NHS
Quality Improvement Scotland

Best Practice Statement ~ *April 2004*

Routine Examination of the Newborn

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Introduction

NHS Quality Improvement Scotland (NHS QIS) was established as a Special Health Board on 1 January 2003 as a result of bringing together the Clinical Resource and Audit Group (CRAG), Clinical Standards Board for Scotland (CSBS), Health Technology Board for Scotland (HTBS), Nursing and Midwifery Practice Development Unit (NMPDU) and the Scottish Health Advisory Service (SHAS).

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.

Background to Best Practice Statements

While many examples of clinical guidelines exist there is a lack of reliable statements focusing specifically on nursing and midwifery practice. The development of best practice statements reflects the current emphasis on delivering care that is patient centred, cost-effective and fair, and will attempt to reduce existing variations in practice.

The common practice that should follow their implementation will promote comparable standards of care for patients wherever they access services.

What is a Best Practice Statement?

A best practice statement is a statement to describe best and achievable practice in a specific area of care. The term 'best practice' reflects the commitment of NHS QIS to sharing local excellence at a national level. Best practice statements are underpinned by a number of shared principles (page ii).

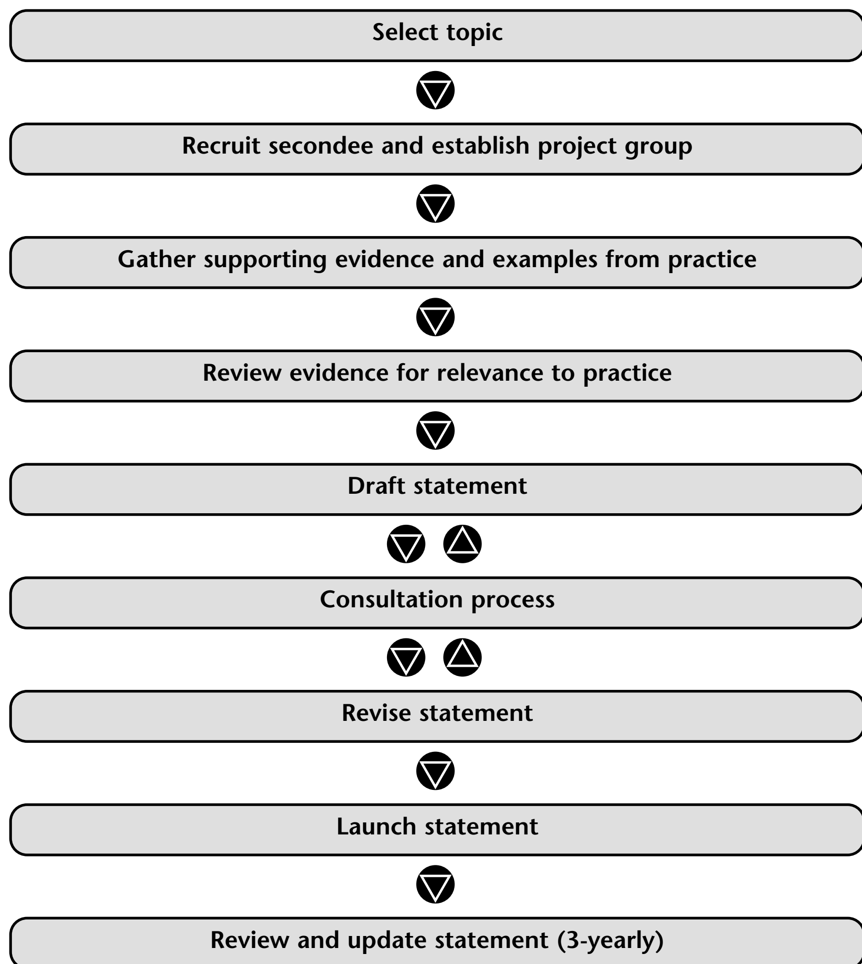
Key Principles of Best Practice Statements

- Best practice statements are intended to guide practice and promote a consistent and cohesive approach to care.
- Best practice statements are primarily intended for use by registered nurses, midwives and the staff who support them, but they may contribute to multidisciplinary working and other members of the healthcare team may find them helpful.
- Statements are derived from the best available evidence at the time they are produced, recognising that levels and types of evidence vary; where a statement is developed in the absence of research evidence and is predominantly based on consensus this will be noted.
- Information is gathered from a broad range of sources in order to identify existing or previous initiatives at local and national level, incorporate work of a qualitative and quantitative nature and establish consensus.
- Statements are targeted at practitioners, using language that is accessible and meaningful.
- Consultation with relevant organisations and individuals is undertaken.
- Statements will be reviewed and updated every 3 years.
- Responsibility for implementation of statements will rest at local level.
- Key sources of evidence and available resources are provided.

Key Stages in the Development of Best Practice Statements

A systematic process has been followed as outlined below:

The development process began in February 2003 and was led by a secondee from clinical practice with project management and support from NHS QIS. A project group and a wider reference group were set up with lay and professional representation from across Scotland.



Use of Evidence in Best Practice Statements

The need to embrace evidence in its broadest sense has been acknowledged by NHS QIS in the development of best practice statements. Best practice statements represent a unique synthesis of research evidence, evidence complemented by audit, patient surveys and evidence derived from expert opinion, professional consensus and patient/public experience.

The process for developing these statements adopts a rigorous, transparent and consistent 'bottom-up' approach to articulating best practice that involves professionals and patients, and is based on all types of available evidence.

The following stages describe the process of identifying and reviewing evidence for inclusion in statements:

1. Define question
2. Gather evidence from a range of sources including published literature, grey literature and other relevant sources, eg patient groups, manufacturers, professional groups
3. Evaluate evidence using recognised methods of evidence appraisal
4. Integrate evidence with patient-related factors, eg issues of access, equity and ethics
5. Develop recommendations
6. Evaluate process and impact of recommendations.

Sources of Evidence for the Routine Examination of the Newborn Best Practice Statement

Information obtained from three sources:

- Published literature.
- Professional networks.
- Existing local guidelines.

Literature search strategy:

- Review of key Scottish Executive documents relating to maternity services in the past 10 years.
- MIDIRS standard search - Routine Examination of the Newborn.

Electronic database searches included:

- Cumulative Index to Nursing and Allied Health Literature (CINAHL).
- British Nursing Index (BNI).
- EBSCO.
- Medline.
- National Electronic Library for Health (nelh.nhs.uk/mat).
- PubMed.

Websites accessed:

http://gateway.uk.ovid.com

http://www.sciencedirect.com

http://www.proquest.co.uk

http://adc.bmjjournals.com

http://www.midwivesonline.com

http://www.dsscotland.org.uk

http://medmotion.com/contact.html

http://www.neonatology.org/syllabus/exam.nursery.html

(Key words used: newborn examination, newborn assessment, neonatal assessment, baby assessment, examination of the newborn, heart murmurs, congenital cataract and diagnosis, developmental dysplasia, patient satisfaction, birth abnormalities).

Hand search (last 5 years) of the following journals:

- Midwifery.
- The British Journal of Midwifery (BJM).
- AIMS, Association of Radical Midwives (ARM).
- SIGN guidelines.
- Midwives (RCM Journal).

Existing guidelines and related documents from maternity units throughout Scotland.

Who was Involved in Developing the Statement?

Project Manager

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Senior Midwife (Women and Children)
NHS Quality Improvement Scotland

Project Leader

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Seconded from Fife Acute Hospitals Division

Project Group

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Anna Daley	Representing Community Practitioners & Health Visitors Association

Anne Glen	Senior Midwife, Representing Level IIc maternity service
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Dr Dean Marshall	Representing Scottish General Practitioners Committee
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Dr Elizabeth Wright	Associate Specialist, Representing Paediatric Ophthalmology

Members Who Requested Information Only

Sally Amos	Representative from Maternity Service Liaison Committee Highland
Dr Ian Bashford	Representing the Scottish Executive Health Department
Dr Charles Clark	Representing Maternity Service Liaison Commitee Lanarkshire
Nadine Edwards	Representative from Association for the Improvement of Maternity Services
Ann Kerr	Representing NHS Health Scotland
Dr Anna Murphy	Royal College of Paediatrics & Child Health Chairperson
Deanne Tomasino	Administrator Royal College of Paediatrics & Child Health (for files)

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Bette Baillie	Unit Secretary
Gillian McCracken	Communications & Information Officer (until October 2003)

Assistance, advice and support was also received and much appreciated from Dr Helen Bedford and Annette Lobo, fellow Project Midwives at NHS QIS.

Guidelines and comments were received from maternity units and colleagues throughout Scotland, especially from council members of the Scottish Neonatal Nurses Group. This information and feedback was much appreciated.

How Can the Statement be Used?

The recommended best practice statement on the routine examination of the newborn can be used in a variety of ways, although primarily it is intended to promote evidence-based practice. The statement is intended to be realistic but stretching, and can be used:

- as a basis for developing and improving the care given to women and their newborn babies;
- to promote evidence-based practice across Scotland;
- to encourage consistent training in examination of the newborn;
- as a basis for changing and developing the roles of maternity care professionals;
- to promote effective interdisciplinary team work; and
- to stimulate ideas and priorities for maternity related research.

Best Practice Statement on the Routine Examination of the Newborn

Introduction

Babies are examined 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 examination.

It is established as good practice to carry out a more detailed examination of the baby within 24 hours of birth (Hall and Elliman, 2003). 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.

Although the routine examination cannot identify all abnormalities that present in the neonatal period, it can still be described as child health screening (Ward Platt, 1998). It also has a health promotion function (Scottish Office, 1995) by providing an opportunity to discuss baby and family health issues with parents as they are beginning to care for their new baby (Tappero and Honeyfield, 1993). Hall and Elliman (2003) consider the routine examination of the baby as a continuation of the antenatal screening. They outline the following specific health promotion aims relating to:

- preventing cot death;
- recognising additional needs because of existing family illness; and
- introducing other services and agencies which can provide ongoing support.

In Scotland the routine examination of newborn babies is usually carried out by doctors. These are mainly Senior House Officers (SHOs), but in some areas a variety of other doctors take responsibility for the examination of babies, eg GPs, Associate Specialists and Community Medical Specialists.

Advanced Neonatal Nurse Practitioners (ANNPs), who have undertaken specific training which includes examination of the newborn, have recently been taking responsibility for routine examination of babies in a few hospitals, eg Dumfries and Inverness.

In recent years there has been a move to reconsider who should conduct the routine examination of the newborn (MacKeith, 1995; Lomax, 2001; Mitchell, 2003a and Mitchell, 2003b).

Both the *Framework for Maternity Services in Scotland* (Scottish Executive, 2001) and the report of the Expert Group on Acute Maternity Services in Scotland (EGAMS), (Scottish Executive, 2002), 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". (Scottish Executive, 2002: page 46).

Hall and Elliman (2003: page 347) 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 SHOs receive in the routine examination of a newborn baby is variable (Lee et al, 2001; Bloomfield et al, 2003). Similarly, as a result of the small number of home or community hospital births, GPs have reduced opportunities to maintain their skills in examination of the newborn. GPs too have many conflicting demands on their time and therefore many are reluctant to increase their involvement and responsibility (Hoddinott and Underwood, 1997).

Difficulty with the recruitment of maternity care professionals, the implementation of the 'New Deal' requirements for doctors, (Scottish Office, 1991 and Scottish Executive, 1999), and the new contract for GPs, has brought about a reconsideration of professional roles.

Midwives have some of the required skills as they already perform the initial examination 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 (RCM, 2002).

Other issues that can impact on the routine examination of the newborn, for example increase in early discharge from hospital; delays in parents getting home; babies being disturbed for examination at inappropriate

times; conflicting demands on those carrying out the routine examination of the baby; were all discussed but cannot necessarily be addressed by a best practice statement or additional training.

Neither Scotland nor England has nationally agreed evidence-based guidelines for any professional undertaking the routine examination of a baby. There is no established post-registration preparation course in Scotland for maternity care professionals to acquire the enhanced skills required to perform the routine examination of the newborn.

This best practice statement provides guidelines for all maternity care professionals undertaking the routine examination of newborn babies, and is based on the evidence currently available together with a consensus of established practice.

It includes the course descriptor, sample programme and assessment strategy for the Scottish Routine Examination of the Newborn course. Along with the core competencies required for the routine examination of newborn babies, this work is being completed in collaboration with the Scottish Multi-Professional Maternity Development Group (SMMDG). This programme is designed to meet the training requirements of any maternity care professional undertaking the routine examination of the newborn.

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.

Professional is used to include midwives, neonatal practitioners, GPs, other doctors and any allied health professionals (AHPs) who have the appropriate knowledge and skills required for the routine examination 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.

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 professional and the ability of the parents 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 professional and parents, eg hospital, clinic or home.	The baby needs to be kept safe and warm while being examined. The professional requires good light, and there needs to be sufficient uninterrupted time for the parents 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 notes for audit purposes.
Privacy should be provided particularly when discussing family health issues of a sensitive nature.	Confidentiality needs to be maintained when discussing sensitive issues.	The majority of parents and professionals report, via local audit, that examinations were conducted in a suitable environment, at a mutually convenient location, were uninterrupted, and privacy was provided when necessary.
The professional should 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.	Parents report having sufficient time for discussion.

Challenges ~

- *Ensuring that the professional does not have to respond to emergencies, bleeps or telephone calls during an examination.*
- *To provide privacy for discussions of a confidential nature, especially in hospital.*
- *In the home the demands of the other children could interrupt and distract the participation of both parents.*
- *To provide sufficient resources to allow the routine examination to be carried out at home.*

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
The routine examination of the baby will be carried out at a time suitable to the baby, parents and professional conducting the examination. This is usually between 6 and 24 hours, but before 72 hours of life.	Current practice is to examine babies within the first 24 hours of life (Hall and Elliman, 2003). It is commonly carried out between 6-72 hours (Rose, 1994; Woodall, 1999). There is no optimal time to examine a baby which will detect all possible abnormalities (Sherratt 2001).	The age of the baby at examination is recorded and available for audit. In local audit, parents report an understanding of the reasons for the timing of the examination.
If the baby has not passed urine and meconium by the time of the routine examination, this should be clearly documented and followed up by midwifery staff. If there is an ongoing delay the baby needs investigated.	Examination after 6 hours allows time for the baby to adapt to extra-uterine life, to have had the opportunity for at least one feed, and to possibly have passed urine and meconium.	The time of passage of the first urine and meconium will be recorded in the baby record.
It is preferable that the examination is conducted when the baby is quiet and alert, not hungry or crying. 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.	The baby's hunger and state of alertness can affect the accuracy of the examination (Jones, 1998; Baston and Durward, 2001).	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.

Challenge ~

- *The professionals should try to schedule all their varied activities to be free to examine all babies at an appropriate age and in appropriate circumstances.*

1.3 Key Point ~

What: the routine examination of a baby can only demonstrate there were no problems detected at that point in time (Sherratt, 2001).

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
Parents are informed, ideally both verbally and in writing, of 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.	Parents are empowered by information (Roberts, 1998) and an information leaflet could aid communication (Bloomfield et al, 2003). Many conditions which will require future intervention, eg cardiac, orthopaedic and ophthalmic cannot always be identified at the routine examination (Wren et al, 1999; Jones, 1998; Rahi and Dezateaux, 1999).	Parents report receiving information outlining the extent and limitations of the routine examination of their baby.
Parents are informed of when, from whom, and how to get advice if they are concerned about their baby.	Assessment of the baby in the newborn period is a continuous process performed by the parents and all professionals involved in maternity care.	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.

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 form that meets their needs.*

*It is hoped that this information leaflet will be produced nationally and be available for all parents in Scotland.

1.4 Key Point ~

Who: continuity of care and carer has been shown to bring greater satisfaction in mothers (Wolke et al, 2002) and increased job satisfaction in midwives when they were able to practice autonomously (Hundley et al, 1995).

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
The examination of the baby will be carried out by a maternity care professional, who has received specific training, and is involved in another aspect of the mother or baby's care.	Continuity of carer increased maternal satisfaction with the examination of the baby (Wolke et al, 2002). Rogers et al (2003) found that continuity of carer within postnatal care was sufficient to improve communication. Limiting the routine examination of the newborn to only one profession can limit choice for women: "a lot of mothers like doctors to do these sort of things" (Rogers et al, 2003: page 60).	The majority of parents report that the professional who performed the routine examination of their baby had some involvement in other aspects of their care.

Challenge ~

- *To increase the continuity of carer in respect of the routine examination of the newborn.*

Section 2: Post Registration Training for Professionals Undertaking the Routine Examination of the Newborn

Key Point ~

Health 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 professional conducting the routine examination of the baby will have received specific training, which meets the standard and provides the core competencies outlined in Appendix 1 of this document.	The professional completing the examination must be able to understand the relevance of the examination, and examine, assess and identify normality and abnormality and be able to refer appropriately (Scottish Executive, 2002).	There is a validated training programme to provide ongoing education and training in the routine examination of the baby. This programme is suitable to all maternity care professions.
There are professionals, trained and experienced in examining babies, available to supervise and support those professionals undertaking training or updating. These may be Doctors, Midwives, Advanced Neonatal Nurse Practitioners (ANNP) or come from Allied Health Professions.	The effectiveness of the examination of the newborn can be improved if the maternity care professionals receive specific training, which comprises both theoretical and clinical components (Lee et al, 2001).	An index of maternity care professionals who have completed the Scottish Routine Examination of the Newborn Course will be maintained by the Scottish Multi-Professional Maternity Development Group (SMMDG). This record will include the name of the professional who supervised the trainee examiner.
Professionals trained in the routine examination of the baby will have the opportunity to maintain their knowledge and skills through practice and periodic updating.	Health professionals trained in examination of the newborn need to be able to practice to maintain their skills.	To ensure the SMMDG Index is up to date, the professionals will be contacted on a 3-yearly basis.

Challenges ~

- *To provide supervised practice for trainees.*
- *To maintain professional competency in the routine examination of the newborn.*
- *To provide training opportunities for all those professionals who can make use of these skills.*
- *To provide training for professionals in rural and remote locations.*

Section 3: The Actual Routine Examination of the Newborn [1]

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

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
The family, maternal and perinatal histories are reviewed: risk factors and provisional plans for follow-up should be actioned.	Many potential problems can be identified from risk factors in the family (Baston and Durward, 2001).	All relevant history and findings from the initial examination are available and documented.
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.	
The condition of the baby since birth, including feeding, will be considered and discussed with the parents and other professionals involved.	Parents naturally examine their baby and will likely 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.	The baby record indicates the presence of parents and any concerns they expressed about their baby.
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 (Wolke et al, 2002).	Parents report, through local audit, feeling involved in the assessment and examination of their baby.

1. Note of clarification: Baston and Durward (2001) 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
The exposed parts of the baby are observed prior to the hands-on examination of the baby (see Appendix 2).	The baby's colour, breathing, activity, posture and general proportions can all be assessed before disturbing the baby (Baston and Durward, 2001).	There is evidence of the baby's general appearance in the records.

3.3 Physical Examination

The components of the routine examination of a baby agreed by the group are outlined in Appendix 2, 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 (eg Baston and Durward, 2001; Tappero and Honeyfield, 1993; Lissauer, 2002; Rennie and Gandy, 1999).

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
The routine examination is conducted in a structured manner using inspection, palpation and auscultation where appropriate according to local guidelines.	A structured approach ensures all aspects of the routine examination are completed in a consistent manner while causing the least disturbance to the baby and the optimal conditions for detecting unexpected findings.	The documentation reflects the structured manner in which the routine examination is conducted to ensure completeness of information.

3.4 Explanation and Discussion

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
Discussion with the parents during the examination is followed by a review of the findings.	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.	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 keep a positive attitude in light of unexpected findings.*
- *To ensure the professional does not project their own feelings about possible abnormalities on to the parents and/or the baby.*

3.5 Documentation

Statement	Reasons for Statement	How to Demonstrate Statement is Being Achieved
The findings of the initial and routine examination will be recorded contemporaneously in the baby's record and Scottish Birth Record (SBR). 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 (Nursing and Midwifery Council, 2002; General Medical Council, 2003).	The baby's record contains legible information on: • risk factors identified; • the birth details; • findings from the initial and routine examination; • the time and age of the baby at examination; • the place of examination; • problems which required intervention in the neonatal period; • referrals made; • discussions with the parents; and • names and status of professionals involved.

Challenge ~

- *To have a national system in Scotland of recording the initial and routine examination of the newborn which requires only one entry and uses the same terminology, eg Scottish Birth Record and Scottish Women-Held Maternity Record.*

Appendix 1

The Scottish Routine Examination of the Newborn Course Including Core Competencies

This appendix is an outline of the above course including the core competencies required for examination of the newborn. The specific details are subject to validation by NHS Education for Scotland (NES). When this process is complete the course information and documents will be available via a website being developed by the Scottish Multi-Professional Maternity Development Group (SMMDG).

Background

The Scottish Routine Examination of the Newborn Course has been developed to provide a standardised training course for all healthcare professionals in the routine examination of the newborn. The course is developed from the best practice statement produced by NHS Quality Improvement Scotland (2003). Even though the course includes both a theoretical test of knowledge and assessment of examination skills, it does not guarantee ongoing competence in the routine examination of the newborn. This can only be assessed by senior staff in the clinical environments in which candidates work.

The course consists of three parts:

- Part I - Guided study of the course handbook and a formative multiple choice question (MCQ) examination.
- Part II - Three days of taught input assessed summatively by MCQ. This part must be completed successfully before progressing to the final part of the course.
- Part III - Clinical experience in which candidates undertake supervised practice in the routine examination of the newborn. Candidates will normally be expected to complete this part of the course within 6 months of completion of Part II.

Appendix 1
Course Descriptor

Course title	Scottish Routine Examination of the Newborn Course.
Course aim	The aim of the course is to provide candidates with the opportunity to acquire the skills and knowledge to undertake the routine examination of the newborn.
Course learning outcomes	Candidates will be able to: • Demonstrate a thorough understanding of the anatomy and physiology of the newborn. • Demonstrate that they meet the best practice statement criteria in undertaking the routine examination of the newborn, including referral pathways.
Indicative content	• Maternal, family and perinatal histories and their relevance to the routine examination of the newborn. • Risk assessment and decision-making. • Unexpected findings and referral pathways. • Communication skills.
Teaching and learning strategies	• Course handbook – guided study • Lectures • Skill stations • Workshops • Discussion groups
Assessment strategy	• Formative and summative MCQ examination. • Clinical assessment that should normally be completed within 6 months following the successful completion of Part II of the course. • Reflective diary (formative).
Nominal study hours	• Part I 60 hours • Part II 18 hours • Part III individual supervised clinical practice of up to 6 months
Minimum number of instructors to participants	One instructor to six candidates (skill stations).

Number of instructor candidates on a course	Not more than 50%.
Indicate who is likely to benefit from the course	Admission to the course is open to registered health professionals who have the opportunity to achieve and maintain competence in the routine examination of the newborn.
Equipment/ resources required for course	See prescribed teaching resource list.

Appendix 1
Sample Programme

Part I

Guided study and formative MCQ examination.

Part II

Day 1

09.00 - 10.30 Lectures on the significance of maternal, family and perinatal histories to the routine examination of the newborn.

10.30 - 11.15 Lecture: Risk assessment and decision-making.

11.20 - 12.30 Workshop: The structured approach to the routine examination of the newborn.

Skill Stations

	Use of ophthalmoscope and eye examination	Abdominal palpation and femoral palpation	Heart murmurs and auscultation of the chest	Hip testing
13.30	A	B	C	D
14.00	B	A	C	D
14.30	C	D	A	B
15.00	D	C	A	B

Day 2

09.00 - 12.30 Lectures on the significance of unexpected findings and their immediate management, including possible referral pathways.

Skill Stations

	Use of ophthalmoscope and eye examination	Abdominal palpation and femoral palpation	Heart murmurs and auscultation of the chest	Hip testing
13.30	C	D	B	A
14.00	D	C	B	A
14.30	A	B	D	C
15.00	B	A	D	C

Day 3

09.00 - 10.00	Lecture on the significance of unexpected findings and their immediate management, including possible referral pathways.
10.30 - 11.15	Workshop: Communication skills, breaking bad news, dealing with difficult situations.
11.20 - 12.30	Scenarios.
13.30	Summative MCQ examination.

Part III

Supervised clinical practice of up to 6 months.

Suggested Teaching Resources – Determined by Working Group:

- Lecture slides and PowerPoint projector.
- CD player.
- Flip charts.
- Stethoscopes.
- 'Hippy' doll.
- Ophthalmoscopes.
- Blankets.
- Manikin with moving joints.
- Centile charts.
- Tape measures.
- Hip joint.
- Video - Examination of the Newborn.

Appendix 1

The Scottish Routine Examination of the Newborn Course

Guided Study

The course handbook is *Examination of the Newborn: A Practical Guide* by Helen Baston and Heather Durward. It was published by Routledge in 2001 and is available from medical bookshops or to order from good bookshops.

You will be required to read the content of the book before undertaking the taught component of the course so you should allow yourself at least 60 hours total study time. A study guide, that you might find helpful, has been prepared for you.

Topic	Learning outcomes (normality) – As a result of reading these sections, the candidate is expected to be able to:	Essential reading – normality	Learning outcomes (abnormality) – As a result of reading these sections, the candidate is expected to be able to:	Essential reading – abnormality	Further interest
Accountability	Describe professional responsibilities and boundaries in relation to the examination of the newborn.	Chapter 7, pages 168-184	Describe the role of the multidisciplinary team in the care of the baby in whom abnormality is suspected.	Chapter 7, pages 168-184	
Maternal/Fetal/ Family History	Describe the influence(s) of maternal, family and perinatal histories on the examination of the newborn.	Chapter 5	Describe how fetal development and perinatal events inform the examination of the newborn.	Chapter 1-4	
Scalp	Describe the normal features of the scalp.	Pages 66-68	Describe possible abnormal findings when examining the scalp.	Pages 114-116	
Face	Describe the normal features of the face.	Page 70	Describe possible abnormal findings when examining the face.	Pages 117-118	
Mouth	Describe the normal features of the mouth.	Pages 70-71	Describe possible abnormal findings when examining the mouth.	Pages 119-120	
Nose	Describe the normal features of the nose.	Page 71	Describe possible abnormal findings when examining the nose.	Page 118	
Ears	Describe the normal external features of the ears.	Page 71	Describe possible abnormal findings when examining the ears.	Pages 120-121	
Eyes	Describe the normal features of the eyes.	Pages 71-72	Describe possible abnormal findings when examining the eyes.	Pages 121-124	

Topic	Learning outcomes (normality) – As a result of reading these sections, the candidate is expected to be able to:	Essential reading – normality	Learning outcomes (abnormality) – As a result of reading these sections, the candidate is expected to be able to:	Essential reading – abnormality	Further interest
Neck	Describe the normal features of the neck.	Page 73	Describe possible abnormal findings when examining the neck.	Page 124	
Limbs	Describe the normal features of the limbs.	Page 73	Describe possible abnormal findings when examining the limbs.	Page 124	
Hands/Feet/Digits	Describe the normal features of hands/feet and digits.	Page 73	Describe possible abnormal findings when examining the hands/feet/digits.	Pages 124-126	
Chest	Describe the normal features of the chest.	Page 73	Describe possible abnormal findings when examining the chest.	Page 131	
Cardiovascular system	Describe the normal features of the cardiovascular system.	Pages 73-80	Describe possible abnormal findings when examining the cardiovascular system.	Page 102-103 & Pages 132-133	Pages 143-150
Respiratory system	Describe the normal features of the respiratory system.	Pages 80-82	Describe possible abnormal findings when examining the respiratory system.	Pages 103-105 & Pages 133-134	Pages 151-152
Abdomen	Describe the normal features of the abdomen.	Pages 82-85	Describe possible abnormal findings when examining the abdomen.	Page 105 & Pages 134-137	Pages 152-154
Male genitalia	Describe the normal features of male genitalia.	Pages 85-86	Describe possible abnormal findings when examining the male genitalia.	Page 106 & Pages 137-139	Pages 155-156
Female genitalia	Describe the normal features of female genitalia.	Pages 86-87	Describe possible abnormal findings when examining the female genitalia.	Page 106 & Pages 137-139	Pages 155-156
Anus	Describe the normal features of the anus.	Page 87	Describe possible abnormal findings when examining the anus.	Pages 140-141	
Groin	Describe the normal features of the groin.	Page 88	Describe possible abnormal findings when examining the groin.	Pages 136-138	
Hips	Describe the normal features of the hips.	Pages 88-89	Describe possible abnormal findings when examining the hips.	Pages 141-142	

Topic	Learning outcomes (normality) – As a result of reading these sections, the candidate is expected to be able to:	Essential reading – normality	Learning outcomes (abnormality) – As a result of reading these sections, the candidate is expected to be able to:	Essential reading – abnormality	Further interest
Spine	Describe the normal features of the spine.	Page 89	Describe possible abnormal findings when examining the spine.	Pages 142-143	
Central nervous system	Describe the normal features of the central nervous system.	Pages 89-91	Describe possible abnormal findings when examining the central nervous system.	Pages 101-102, Page 106 & Page 114	
Size	Describe the normal features of a term newborn infant.	Page 92	Describe possible abnormal findings when examining the size of the baby.	Page 156-157	
Skin	Describe the normal features of the skin.	Page 98	Describe possible abnormal findings when examining the skin.	Page 107, Page 117, & Pages 126-131	
Temperature	Describe the range of normal temperature.	Pages 97-98	Describe possible abnormal findings when recording the baby's temperature.	Pages 97-98	
Behaviour	Describe the normal features of newborn behaviour at term.	Page 99	Describe possible abnormal findings when examining the behaviour of the baby.	Page 107 & Page 113	
Feeding	Describe normal feeding patterns of a baby born at term.	Page 100	Describe possible abnormal findings when examining the feeding pattern of the baby.	Page 101 & Page 113	
Movement/Tone	Describe the normal tone and movement for a baby born at term.	Page 101	Describe possible abnormal findings when examining the baby's ability to move/tone.	Pages 101-102 & Page 114	

Appendix 1

The Scottish Routine Examination of the Newborn Course

Core Competencies for Maternity Care Professionals Conducting the Routine Examination of the Newborn

1.0 Cognitive

1.1 Interprets the significance of the maternal, family and perinatal histories, in relation to the examination of the newborn.

1.2 Knows how to refer, and demonstrates this by selecting the correct referral pathway.

1.3 Provides accurate information to the key professional(s).

1.4 Generates clear and concise reports.

1.5 Generates complete reports contemporaneously.

2.0 Psychomotor

2.1 Adapts the environment to ensure adequate lighting and warmth during the examination of the newborn.

2.2 Creates an environment that ensures privacy for the parents and the baby during the examination of the newborn.

2.3 Adapts the environment to ensure the baby's safety and comfort during the examination of the newborn.

2.4 Performs the examination of the newborn using a systematic approach.

2.5 Differentiates between normal and abnormal/unexpected findings during the examination.

2.6 Compiles contemporaneous records of the examination.

2.7 Identifies the parental needs in relation to information giving during the examination.

2.8 Responds to the needs of parents in a respectful and supportive manner.

2.9 Explains the procedure for the examination of the newborn to the parents.

2.10 Responds effectively to the concerns expressed by parents.

2.11 Organises referrals according to the local procedures.

2.12 Explains effectively the need for referral to the parents.

3.0 Affective

3.1 Explains the findings of the newborn examination clearly and concisely.

3.2 Verifies parents' understanding of oral communication relating to the examination of the newborn.

Appendix 1
The Scottish Routine Examination of the Newborn Course

Assessment Sheet

Cognitive Domain		
Competencies	**Does Not Meet the Best Practice Standard**	**Meets the Best Practice Standard**
Interprets the significance of the maternal, family and perinatal histories in relation to the examination of the newborn.	Fails to interpret the significance of maternal, family and perinatal histories in relation to the examination of the newborn.	Interprets the significance of maternal, family and perinatal histories and relates the findings to the examination of the newborn.
Knows how to refer and demonstrates this by selecting the correct referral pathway.	Fails to refer abnormal/unexpected findings.	Refers abnormal/unexpected findings using the correct referral pathway.
Provides accurate information to key professional(s).	Fails to provide accurate information to key professional(s).	Communicates effectively with the key professional(s).
Generates clear and concise reports.	Fails to generate reports that are clear and concise.	Reports are clear and concise.
Generates complete reports.	Generates incomplete reports.	Reports are complete.

Psychomotor Domain

Competencies	Does Not Meet the Best Practice Standard	Meets the Best Practice Standard
Adapts the environment to ensure adequate lighting and warmth during the examination of the newborn.	Fails to ensure that the environment is adequately lit and warm during the examination of the newborn.	Ensures environment is warm and well-lit during the examination of the newborn.
Creates an environment that ensures privacy for the parents and the baby during the examination of the newborn.	Fails to ensure privacy for the parents and the baby during the examination of the newborn.	Ensures privacy for the parents and the baby during the examination of the newborn.
Adapts the environment to ensure the baby's safety and comfort during the examination of the newborn.	Fails to meet the baby's needs for safety and comfort during the examination of the newborn.	Ensures the safety and comfort of the baby during the examination of the newborn.
Performs the examination of the newborn using a systematic approach.	Unsystematic approach to the examination of the newborn.	Systematic and thorough approach to the examination of the newborn.
Differentiates between normal and abnormal/unexpected findings.	Misses important aspects of examination and/or abnormal/unexpected findings.	Elicits abnormal/unexpected findings.
Compiles contemporaneous records of the examination of the newborn.	Fails to write up records contemporaneously.	Records written contemporaneously.
Identifies parental needs in relation to information giving.	Fails to identify parental needs for information.	Elicits parental needs for information.
Responds to the needs of parents in a respectful and supportive manner.	Fails to acknowledge needs of parents.	Supportive and respectful to parents.
Explains the procedure for examination of the newborn to the parents.	Fails to explain procedure and/or fails to check understanding.	Explains procedure effectively to parents and checks understanding.
Responds effectively to the concerns of the parents.	Does not address concerns.	Addresses concerns and ensures that they have been allayed.
Organises referrals according to local procedures.	Fails to follow local procedures when organising referrals.	Referrals organised effectively according to local procedures.
Explains effectively the need for referral to the parents.	Inadequate information about referral provided to parents.	Information about referral communicated effectively to parents.

Affective Domain

Competencies	Does Not Meet the Best Practice Standard	Meets the Best Practice Standard
Explains the findings of the newborn examination clearly and concisely.	Provides an incoherent or inaccurate account of the newborn examination.	Provides a clear and concise account of the findings of the newborn examination.
Verifies understanding of oral communication relating to the examination of the newborn.	Fails to check or ensure understanding of oral communication.	Ensures understanding of oral communication.

Appendix 1
The Scottish Routine Examination of the Newborn Course
Candidate Information

Introduction

Welcome to the Scottish Routine Examination of the Newborn Course!

The aim of the course is provide participants with the knowledge and skills to perform the routine examination of the newborn.

By undertaking this course, you will be able to:

- Demonstrate a thorough understanding of the anatomy and physiology of the newborn.
- Demonstrate that you meet the best practice statement criteria in undertaking the routine examination of the newborn, including referral pathways.
- Acquire practical experience in the Routine Examination of the Newborn.

During the course, you will be supported by instructors who are experienced teachers and who are committed to the principles of the Maternity Development Programme - an evolving programme of courses designed to meet the needs of healthcare professionals involved in the delivery of maternity care. You will also be allocated a locally based clinical supervisor and assessor.

The Scottish Routine Examination of the Newborn courses take place throughout Scotland. All the courses and instructors are approved by the Scottish Multi-Professional Maternity Development Group (SMMDG).

The course consists of three parts:

Part I - Guided study of the course handbook and a formative multiple choice question (MCQ) examination.

Part II - Three days of taught input assessed summatively by MCQ examination. This part must be completed successfully before progressing to the final part of the course.

Part III - Clinical experience in which you undertake supervised practice in the routine examination of the newborn. You will normally be expected to complete this part of the course within 6 months of completion of Part II. Successful completion of the course means that you will receive a certificate and will have the award recorded on the central index held by SMMDG.

Even though the course includes both a theoretical test of knowledge and assessment of examination skills, it does not guarantee ongoing competence in the routine examination of the newborn. This can only be assessed by senior staff in the clinical environments in which candidates work.

Course Reading List

Essential Reading

Course Handbook: Baston H and Durward H (2001). Examination of the Newborn: A Practical Guide. London: Routledge.

Best Practice Statement on the Routine Examination of the Newborn.

Recommended Reading

Jones DA (1998). Hip Screening in the Newborn. A Practical Guide. Oxford: Butterworth Heinemann.

Tappero EP and Honeyfield ME eds (1993). Physical Assessment of the Newborn: A Comprehensive Approach to the Art of Physical Examination. California, USA: NICU Ink Book.

Wren C, Richmond S and Donaldson L (1999). Presentation of Congenital Heart Disease in Infancy: Implications for Routine Examination. *Archives of Disease in Childhood: Fetal & Neonatal Edition.* ; 80(1): F49-F53.

Appendix 2

What Should be Considered and Examined during the Routine Examination of the Newborn?

1. Definition

The routine examination is that examination undertaken usually between 6 and 24 hours of life (but certainly before 72 hours) of a baby, who is thought to be well, without significant problems, and being cared for in a postnatal ward or at home. Like any screening process it is more effective if preceded by the taking of a good history.

2. 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 deafness or developmental dysphasia of the hips may indicate specific testing of the new baby. Similarly a family history of recent exposure to active tuberculosis should raise the question of BCG immunisation for the baby. If possible any potential referrals should be discussed, and agreed beforehand with the parents and those who will be involved in the baby's care after delivery.

3. Problems Arising in the Current Pregnancy

Issues may have arisen during the pregnancy, which require special thought being given to the baby, eg 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. Review the baby's weight, length and head circumference, and record them on a centile chart to ensure there are no gestational or nutritional discrepancies.

4. 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 how soon after delivery should a baby go home who was born following prolonged rupture of membranes, history of maternal Group B Streptococci or maternal pyrexia in labour.

Appropriate plans should be made before delivery in response to any anticipated risk factors and these communicated to those responsible for the care of the baby.

5. Items to be Considered if the Family Goes Home before the Routine Examination Can be Performed or before the Midwife Leaves a Family following a Home Birth

The following should be included in the initial examination:

- Ascertain the family's concerns and give them the chance to discuss them.
- Review the baby's weight, length and head circumference and compare with known dates to ensure no gestational or nutritional discrepancies.
- Observe if the baby is able to latch on the breast or suck a bottle, if being artificially fed, and mum is confident handling her baby to feed.
- Consider whether the baby is well enough to be managed at home.
- Consider any specific known risks in the baby's home.
- Ensure that any appropriate urgent interventions for the baby have been completed or are planned (eg administration of Hepatitis B immunoglobulin and vaccine to the baby).
- Ensure arrangements are in place for the routine examination of the baby to be completed.
- Ensure that the parents know how to assess their baby's general condition and to contact a midwife or doctor if required.

6. Performing the Routine Examination

- The examination is completed with regard to prevention of cross-infection.
- Observations 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.

- 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.

Partially undress the baby to complete the remainder of the examination.

- Cardiovascular system - this includes colour, heart rate, rhythm and femoral pulse volume as well as listening to the heart for a murmur. Baston and Durward (2001) 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. Absence of a murmur does not however guarantee there is no cardiac anomaly.
- Respiratory effort can be assessed simultaneously with the cardiovascular assessment and listening to air entry.
- Abdomen - colour, shape, and palpate to identify any organomegaly. The condition of the umbilical cord can be included at this time.
- Genitalia and Anus - patency and completeness are examined.
- The femoral pulses can be palpated at this time if not already done.
- Spine - with baby prone inspect for completeness of bony structures and skin.
- Skin - while examining other aspects of the baby any skin lesions should be identified and discussed with parents.

- 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 done towards the end of the procedure, but hip instability is best felt when the baby is least disturbed. The proportions and symmetry of the limbs and skin folds are examined before checking hip stability. It is important to view the skin creases from the posterior aspect of the thigh, and to look for any generalised skeletal skew.
- The baby's hips are tested using both the Barlow test and Ortolani's manoeuvres. The baby must be on a firm, flat surface, preferably a trolley with lockable wheels. The baby should be warm, comfortable and relaxed. The baby's emotional state and position can influence the accuracy of the hip examination, therefore, in those few babies who are upset, the hips should be examined at a later time.
- Cry – noting aspects of the baby's cry can indicate possible underlying conditions which require investigation and or treatment.

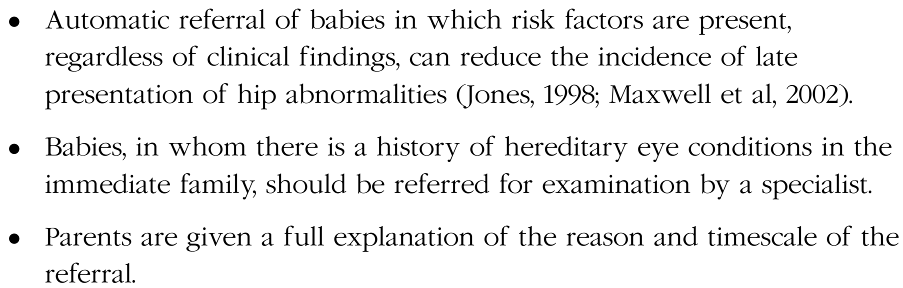
On completing the examination the baby is re-dressed and offered to the parents for a cuddle, or left comfortable in the cot while the examiner completes the documentation.

7. Communication and Documentation

- Ensure that the findings of the examination are appropriately recorded.
- Confirm the findings in discussion with the parents.
- Ensure those involved in providing future health care to the family, eg hospital and community midwives and GPs, receive the relevant information relating to the baby.

8. 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 local policies on referral routes for all potential problems identified from the routine examination of the newborn.
- Ideally this is directly to paediatric services 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 (Jones, 1998; Maxwell et al, 2002).
- 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.

9. Neonatal Screening

- Screening for Congenital Hypothyroidism, Phenylketonuria and Cystic Fibrosis, and the Universal Neonatal Hearing Screening, is performed 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 (Health Education Board for Scotland, 2002).
- The professional conducting the routine examination does not have to gain consent for the above tests at this time.

Appendix 3

References for the Routine Examination of the Newborn Best Practice Statement

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Our Commitment

Our work will be undertaken in line with the following values:

- **patient and public focus**
  - ~ promoting a patient-focused NHS that is responsive to the views of the public
- **independence**
  - ~ reaching our own conclusions and communicating what we find
- **partnership**
  - ~ involving patients, carers and the public in all parts of our work
  - ~ working with and supporting NHS staff in improving quality
  - ~ collaborating with other organisations such as public bodies, voluntary organisations and manufacturers to avoid duplication of effort
- **evidence-based**
  - ~ basing conclusions and recommendations on the best evidence available
- **openness and transparency**
  - ~ promoting understanding of our work
  - ~ explaining the rationale for our recommendations and conclusions
  - ~ communicating in language and formats that are easily accessible
- **quality assurance**
  - ~ aiming to focus our work on areas where significant improvements can be made
  - ~ ensuring that our work is subject to internal and external quality assurance and evaluation
- **professionalism**
  - ~ promoting excellence individually and as teams and ensuring value for money in the use of public resources (human and financial)
- **sensitivity**
  - ~ recognising the needs, opinions and beliefs of individuals and organisations and respecting and encouraging diversity

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- Electronic
- Audio cassette
- Large print

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