upset during the examination, any aspects which could not be completed, or if findings were ambiguous, should be checked again when the baby is calmer.</p>	<p>The baby's hunger and state of alertness can affect the accuracy of the examination.^{21,22}</p>	<p>The baby's records will show if the findings of the examination could have been affected by the baby's state of alertness and were followed up later</p>

Challenges

- *The registered maternity care professionals should try to schedule their varied activities to be free to examine all babies at an appropriate age and in appropriate circumstance*

1.3 Key point

What: the routine examination of a baby can only demonstrate there were no problems detected at that point in time²⁰.

Statement	Reasons for statement	How to demonstrate statement is being achieved
<p>Parents will be informed, ideally both verbally and in writing, what the routine examination of their baby can assess. This information will be available in a format that will allow the needs of all groups of parents to be met. This may include the use of interpreters where necessary.</p>	<p>Parents are empowered by information²³ and an information leaflet can aid communication.^{1,2,4} Many conditions which will require future intervention, eg cardiac, orthopaedic and ophthalmic cannot always be identified at the routine examination.^{2,4,3}</p>	<p>In local audit, parents report receiving information outlining the extent and limitations of the routine examination of their baby.</p>
<p>Parents will be informed of when, from whom, and how to get advice if they are concerned about their baby.</p>	<p>Assessment of the baby in the newborn period is a continuous process performed by the parents and all professionals involved in maternity care.</p>	<p>Parents report their awareness of the need to continually observe their baby, and know who and when to call if they have any concerns about their baby.</p>

Challenges

- *To develop standardised information for parents which explains the purpose and extent of the routine examination**
- *To ensure all parents receive this information in a format that meets their needs.*

*A collaboration is under way with NHS Health Scotland to produce an information leaflet nationally available for all parents in Scotland.

1.4 Key point

Who: Registered maternity care professionals performing the routine examination of the newborn must be able to communicate effectively to assess the relevant family history and provide parents with health education and reassurance. ^{12,25,26}

Statement	Reasons for statement	How to demonstrate statement is being achieved
<p>The examination of the baby will be carried out by a registered maternity care professional who has received training in assessing the family history in relation to the routine examination of the newborn.</p>	<p>Gold standards, to ensure correct assessment are required by all registered maternity care professionals, particularly in relation to hip examination and family history.^{12,25,26}</p>	<p>Standards, policies and protocols for registered maternity care professionals will be in place. Audit will demonstrate effective assessment in relation to family history.</p>
<p>The routine examination of the newborn will be undertaken in the context of informing parents about the health of their baby and educating them about ensuring the well-being of their baby. The routine examination of the newborn should be conducted in the presence of the parents wherever possible.</p>	<p>Parents value the reassurance and health education given as part of the registered maternity care professionals' examination.^{25,12,4}</p>	<p>Audit of parental satisfaction with communication skills of the registered maternity care professional undertaking the role.</p>
<p>The routine examination of the newborn will be undertaken as a holistic procedure by a registered maternity care professional. The routine examination of the newborn will be carried out by one person and not broken down into components parts and delegated to a range of practitioners</p>	<p>The discussion of healthcare issues by the examiner and continuity of care are both significantly related to higher satisfaction.⁴</p>	<p>Documentation audit will demonstrate that the routine examination of the newborn is carried out by one registered maternity care professional.</p>

Challenges

- *To increase the effectiveness of the examination and parental satisfaction with the procedure*
- *To ensure there are sufficient numbers of trained registered maternity care professionals available to undertake the routine examination of the newborn at a time and place suitable to the parents*

Section 2: Post registration training for registered maternity care professionals undertaking the routine examination of the newborn

Key point

Registered maternity care professionals experienced in other aspects of maternity care may not have all the current knowledge and skills to be competent in performing the routine examination of newborn babies.

Statement	Reasons for statement	How to demonstrate statement is being achieved
The registered maternity care professional conducting the routine examination of the newborn will have received specific training, which provides the core competencies outlined in Appendix 1 of the best practice statement routine examination of the newborn 2004. ¹	The registered maternity care professional completing the routine examination of the newborn must be able to understand the relevance of the examination, and examine, assess and identify normality and abnormality, and be able to refer appropriately. ^{1,10} Standards, to ensure correct assessment, are required by all registered maternity care professionals, particularly in relation to hip examination and family history. ^{1,2,5,4}	There is a validated training programme to provide ongoing education and training in the routine examination of the newborn. This programme is suitable for all registered maternity care professionals. Audit of registered maternity care professionals undertaking the routine examination of the newborn demonstrates that they have received specific training which meets the standard and provides the core competencies outlined in Appendix 1 of the best practice statement routine examination of the newborn 2004. ¹
There are registered maternity care professionals, trained and experienced in examining babies, available to supervise and support those professionals undertaking training or updating. These may be doctors, midwives or advanced neonatal nurse practitioners (ANNP).	The effectiveness of the examination of the newborn can be improved if the registered maternity care professionals receive specific training, which comprises both theoretical and clinical components. ¹¹	An index of registered maternity care professionals who have completed the Scottish routine examination of the newborn course will be maintained by the Scottish Multiprofessional Maternity Professional Development Programme (SMMDP). This record will include the name of the professional who supervised the trainee examiner.
Registered maternity care professionals trained in the routine examination of the baby will have the opportunity to maintain their knowledge and skills through practice and periodic updating.	Registered maternity care professionals trained in examination of the newborn need to be able to practice to maintain their skills. ^{25,4}	To ensure the SMMDP Index is up to date the professionals will be contacted on a 4-yearly basis. Updating courses on specific elements of the routine examination of the newborn should be made available.
Registered maternity care professionals undertaking the routine examination of the newborn will receive appropriate training in communication skills relating to the procedure.	Parents value the reassurance and health education as part of the registered maternity care professionals examination. ^{25,12,4}	Programmes for the preparation of registered maternity care professionals will contain specific elements relating to communication skills. Communication skills will be assessed as part of the process of overall assessment process.

Challenges

- *To provide supervised practice for trainees.*
- *To maintain professional competence in the routine examination of the newborn.*
- *To provide training opportunities for all those registered maternity care professionals who can make use of these skills*

Section 3: The actual routine examination of the newborn¹

Key point

There is no published agreement on what should be included in the routine examination of the newborn baby.

3.1 Preparing for the examination

Statements	Reasons for statement	How to demonstrate statement is being achieved
The family, maternal and perinatal histories are reviewed: Identified risk factors and provisional plans for follow-up must be actioned.	Many potential problems can be identified from risk factors in the family and pregnancy history. ²²	All relevant history, risk factors and referrals from the pregnancy and intrapartum care are available and documented in the Scottish Woman Held Maternity Record (SWHMR). ²⁷
The findings from the initial examination at birth are reviewed	The findings of the initial examination form part of the preparation for the routine examination of the newborn.	Audit demonstrates adequate documentation available at time of review, eg case-records/hand-held notes. All relevant history, findings and referrals from the initial examination are available and documented in the Scottish Woman Held Maternity Record (SWHMR). ²⁷
The condition of baby since birth, including feeding, will be considered and discussed with the parents and other professionals involved.	Parents naturally examine their baby and will have observed their physical and behavioural features, and need time to express any observations or concerns. Some problems may present with signs and symptoms, which the parents may have observed but not reported.	Audit of the baby record indicates the presence of parents and any concerns they expressed about their baby.
Verbal consent for the routine examination of the newborn will be sought and the discussion and outcome documented.	Consent should always be sought prior to any procedure. ^{1,7,28}	Audit of the baby record evidences discussion and parental consent for examination.
The parents' opinion of their baby is sought and discussed throughout the examination.	Maternal satisfaction with examination of the baby is increased if given the opportunity for discussion. ²⁶	Parents report, through local audit, feeling involved in the assessment and examination of their baby.
The registered maternity care professional will comply with hand hygiene standards before, during and after the examination. Surfaces and equipment will be prepared appropriately to minimise the risk of cross infection.	All healthcare professionals have a responsibility to ensure that they undertake adequate hand hygiene and to encourage others delivering care to do so. ²⁹	Local infection control audit.

¹ Note of clarification; Baston and Durward²¹ describe the examination of the baby in five main parts and that format is used in this section.

3.2 Observation

Statement	Reasons for statement	How to demonstrate statement is being achieved
<p>The examination of the baby begins, prior to touching the baby, with observation of general appearance, position and movement.</p> <p>The exposed parts of the baby will be observed prior to the hands on examination of the baby (see Appendix 1).</p>	<p>The baby's colour, breathing, activity, posture and general proportions can all be assessed before disturbing the baby.²²</p> <p>Much can be learned by observing the baby in the resting, non-stimulated state.</p>	<p>There is evidence of observation of the baby's general appearance in the records.</p>

3.3 Physical examination

The components of the routine examination of a baby agreed by the working group are outlined in Appendix 1, but it would be impractical to cover the range of possible findings in this best practice statement. The professional is referred instead to several comprehensive texts.^{22,30,32}

Statement	Reasons for statement	How to demonstrate statement is being achieved
<p>The routine examination of the newborn will be conducted in a structured manner.</p>	<p>A structured approach ensures all aspects of the routine examination of the newborn are completed in a consistent manner.</p>	<p>The documentation reflects the structured manner in which the routine examination of the newborn is conducted to ensure completeness of information.</p>

3.4 Explanation and discussion

Statement	Reasons for statement	How to demonstrate statement is being achieved
Discussion with the parents during the examination will be followed by a review of the findings. Unexpected findings will be communicated in an empathetic manner and appropriate information and support will be provided.	Ongoing discussion of the issues in context helps understanding. It is important when discussing potential problems to be open, clear and consistent with the information to parents and to convey this information in a sensitive manner.	The content of discussion with the parents and their response is summarised in the baby's records. Parents report receiving and understanding information discussed following the examination of their baby.

Challenges

- *To ensure the professional does not project his/her own feelings about possible abnormalities on to the parents and/or the baby.*
- *To ensure up-to-date information is readily accessible to the registered maternity care professionals conducting the routine examination of the newborn*

3.5 Documentation

Statement	Reasons for statement	How to demonstrate statement is being achieved
The findings of the routine examination of the newborn will be recorded in the baby's record. All information regarding the condition of the baby will be recorded in a manner, manually or electronically, to allow for local and national clinical review and audit.	The legal duty of care requires professionals to keep accurate records of their findings and actions. ^{17, 28}	Audit of the baby's record will demonstrate a comprehensive record of the baby's examination.

Appendix 1

What must be considered and examined during the routine examination of the newborn?

A Definition

The routine examination is the examination of a baby undertaken usually between 6 and 24 hours of life and before 72 hours. The baby is thought to be well and without significant problems. This examination is carried out on babies being cared for in a postnatal ward or at home. It is essential to review the maternal and family history before undertaking the examination.

B Problems anticipated from the history

The antenatal booking visit presents an opportunity to elicit specific issues in the family history relevant to the new baby as well as those relevant to the mother and the pregnancy. For example, a family history of hearing impairment, cardiac abnormality, developmental dysplasia of the hips or additional support needs of previous children are all risk factors. Similarly, a family history of recent exposure to active tuberculosis should raise the question of Bacille Calmette-Guérin (BCG) immunisation for the baby or if the criteria for BCG vaccine are met (under new neonatal BCG vaccination schedule). Referrals should be discussed with the parents, and those who will be involved in the baby's care after delivery, and agreed beforehand.

C Problems arising in the current pregnancy

Issues may have arisen during the pregnancy which require special consideration following the birth, for example, poor fetal growth. Child health surveillance should be considered part of antenatal care. The routine examination of the newborn is a continuation of this surveillance. The centile chart where the baby's weight, length and head circumference are recorded should be reviewed to ensure there are no growth discrepancies. Any deviations should be investigated or referred as appropriate.

D Problems arising at birth

Some issues, which are potential risk factors for the baby, may arise in labour. Maternity units should have evidence-based guidelines governing these factors, eg maternal group B streptococcus policy or maternal pyrexia in labour.

Appropriate plans should be made before delivery in response to any anticipated risk factors in consultation with the parents and communicated to healthcare professionals undertaking the care of the baby.

E Performing the routine examination

- The examination is completed incorporating measures to prevent cross-infection and undertaken in a warm environment with good lighting.
- Observations should be made prior to disturbing the baby, ie colour, respiration, behaviour, activity and posture.
- It may be advantageous to listen to the heart when the baby is calm, but this does not preclude later examination if possible.

Examine the exposed parts of the baby first

- Examine scalp, head, face, nose, mouth including palate, ears, neck and general symmetry of head and facial features.
- Check eyes with an ophthalmoscope and test for the 'red reflex'.
- If exposed, the limbs, hands, feet and digits can be examined at this point or left until later, again assessing proportions and symmetry.

Undress the baby to complete the remainder of the examination while maintaining a warm environment

- Cardiovascular system – this includes feeding history, colour, heart rate, rhythm and femoral pulse volume as well as listening to the heart for a murmur. Baston and Durward²² recommend listening at five areas of the chest to assess heart sounds and detect murmurs. The parasternal and epigastric area should be palpated for evidence of an overactive heart. The cardiovascular assessment should also include palpation of the abdomen to identify any organomegaly.
- Early investigation of cardiac murmurs, preferably by echocardiogram can clarify if there is a significant cardiac anomaly, but this service is not always available. Therefore appropriate referral and follow-up should be initiated as per local policy and guidelines. Absence of a murmur does not however guarantee there is no cardiac anomaly, other markers include cyanosis and poor pulses.³³
- Respiratory effort (in conjunction with other signs of respiratory problems such as tachypnoea at rest, retraction, grunting and nasal flaring) can be assessed at the same time as the cardiovascular assessment. Observe the rate and pattern of chest movement. Listen to the air entry to check for crackles and stridor. Crackles may indicate underlying infection and heart failure. Stridor may indicate airway obstruction.²²
- Clavicles and upper limbs - observation, palpation and examination to identify any abnormalities, for example Erb's palsy.
- Abdomen – observe colour and shape and palpate to identify any organomegaly. The condition of the umbilical cord can be included at this time. Information on the number of cord vessels should be included in the case records.

-
- Renal area – although with antenatal ultrasound examination now many suspected renal abnormalities are detected prior to birth it has been shown that palpation performed bimanually does detect additional renal anomalies. As early discovery of an asymptomatic anomaly enables early treatment of the complications, it is worthwhile including the palpation of the loins to exclude any unexpected masses.
 - Genitalia and anus – assess gender and appearance of genitalia. Patency of anus is examined.
 - The femoral pulses must be palpated at this time if not already done.
 - Spine – with baby prone inspect for completeness of bony structures and skin. Observe the coccygeal area, checking for incurving reflex and note any abnormal pigmentation and sacral dimple.
 - Skin – while examining other aspects of the baby any skin lesions should be identified and discussed with parents. The examination of the skin will include any variations from normal skin colour, for example, jaundice and cyanosis.
 - Reflexes – the Moro, grasp, rooting and sucking reflexes are assessed. Throughout the examination, the baby's behaviour and posture can be noted to complete the assessment of the central nervous system.
 - Hips – historically this examination is carried out towards the end of the assessment, but hip instability is best detected when the baby is least disturbed. The proportions and symmetry of the lower limbs and skin folds are examined before testing hip stability. It is important to view the skin creases from the posterior aspect of the thigh, and to look for any skeletal skew.
 - Following gentle abduction the hips are tested using both the Barlow and Ortolani's tests to ensure they are neither dislocated or dislocatable.
 - Feet – observe and examine to identify postural abnormalities, for example, talipes
 - Cry – noting aspects of the baby's cry can indicate possible underlying conditions which require investigation and or treatment.

On completing the examination the baby is re-dressed and offered to the parents for a cuddle, or left comfortable in the cot while the examiner completes the documentation.

F Communication and documentation

- Discuss the findings with the parents and answer any questions or queries.
- Ensure that the findings of the examination are appropriately and accurately recorded.

- Confirm the findings in discussion with the parents.
- Ensure those involved in providing future health care to the family, eg maternity unit and community midwives and GPs, receive the relevant information relating to the baby.

G Referral

- The professional examining the baby must have the knowledge and ability to refer promptly and directly to the appropriate professional, when a potential problem is identified.
- There should be clear and defined local policies on timing of examination. Clear referral routes and systems should be in place for all potential problems identified from the routine examination of the newborn.²⁴
- Ideally this is directly to paediatric services (depending on the geographical area) and, if in the community, the GP should also be informed.
- All babies with cardiac murmurs are referred for immediate review and investigation.
- Automatic referral of babies in which risk factors are present, regardless of clinical findings, can reduce the incidence of late presentation of hip abnormalities.^{21,34} Babies in high risk groups for hip problems must be referred for secondary screening within the locally agreed protocol.
- Babies, in whom there is a history of hereditary eye conditions in the immediate family, should be referred for examination by a specialist.
- Parents are given a full explanation of the reason and timescale of the referral.

H Neonatal screening

- Screening for Congenital Hypothyroidism, Phenylketonuria and Cystic Fibrosis, and the Universal Neonatal Hearing Screening, is offered in the neonatal period.
- The professional undertaking the routine examination will ensure that the parent has received information about the 'blood spot screening' and hearing test.³⁵

I Neonatal BCG vaccination

Since 2005, a programme has been introduced targeting earlier vaccination for babies and individuals most likely to be exposed to tuberculosis (TB).

- Local guidelines for neonatal BCG vaccination should be followed.

J Hepatitis B vaccination in the newborn

Babies at risk

- Identify babies from risk groups of maternal intravenous drug user, hepatitis B positive mother.
- Request written consent to give vaccine/hepatitis B immune globulin (HBIG) and ensure parents understand the need for neonatal prophylaxis and importance of the baby receiving the full four doses of vaccine.
- Give the parents the information leaflet - Hepatitis infection in the newborn, information for parents.
- The first vaccine and HBIG (if required) should be given as soon as possible after birth (within 12 hours, no longer than 24 hours).
- Follow the management as per the local policy and appropriate vaccine schedule.
- Complete records and vaccination documentation and copy to GP, health visitor, child health and public health to ensure recall systems are in place for follow-on appointments.

K Babies born to mothers with hepatitis C virus (HCV)

Screening and referral

Babies born to mothers with HCV and who are C polymerase chain reaction (C PCR) positive need to be followed up by a paediatric specialist.

Management (consult local guidelines)

- After birth – a blood sample will be taken from baby for hepatitis C antibody and hepatitis PCR.
- A blood sample will be taken from mother taken for hepatitis C PCR.
- Follow-up appointments for paediatric specialist to be arranged for repeat hepatitis C antibody/PCR bloods
- If PCR positive on two or more occasions, then infection has occurred – long term follow up for chronic liver disease will be required.
- Immunisation for hepatitis A and B advised if infection confirmed.

Breast feeding

- Hepatitis C virus can be detected in breast milk, but no difference in infection rates has been observed between breast-fed and bottle-fed babies.
- Asymptomatic maternal HCV infection is not a contra-indication to breast feeding.³⁶⁻³⁹



Appendix 2

Audit tool

Please see the NHS Quality Improvement Scotland website (www.nhshealthquality.org) to download a Word version of this audit tool to save and use electronically or print to use by hand.

	Section	Y	N	Do not know	Action and comments
1	Section 1: The where, when, what and by whom				
1.1	Where				
a	Appropriate accommodation is provided for carrying out the examination of the newborn				
b	Privacy is ensured to discuss family health issues				
c	Sufficient time is allowed to carry out an unhurried examination				
1.2	When				
a	The routine examination is carried out by an appropriately trained registered maternity care professional between 6 and 72 hours after the birth and with the parents' consent				
b	The registered maternity care professional demonstrates knowledge and understanding of the baby's need to pass urine and meconium and the significance when a baby does not carry out these functions				
c	The registered maternity care professional demonstrates awareness that the examination must be carried out when the baby is quiet and alert				
1.3	What				
a	Appropriate information is provided to parents on aims and limitations of the routine examination of the newborn (eg leaflets, providing interpreter if necessary)				
b	Information is provided to parents on where to get further advice				
1.4	Who				
a	The routine examination of the newborn is carried out by a registered maternity care professional who has received appropriate training				
b	The routine examination of the newborn is experienced by the parents as informative and educational and is, wherever possible, conducted in the presence of the parents				
c	The routine examination of the newborn is carried out by one registered maternity care professional				
2	Section 2: Post registration training				
a	The registered maternity care professional has completed an appropriate accredited training programme in order to carry out the examination				
b	Appropriately trained registered maternity care professionals are available to supervise and support those professionals undertaking training or updating				
c	Registered maternity care professionals who have completed the routine examination of the newborn training have the opportunity to maintain knowledge and skills through practice and periodic updating				
d	Appropriate training in communication skills relating to the routine examination of the newborn has been completed				

	Section	Y	N	Do not know	Action and comments
3	Section 3: Actual routine examination of the newborn				
3.1	Preparing for the examination				
a	Family, maternal and perinatal histories are reviewed and documented				
b	The findings from the initial examination are reviewed and documented				
c	The condition of the baby since birth has been considered and discussed with the parents and is documented				
d	Verbal consent for the routine examination of the newborn is sought and discussion documented				
e	The parents' opinion of their baby has been sought and discussed throughout the examination and is documented				
f	The registered maternity care professional complies with hand hygiene standards, and surfaces and equipment are prepared appropriately.				
3.2	Observation				
a	The routine examination of the newborn begins with the overall observation of the baby				
3.3	Physical examination				
a	The routine examination of the newborn is conducted in a structured manner				
3.4	Explanation and discussion				
a	The routine examination of the newborn is discussed with the parents and followed by a review of the findings				
3.5	Documentation				
a	The findings of the routine examination of the newborn are recorded in the baby's record				
What should be considered and examined during the routine examination of the newborn? (Appendix 1)					
A	Definition				
	The registered maternity care professional checks that the baby is thought to be well and without any significant problems				
	The maternal and family histories are reviewed before undertaking the examination				
B	Problems anticipated from the history				
	Referrals are discussed with the parents, and those involved in the baby's care after delivery, and agreed beforehand				
C	Problems arising in the current pregnancy				
	The centile chart is reviewed to ensure there are no gestational or nutritional discrepancies				
	Any deviations are investigated or referred as appropriate				
D	Problems arising at birth				
	Evidenced based guidelines are available to govern potential risk factors for the baby which may arise in labour				

	Section	Y	N	Do not know	Action and comments
E	Performing the routine examination				
	The examination is completed incorporating measures to prevent cross infection				
	Exposed parts of the baby are examined first				
	A cardio-vascular assessment is undertaken				
	Appropriate referral and follow-up (as per local policy and guidelines) is initiated if there is a cardiac anomaly				
	Respiratory effort is assessed				
	Observation, palpitation and examination of clavicles and upper limbs takes place				
	An examination of the abdomen takes place				
	A bimanual palpitation to detect additional renal anomalies takes place				
	Gender and appearance of genitalia is assessed and patency of anus examined				
	Femoral pulses are palpated				
	A spinal examination takes place				
	Any skin lesions are identified and discussed with parents				
	Reflexes are assessed				
	The proportions and symmetry of the lower limbs and skin folds are examined before testing hip stability				
	Following gentle abduction the hips are tested using both the Barlow and Ortolani's tests				
	Feet are observed and examined to identify postural abnormalities				
	Aspects of the baby's cry are noted				
F	Communication and documentation				
	The findings of the examination are discussed with the parents and any questions/queries answered				
	The findings of the examination are appropriately and accurately recorded				
	Relevant information relating to the baby is provided to those involved in the future health care of the baby				
G	Referral				
	The registered maternity care professional examining the baby has the knowledge and ability to make appropriate referrals when necessary				
	Local policies on timing of examination and clear referral routes and systems are in place				
	All babies with cardiac murmur are referred for immediate review and investigation				
	Babies in high risk groups are referred for secondary screening within the locally agreed protocol				
	Babies, in whom there is a history of hereditary eye conditions in the immediate family, are referred for examination by a specialist				
	The parents are given a full explanation of the reason and timescale of the referral				

	Section	Y	N	Do not know	Action and comments
H	Neonatal screening				
	Screening for congenital hypothyroidism, phenylketonuria and cystic fibrosis and the universal neonatal hearing screening is performed				
	Parents are given information about the 'blood spot screening' and hearing test				
I	Neonatal BCG vaccination				
	Local guidelines are followed for neonatal BCG vaccine				
J	Hepatitis B vaccination in the newborn				
	Babies from groups at risk of hepatitis B are identified				
	Written consent to give vaccine/HBIG is obtained				
	The mother is given the information leaflet 'hepatitis infection on the newborn, information for parents'				
	The first vaccine and HBIG (if required) is given as soon as possible after birth				
	Local policy and appropriate vaccine schedule is followed				
	Records and vaccination document is completed and copied to appropriate healthcare professionals				
K	Babies born to mothers with hepatitis C virus				
	If the baby is born to a mother with HCV and who are C PCR positive a follow up is arranged with a paediatric specialist				
	After birth, local guidelines are followed and blood samples are taken				
	A blood sample from the mother is taken for hepatitis C PCR				
	Follow up appointments with a paediatric specialist are arranged according to local guidelines				
	If PCR is positive on two or more occasions long term follow up for chronic liver disease is arranged				
	If infection is confirmed immunisation for hepatitis A and B is arranged				

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