Palate examination: Identification of cleft palate in the newborn and infant

Best practice guide

November 2025



British Association of Perinatal Medicine
Cleft Lip and Palate Association
Royal College of General Practitioners
Royal College of Midwives
Royal College of Paediatrics and Child Health
The Craniofacial Society of Great Britain and Ireland
The Cleft Registry and Audit NEtwork

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Royal College of Paediatrics and Child Health
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Newborn with cleft of soft palate extending into the hard palate.









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Stakeholder organisations

Bliss for babies born premature or sick

British Society of Paediatric Dentistry (BSPD)

British Association for Paediatric Otorhinolaryngology (BAPO)

British Association Perinatal Medicine (BAPM)

British Paediatric Respiratory Society (BPRS)

CLAPA (Cleft Lip and Palate Association)

Cleft Care Scotland (CCS)

Community Practitioners' and Health Visitors' Association (CPHVA)

CRANE (The Cleft Registry and Audit NEtwork)

Craniofacial Society of Great Britain and Ireland (CFSGBI)

NHS England

Royal College of General Practitioners (RCGP)

Royal College of Nursing (RCN)

Royal College of Midwifery (RCM)

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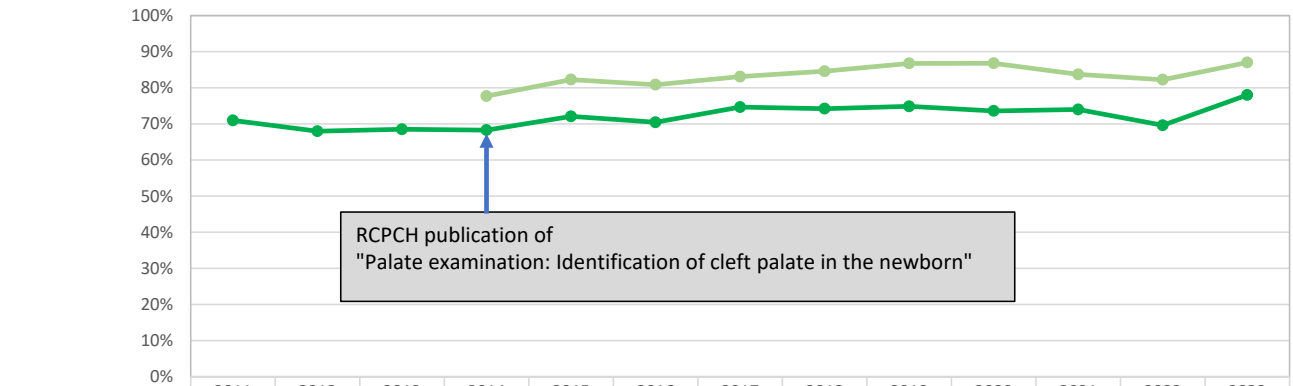
1. Introduction

A cleft palate occurs when the roof of the mouth has not joined completely. Delay in detection of a cleft palate may adversely affect short term weight gain, development and timely medical and surgical management. Delay in diagnosis can impact significantly on parents, leading to anger and disappointment with health care professionals.[1] Litigation brought for delayed detection of cleft palate incurs considerable cost to the National Health Service.[2]

There is strong circumstantial evidence in the United Kingdom for a history of inadequate examination of the newborn mouth to detect cleft palate.[3] This manifests as a delay in detection after the first Newborn and Infant Physical Examination (NIPE) has taken place. Before the 2014 publication of the RCPCH Best Practice Guideline (BPG) the prevalence of delayed detection of cleft palate beyond the first 24 hours' of age was 30%, a figure which had not changed significantly over the past 10 year period.[3, 4, 5, 6] Of this 30%; 12% were delayed more than a week, 7% were in infants under three months of age, 3% under a year old and 2% over one year.[3] Other UK professionals reported their concerns about delayed detection in conference proceedings.[7, 8] Delayed detection is not confined to UK practice. [9, 10] In one study approximately 50% of Dutch infants with isolated cleft palate were not detected within the national standard examination time period using palpation, and were identified later by visual inspection.[11]

Since these reports the standard of timing for the NIPE in the UK has changed from within 24hrs of birth to within 72 hours.[12] Data collected by the Cleft Registry & Audit NEtwork (CRANE) [13] reflects this amendment and, since the introduction of the BPG, detection rates within both timeframes have been reported. In 2014, when the BPG was published, CRANE data showed that the rates of diagnosis before or within 24 hours and 72 hours of birth were 68% and 75%, respectively.[14] By comparison in 2023 the rates of diagnosis before or within 24 hours and 72 hours of birth were 78% and 87%, respectively (Figure 1).[15]

Between 2014 and 2023, the odds of detecting a cleft palate within 24 hours and 72 hours of birth increased with each increasing year of birth (24-hour: OR 1.03, 95% confidence interval (CI) 1.00 to 1.05, p=0.0363; 72-hour: OR 1.05, 95% CI 1.02 to 1.08, p=0.0034).



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<24hrs of birth %	71%	68%	69%	68%	72%	70%	75%	74%	75%	74%	74%	70%	78%
<72hrs of birth %				78%	82%	81%	83%	85%	87%	87%	84%	82%	87%

Figure 1. Timely diagnosis of cleft palate without cleft lip (excludes submucous cleft palate).

CRANE has also explored detection rates by extent of the cleft affecting the palate and found that significant differences exist. Over the last 10 years (2014-2023), 65% of smaller (incomplete) clefts of the soft palate alone were diagnosed before or within 72 hours of birth, while the corresponding rate for larger (complete) clefts of both the soft and hard palate was 91% ($p<0.001$).[16] Figure 2 shows the trend for the incomplete soft palate clefts. The graphs demonstrate application of the BPG as an initiative delivering an effective outcome, highlighted by a doubling of the rate of detection in the smallest, and incomplete clefts in 2014-21. The fluctuating performance in 2022-24 may reflect the unprecedented pressures on the NHS at the time.

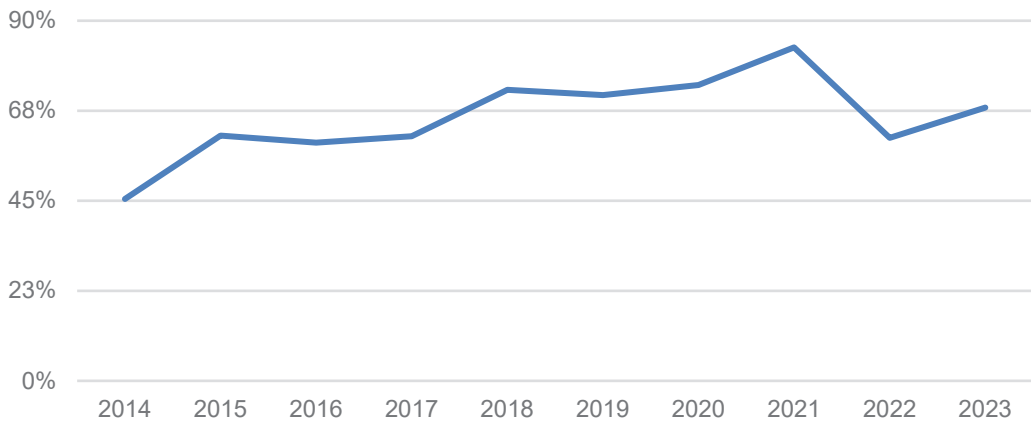


Figure 2. Percentage of incomplete clefts of the soft palate detected within 72 hours of birth by year, since introduction of 2014 RCPCH recommendations.

1.1 Aim

This guide provides recommendations to health care professionals for optimal examination of the palate to aid early detection of a cleft palate. The recommendations apply to the Newborn and Infant Physical Examination (NIPE), when performed within 72hrs of birth and at 6-8 weeks, and equally to examination of the palate outside of these specific times when an infant is seen by a healthcare professional.

1.2 Target audience and health care setting

Healthcare professionals in primary and secondary care, including those performing the NIPE or examining an infant as part of an assessment of health:

- NHS hospital trusts; specifically postnatal wards, neonatal units (including Neonatal Intensive Care Units, Local Neonatal Units, and Special Care Units), free standing midwifery units, (Children's) Emergency departments, paediatric wards and assessment units
- Primary care including general practice and dental services
- Outside of healthcare settings e.g. home births
- Health visitors.

Parents and carers of babies and infants diagnosed with a cleft palate.

1.3 Target population

- Babies examined as part of the Newborn and Infant Physical Examination (NIPE newborn screening), within 72 hours of birth, in hospital or at home
- Babies on a neonatal unit/other hospital setting examined later than 72hrs because they are born prematurely (too young' for a NIPE, defined as born before 34 weeks) or are sick (too ill' for a NIPE): definitions according to the NIPE screening programme handbook)[17]
- Babies examined routinely between 6 and 8 weeks as part of the Newborn and Infant Physical Examination (NIPE infant screening) in primary care [new 2025]
- Infants whose palate is examined at any time as part of an assessment by a healthcare professional [new 2025]

1.4 Guidance limitations

This guide provides advice on the optimal method for examination of the palate to detect a cleft palate in newborns and infants. While the guide aims to help healthcare professionals in their everyday work it does not replace clinical knowledge and expertise.

1.5 Development of the guidance

The recommendations in this guide have been developed following a systematic review of published literature. The RCPCH standards for development of clinical guidelines in paediatrics and child health were followed to ensure a robust guideline development process and formulation of recommendations.[18]

No studies answering the clinical questions were identified, therefore in the absence of new evidence the recommendations remain unchanged from the original published in 2014 which were developed using a Delphi consensus method. Details of the Delphi method are detailed in Appendix 3.

Members of the guideline development group including a representative from CLAPA (Cleft Lip & Palate Association), Clinical Nurse Specialists from NHS Cleft Services and a parent representative reviewed the original Patient Information Leaflet and concluded that this was no longer required as the method of examining the palate is now considered a standard of practice. The group reviewed patient information revealed from a search of the literature. The resources considered most accurate and relevant for parents and healthcare professionals are included in section 3.3.

The guide has been subject to stakeholder consultation. Feedback and amendments can be viewed on request.

1.6 Method

Full details of the search strategy can be found in the methodology document in Appendix 1.

1.7 Update of the guidance and audit

The BPG will be reviewed every three years after publication to assess whether all or part of the guide requires updating. The update will include a literature review and stakeholder consultation. The Cleft Palate Guideline Development Group will use the findings of 'age at detection of a cleft palate' recorded in the CRANE annual reports to audit the impact of the recommendations.[19]

2. Recommendations

1. Healthcare professionals should examine an infant's hard and soft palate as part of the systematic examination of the newborn undertaken at the same time as the Newborn and Infant Physical Examination (NIPE) screening and record this under the local data in the SMaRT4 NIPE (S4N) live system or General Practitioner IT system.
2. Examination of an infant's palate should be carried out by visual inspection.
3. A torch and method of depressing the tongue should be used to visualise the whole palate.
4. Parents should be informed if the whole palate (including the full length of the soft palate) has not been visualised during the systematic physical examination of the newborn (undertaken at the same time as the NIPE screening).
5. If the whole palate is not able to be visually inspected at first attempt then a further attempt at visual examination should be made within 24 hours.
6. Trusts should provide training on the correct method of visual inspection of the palate to all healthcare professionals required to carry out the systematic physical examination of the newborn (performed at the same time as the NIPE screening).

This revision makes a minor change to recommendation 1 to include SMaRT4 NIPE (S4N), a Public Health England live system which supports the recording and managing of each baby's NIPE screening record in hospital, and GP IT systems used in primary care.

For full details on the rationale behind each recommendation see Appendix 2.

3. Guideline implementation

The BPG will be shared with stakeholders with the intention that it will be published on their websites and disseminated to members.

We recommend that this guidance is embedded in practice as the gold standard method for examination of the palate in newborns and infants (and young children where the method is deemed suitable). This can be achieved through education and training of all healthcare professionals involved in performing the Newborn and Infant Physical Examination (NIPE) or otherwise involved in examining this population of patients.

We recommend that training and education in NHS Trusts is covered by NIPE Leads, Medical Education Leads and Practice Development Midwives; in Primary Care by General Practice Trainers, Health Visitor Trainers; Dental undergraduate and Speech and Language Therapy training programmes.

The RCPCH continues to develop resources to accompany this guide to aid the implementation of the recommendations and improve early detection of cleft palate. These can be accessed on the RCPCH website at Cleft Palate: Examination in the Newborn – RCPCH Learning and RCPCH Micro e-Learning Module: Detecting cleft palate early.

3.1 Resource implications

Healthcare professionals in primary and secondary care who perform the NIPE, or examine an infant as part of an assessment of health, should be provided with the relevant equipment (torch and tongue depressor) to examine the palate, and be trained in examination of the palate according to the recommendations in this guide. This is not expected to have a substantial impact on local resources.

3.2 Educational resources available

- RCPCH Micro e-Learning Module: Detecting cleft palate early. https://learning.rcpch.ac.uk/bitesize-learning/micro-elearning-modules-home/detecting-cleft-palate-early/
- Marrbel models: life-size silicone models of normal and cleft palates (marrbelmodels@gmail.com)
- Cleft Palate: Examination in the Newborn – RCPCH Learning.https://learning.rcpch.ac.uk/courses/cleft-palate-examination-in-the-newborn/
- Craniofacial Society national cleft palate identification poster https://craniofacialsociety.co.uk/professionals/clinical.aspx
- Annual CRANE reports https://www.crane-database.org.uk/reports/

3.3 Parent information

Healthcare professionals are encouraged to use the following national resources as first line information for parents and refer infants immediately to their local Cleft Services Team:

- CLAPA (Cleft Lip and Palate Association) https://www.clapa.com/
- NHS Health A to Z https://www.nhs.uk/conditions/cleft-lip-and-palate/

Additional perspectives in videos and stories from parents and adult patients are recommended for families at a later stage:

- Changing Faces https://www.changingfaces.org.uk/
- Health talk https://healthtalk.org/introduction/cleft-lip-and-palate/

Cleft services may have their own patient information leaflets which are offered to families by the Clinical Nurse Specialists at the first assessment.

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18. RCPCH (2020). Standards for the development of clinical guidelines in paediatrics and child health, 5th edition.
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Appendix 1. Guideline methodology

1. Developing the clinical questions

The Guideline Development Group (GDG) reviewed the original clinical questions and agreed these remained relevant. One additional question was proposed to guide a review of the parent information leaflet.

1. What is the most reliable method of examining the palate during the newborn examination in order to detect a cleft palate?
2. Is visual inspection compared to palpation/digital examination a more reliable method of detecting a cleft palate during the newborn examination?
3. Does visual inspection compared to palpation, performed during the newborn examination, reduce the incidence of delayed/missed diagnosis of cleft palate?
4. What patient information and support are available to families of babies with cleft palate? [new 2025].

2. Identifying the evidence

Searches were conducted in MEDLINE, Embase, Emcare, British Nursing Index, CINAHL, NICE and the Cochrane library. Additional references were sought in the UpToDate and BMJ Best Practice cleft palate topic pages, as well as within the bibliographies of the articles retrieved from the databases. Searches for patient information were extended to include TRIPro and Google Scholar.

Searching was limited to human studies, English language and by year from 2014 to 2025, and did not include hand searching, searching conference abstracts and unpublished scientific literature ('grey literature').

Searches were re-executed within 8 weeks of the stakeholder consultation to provide up-to-date information. The process was completed by 31.01.2025 and no publications after this date were included.

2.1 Search strategy

Embase

1	cleft palate.mp. or exp cleft palate/	28438
2	(cleft and palate).mp.	34342
3	infant newborn.mp. or exp newborn/	607436
4	neonat*.mp.	434115
5	newborn.mp. or newborn/	729204
6	physical examination.mp. or exp physical examination/	363124
7	(digital adj1 examination).mp.	1163
8	(visual adj1 examination).mp.	2993
9	visuali?ation.mp.	156148
10	(inspection or detection or palpation or diagnosis or assessment).mp.	10253296
11	1 or 2	34342
12	3 or 4 or 5	871393

13	6 or 7 or 8 or 9 or 10	10442947
14	11 and 12 and 13	2156
15	limit 14 to (human and english language and yr="2014 - 2025" and infant <to one year>)	235
16	limit 15 to (books or conference abstract or editorial or letter or note)	55
17	15 not 16	180

Emcare

1	cleft palate.mp. or exp cleft palate/	5613
2	(cleft and palate).mp.	7887
3	infant newborn.mp. or exp newborn/	73160
4	neonat*.mp.	105754
5	newborn.mp. or newborn/	110460
6	physical examination.mp. or exp physical examination/	74871
7	(digital adj1 examination).mp.	215
8	(visual adj1 examination).mp.	746
9	visuali?ation.mp.	34933
10	(inspection or detection or palpation or diagnosis or assessment).mp.	1681389
11	1 or 2	7887
12	3 or 4 or 5	160759
13	6 or 7 or 8 or 9 or 10	1741692
14	11 and 12 and 13	286
15	limit 14 to (human and english language and yr="2014- 2025" and infant <to one year>)	22

Medline

1	exp Cleft Palate/	3985
2	cleft and palate.mp.	7887
3	exp Infant, Newborn/	72837
4	infant newborn.mp.	534
5	neonat*.mp.	105754
6	newborn*.mp.	117063
7	exp Physical Examination/	64480
8	physical examination*.mp.	67500
9	(digital adj1 examination).mp.	215
10	(visual adj1 examination).mp.	746
11	visuali?ation.mp.	34933
12	(inspection* or detect* or palpation* or diagnos* or assessment*).mp.	2241136
13	1 or 2	7887
14	3 or 4 or 5 or 6	164679
15	7 or 8 or 9 or 10 or 11 or 12	2290332
16	13 and 14 and 15	362
17	limit 16 to (english language and humans and yr="2014 - 2025")	126

British Nursing Index

S1	((((Exp NEONATES/) OR (exp INFANTS) AND ((visual AND inspection) TIAB) OR (visuali?ation TIAB) OR ((physical AND examination) TIAB) OR (inspection TIAB) OR (detection TIAB) OR (palpation TIAB) OR ((digital AND examination) TIAB) AND (exp CLEFT PALATE/)) AND la.exact("English")) AND la.exact("English")) AND la.exact("English") AND pd(20140601-20231109)	138
S2	Exp NEONATES/) OR (exp INFANTS) AND pd(20140601-20231109)	388
S3	visual AND inspection) TIAB OR (visuali?ation TIAB) OR (physical AND examination) TIAB OR (inspection TIAB) OR (detection TIAB) OR (palpation TIAB) OR (digital AND examination) TIAB	31
S4	(exp CLEFT PALATE/) AND la.exact("English") AND pd(20140601-20231109)	9
S5	[S1] AND [S4]	3
S6	[S2] AND [S4]	8

CINAHL

S1	(MM “Cleft Palate”)	1908
S2	(MM “Physical Examination”)	1869
S3	visual and inspection	1312
S4	digital AND examination	2089
S5	detection	74747
S6	inspection	5010
S7	S2 OR S3 OR S4 OR S5 OR S6	82646
S8	S1 AND S7	36

Searches for patient information were conducted in the following sites:

BMJ Best Practice and UpToDate: “cleft palate” and restricting to patient information leaflets.
TripPro medical database: “cleft palate” and restricting to patient information leaflets.
Google Scholar advanced search using all the words cleft patient information leaflets NHS and the exact phrase “cleft palate” and restricting the results to the UK and English language.

3. Reviewing and synthesising the evidence

Two members of the GDG screened the list of retrieved citations to identify potential studies according to the inclusion and exclusion criteria. No studies answering the clinical questions were identified.

4. Delphi process and recommendations

For the 2014 best practice guide there was no substantial evidence in existence and so a two round Delphi consensus method was used to derive recommendations.

The Delphi consensus method involved the participation of 16 healthcare professionals from specialities including midwives, nurses, cleft surgeons and neonatologists.

Participants rated a series of statements developed by the working group using a 1-9 scale (1 being strongly disagree, 9 strongly agree). Consensus was defined as 75% of rating falling in the 1-3 or 7-9 categories. Results and comments from each round were discussed by the working group and final recommendations were made according to predetermined criteria.

A total of 13 panellists participated in forming 6 recommendations. These statements were used to form the recommendations in the guide and were given a level of evidence according to the criteria developed by SIGN.1 Full details of the consensus process are presented in Appendix 3.

In this revision the literature search did not identify new evidence to answer the clinical questions pertaining to examination of the palate. The GDG agreed that the recommendations formulated by means of Delphi process and recorded in the 2014 Best Practice Guide remain relevant and valid.

5. Guideline consultation details

A four week consultation took place between 25 February and 25 March 2025 during which time stakeholders were given the opportunity to comment on the best practice guide. Comments were collated and presented to the GDG for discussion.

6. Parent, carer and patient participation

The GDG included two parents of a child with a cleft palate, a healthcare professional with a cleft palate and experience as a service user, and a representative from a UK charity supporting people born with a cleft and their families.

7. Developers and conflicts of interest

The GDG carried out the critical appraisal and data extraction of publications where necessary, and informed the scope and guidance. Specialists with expertise in literature searching conducted the systematic searches. The RCPCH Research and Evidence team provided methodological advice and support to the working group. The guide was not funded but was developed through time and efforts volunteered from the working group. The GDG met on four occasions during the development of the guideline. The group declared all conflicts of interest which were recorded.

8. Editorial independence

The best practice guide was developed without external funding. Members of the GDG did not have any conflicts of interest.

Appendix 2: Recommendations and rationale

Recommendation 1: Healthcare professionals should examine a baby's hard and soft palate as part of the full newborn physical examination and record this in the child health record (Grade D).

Delphi statements

- Examination of the palate should take place during the newborn examination. Consensus achieved: 85% strongly agree (round 1).
- The inspection of the hard and soft palate by visualisation is an integral part of the newborn full physical examination and should be recorded as part of the child health record; training in palatal inspection should be provided alongside training in the conduct of the examination. Consensus achieved: 92% strongly agree (round 2).

Delphi evidence summary and translation

There was a high level of consensus with both these statements. The working group felt that the high consensus for palate examination occurring in the newborn examination was important and this recommendation should focus on palate examination as a component of the newborn examination. The group felt it was important that this was appropriately recorded in the child health record. Training on how to carry out cleft palate examination was felt to be an issue that needed to be considered separately.

Recommendation 2: Examination of the baby's palate should be carried out by visual inspection (Grade: D).

Delphi statements

- Palate examination should be carried out by palpation alone. Consensus achieved: 80% strongly disagree (round 1).
- Palate examination should be carried out by both palpation and visual inspection. Consensus not achieved: 62% strongly agree (round 2).
- In cases where visual inspection is incomplete (so the whole of the palate is not seen) palpation should be carried out and the result be relied upon to determine presence or absence of a cleft. Consensus not achieved: 69% strongly disagree (round 2).
- Digital examination may improve diagnostic accuracy once a cleft has been detected visually Consensus not achieved: 46% neither agree nor disagree and 46% strongly disagree (round 2).
- Visual inspection of the palate correctly performed is more likely to detect clefts of the palate, excluding submucous clefts, than palpation/digital examination alone. Consensus achieved: 77% strongly agree (round 2).

Delphi evidence summary and translation

The Delphi panel reached a high consensus that palpation should not be performed alone, however

the use of visual inspection along with palpation or digital examination did not reach a consensus between the Delphi rounds. The working group considered the Delphi consensus rates and comments made by the Delphi participants and found the Delphi panel had concerns with the use of palpation and digital inspection methods. Overall the working group felt it was clear from Delphi responses that visual inspection was the preferred method for examining the baby's palate.

Recommendation 3: A torch and method of depressing the tongue should be used to visualise the whole palate (Grade: D).

Delphi statements

- A torch and method of depressing the tongue are required to consistently visualise the whole palate. Consensus achieved: 80% strongly agree (round 1).

Delphi evidence summary and translation

The Delphi panel reached a high level of consensus on both statements. The working group felt that the use of a torch and tongue depressor was an effective method for visualising the cleft palate.

Recommendation 4: Parents should be informed if the whole palate (including the full length of the soft palate) has not been visualised during the newborn examination (Grade: D).

Delphi statements

- Parents should be informed if the whole palate (including the full length of the soft palate) could not be seen. Consensus achieved: 92% strongly agree (round 2).

Delphi evidence summary and translation

The Delphi panel reached a high level of consensus and the working group agreed that this was an appropriate recommendation.

Recommendation 5: If the whole palate is not able to be visually inspected at first attempt then a further attempt at visual examination should be made within 24 hours. If visualisation is not achieved at the 2nd inspection, a 3rd attempt at visual examination should be made with consideration of referral to paediatric services (Grade: D).

Delphi statements

- If the whole palate is not inspected at first attempt then a further attempt at visual inspection should be made within 24 hours. Consensus achieved: 77% strongly agree (round 1).
- Healthcare professionals should delay discharging the baby home until the whole palate has been inspected, or arrange to return for review as soon as practicable. Consensus not achieved: 69% strongly agree (round 2).

Delphi evidence summary and translation

The Delphi panel were unable to reach consensus on this statement, however the working group considered this statement and felt that the Delphi panel would have reached consensus if the statement did not use the term “arrange to return for review”. The group felt this statement gave the impression that parents would need to return the baby to the unit if a full examination was not possible. The group considered that although a further review was necessary this could occur in a community setting without the need to return the baby to hospital. The group agreed to rephrase the statement to emphasise a further review is needed if a full visual examination of the palate was not able to be completed.

Recommendation 6: Trusts should provide training on the correct method of visual inspection of the palate to all healthcare professionals required to carry out the newborn examination (Grade: D).

Delphi statements

- The inspection of the hard and soft palate by visualisation is an integral part of the newborn full physical examination and should be recorded as part of the child health record; training in palatal inspection should be provided alongside training in the conduct of the examination. Consensus achieved: 92% strongly agree (round 2).

Delphi evidence summary and translation

The Delphi panel reached a high level of consensus on this statement and the working group felt that adequate training should be provided for healthcare professionals in palate examination and detection of cleft palate.

Appendix 3: Delphi Process (conducted in 2014)

In this revision the literature search did not identify new evidence to answer the clinical questions pertaining to examination of the palate. The GDG agreed that the recommendations formulated by means of Delphi process and recorded in the 2014 Best Practice Guide remain relevant and valid.

1. Rules of Delphi

All Delphi consensus methods must follow three rules:

- Anonymity of participants
- Statistical analysis of responses
- Iteration (allowing participants to change their views in subsequent round)

Beyond these rules Delphi processes can vary. The specifics of the process should be laid down from the start of the first round. For this Delphi process the specific rules were as follows:

Number of rounds	There will be 2 rounds
Definition of consensus	A nine-point Likert scale will be used for panellists to provide their responses to statements. Consensus agrees will be defined as 75% of panellists selecting 1, 2, 3 on the Likert scale. Consensus disagrees will be defined as 75% of panellists selecting 7, 8, 9 on the Likert scale
Panel size	The panel must be multidisciplinary and include at least two representatives from each speciality
Panel knowledge base	There will be no literature sent to participants as any evidence sent out could bias responses

2. Delphi panel

Name	Specialty	Round 1	Round 2
Helen Robson	Nursing	✓	✓
Karine Latter	Nursing	✓	✓
Anne Crawford	Nursing	✓	✓
Anne Lomax	Midwifery	✓	✓
Stephanie Michaelides	Midwifery	✓	✓
Belinda Ackerman	Midwifery	✓	✓
Helen Baston	Midwifery	✓	✓
Cathy Rogers	Midwifery	✓	✓
Felicity Mehendale	Cleft surgeon	✓	✓
Alistair Smyth	Cleft surgeon	✓	✓
Norma Timoney	Cleft surgeon	✓	✓
Bob Welch	Neonatologist	✓	✓
Peter Fowlie	Neonatologist	✓	✓

3. Instructions from Likert scale

Each participant received the same instructions for each round. Their responses were recorded on a Likert scale to allow statistical analysis.

So what do I have to do?

This is Round 2 of the Delphi process. You will need to complete the following questionnaire 30 May and 13 June. In total the questionnaire should take no longer than 5 minutes to complete.

How do I complete the questionnaire?

This questionnaire contains statements followed by a 9 point scale on which you can indicate your agreement with that statement.

For each statement, you must decide how much you agree with the statement by selecting the number that indicates your level of agreement.

1 = Strongly disagree - 9 = Strongly Agree

Following each statement and scale there is a comments box for you to include reasons for your rating and/or alternative wording.

What about confidentiality?

All results from the questionnaire will remain anonymous and other participants will have no access to your answers.

What now?

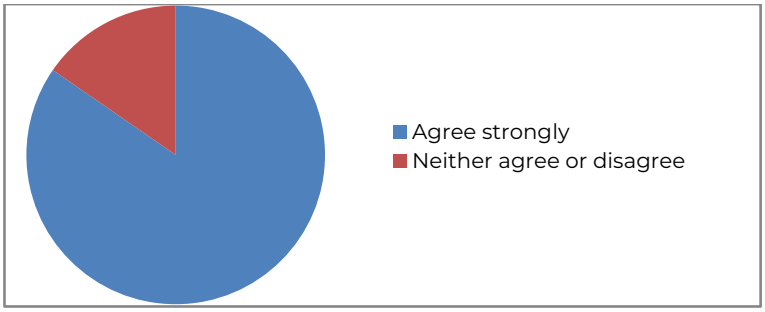
Please click on the button at the bottom of the page to get started and remember please do not consult colleagues before selecting your response.

4. Round one statements and results

The statements from round one are presented below along with a pie chart of participants responses and any comments made by the panel. The comments were used to rephrase any statements which had not reached consensus.

Please note comments from Delphi panellists have been spell checked for eligibility, however the content of the comments have not been changed.

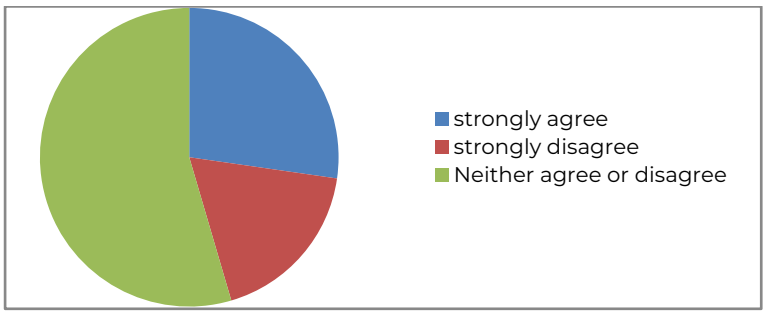
1. Examination of the palate should take place during the newborn examination



Consensus achieved: 85% strongly agree

Response	Comments
Strongly agree	Examination of the hard and soft palate should take place during the full examination of the newborn.
Strongly agree	With the addition of soft and hard palate.
Strongly agree	Is essential component of the NBE.
Strongly agree	Some babies are discharged within a few hours of birth and may appear to be feeding well but will usually struggle after 24 hour period. The palate then appears to be only palpated which means that many get missed for days, weeks and months causing feeding difficulties, weight loss and sometimes readmission to hospital.
Neither agree nor disagree	Word change: Examination of the full palate (hard and soft palate) should take place during the newborn examination. An intact palate or a cleft palate should be diagnosed at the earliest opportunity. Examination of the palate is more likely to be performed when part of a structured examination of the newborn. If it is not a requirement of the newborn examination then it is more likely to be overlooked or assumed that 'somebody else will do it'. Early diagnosis will allow early referral to cleft teams, facilitate appropriate oral feeding methods and allow early imparting of accurate information to parents. I would favour a protocol which requires the initial provisional diagnosis of cleft palate to be confirmed by another member of the medical team responsible for that child's care at the earliest opportunity. The provisional and subsequent confirmed diagnosis of cleft palate must be clearly documented in the records.
Neither agree nor disagree	Delay in diagnosis of soft palate clefts can lead to feeding difficulties, poor weight gain, and unnecessary parental worry.

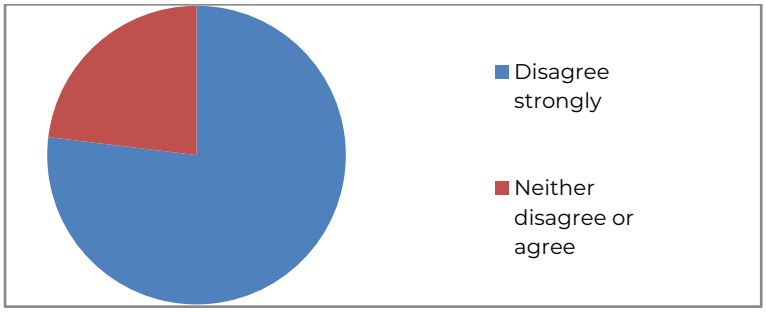
2. Palate examination should be carried out by visual inspection alone



Consensus not achieved

Response	Comments
Strongly agree	Visual inspection must be carried out to visualise the uvula.
Strongly agree	Only if carried out using a good pen torch and a tongue depressor, with assistance of a second person when necessary.
Neither agree nor disagree	It is not always possible to visualise the palate, although this is preferable.
Neither agree nor disagree	Visual is the gold standard but if a baby will not open mouth I have had to palpate but am aware this is not accurate and merely a guide.
Neither agree nor disagree	The issue here is not whether visual inspection is appropriate or not or a good diagnostic test or not but rather whether it can be done with a single person examining the baby. To double up and have two individuals per newborn examination is not practical in majority of settings and it may not be possible safe to inspect the palate properly with single examiner.
Neither agree nor disagree	Palpation is ok as long as it is done alongside a visual inspection as well.
Neither agree nor disagree	This only holds if a complete view of the palate is obtained and this can be difficult to achieve Word change: Examination of the full palate (hard and soft palate) should be carried out by visual inspection alone. Visual examination of the palate in a newborn with an adequate light source and including depression of the tongue to visualise the posterior palate is the most reliable and accurate method to diagnose the presence or otherwise of a cleft palate. Other methods of clinical examination such as palpation are much less reliable and contribute nothing further to the diagnosis of cleft palate which has been established by visual inspection.
Strongly disagree	Examination should be carried out by both visual inspection and palpation.

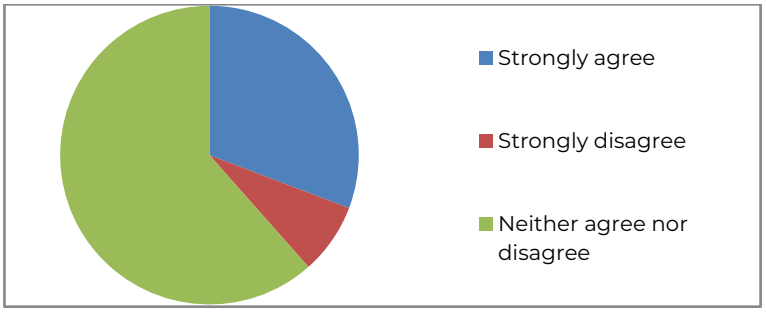
3. Palate examination should be carried out by palpation alone



Consensus achieved: 80% strongly disagree

Response	Comments
Strongly disagree	All the published evidence shows that small soft palate clefts and bifid uvulas can be missed if this method is used.
Strongly disagree	This method is unreliable. Incomplete cleft palates can be easily missed and even complete cleft palates undiagnosed by palpation as the nasal septum may be mistaken for an intact palate. There would be a consequent unsatisfactory and avoidable number of false negative and false positive diagnoses.
Strongly disagree	Clefts of the soft palate can be missed though this alone.
Strongly disagree	Very difficult to feel a soft palate cleft. Person carrying out the palpation doesn't always know what they are feeling. A very wide cleft could mean the examiner feels the nasal septum and thinks they are feeling the palate.
Strongly disagree	You would not detect a small cleft of the posterior soft palate with this method and rarely diagnose an SMCP. No, visualisation should be undertaken to identify cleft of the soft palate. However, palpation may be the only possibility if baby will not open mouth or doesn't 'gag' when palate palpated.
Strongly disagree	Palpating the palate often misses a cleft of the soft palate.

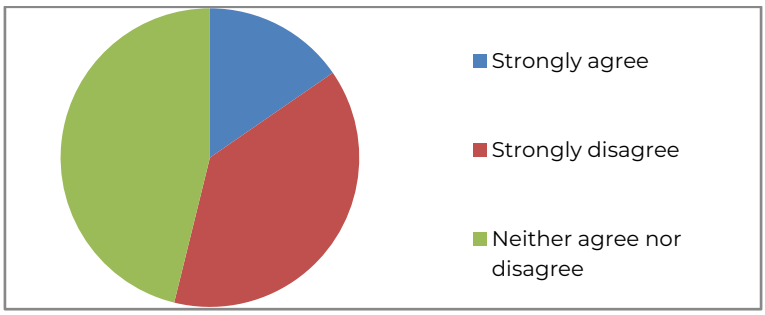
4. Palate examination should be carried out by both palpation and visual inspection



Consensus not achieved

Response	Comments
Strongly agree	Add: A tongue depressor should be utilised if the palate cannot be visualised.
Strongly agree	Only if carried out using a good pen torch and a tongue depressor, with assistance of a second person when necessary.
Strongly agree	Ideally.
Neither agree nor disagree	Palpation can be falsely reassuring since it cannot be relied upon to detect a soft palate cleft and a number of cases of clefts that extend into the hard palate have been missed on palpation.
Neither agree nor disagree	Visual remains the gold standard.
Neither agree nor disagree	The issue here is not whether visual inspection is appropriate or not or a good diagnostic test or not but rather whether it I can be done with a single person examining the baby. To double up and have two individuals per newborn examination is not practical in majority of settings and it may not be possible safe to inspect the palate properly with single examiner.
Neither agree nor disagree	Palpation may be unnecessary if there is a complete cleft of the lip and palate.
Neither agree nor disagree	Is palpation necessary when you can visualise the palate.
Strongly disagree	I would disagree with this statement as appropriate visual inspection alone by a competent clinician will diagnose all cleft palates. Palpation adds nothing further to the diagnosis. However, if the visual inspection is inadequate in the presence of cleft palate then an inexperienced clinician may be falsely reassured by palpation that no cleft palate is present as the reliability of palpation is poor.

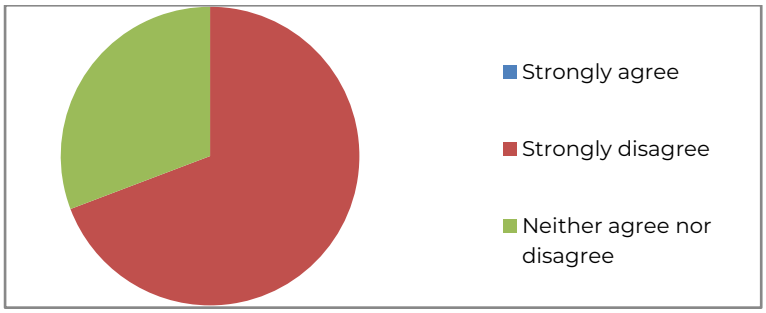
5. In cases where visual inspection is incomplete (so the whole of the palate is not seen) palpation should be carried out.



Consensus not achieved

Response	Comments
Strongly agree	Ideally, palpation may be necessary to facilitate this.
Strongly agree	Yes I have a baby that fits and grinds jaw palpation is the only way I could diagnose this.
Neither agree nor disagree	If the entire palate (hard and soft) could not be visualised, this should be documented along with a record of the findings and reason for inability to visualise the palate.
Neither agree nor disagree	Additionally, a further full examination should be performed prior to discharge home.
Neither agree nor disagree	The part the examiner may not see is the complete soft palate including the uvula. You will not be able to gain any more information by palpating the palate. Always better to be patient and visualise.
Neither agree nor disagree	Palpation should be performed, but the palate should be fully examined visually before a cleft can be ruled out. If necessary, the palate should be re-examined on another occasion or by another examiner. If these attempts still fail to yield a complete examination, the patient should be referred to the local cleft team.
	If sucking and feeding is poor and there is nasal regurgitation of milk then a further attempt to visualise the whole palate is necessary.
Strongly disagree	In cases where visual inspection is incomplete, a tongue depressor should be used.
Strongly disagree	Need to ensure staff are trained to ensure visualisation.
Strongly disagree	A complete visual inspection is imperative as you cannot feel to the very back of the palate.
Strongly disagree	See comments under item 4. Palpation is unreliable. Under these circumstances it must be recorded in the notes by the examining clinician that visual inspection of the whole of the palate was incomplete and that this is relayed to a more senior member of staff who should visually examine the whole palate.

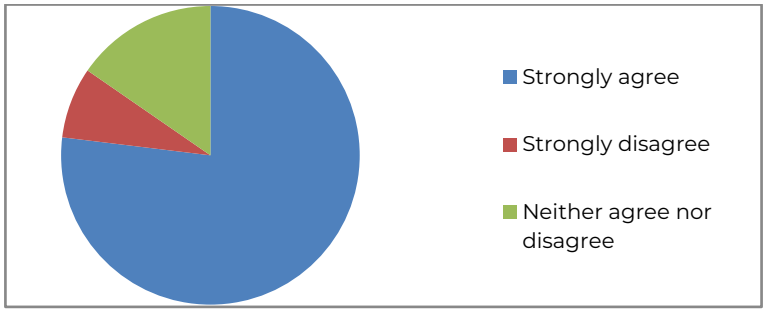
6. Palpation is of equal value to visual inspection in detecting a cleft



Consensus not achieved

Response	Comments
Neither agree nor disagree	Both important but visualisation in addition is best practice, especially in babies with a family history, exposure to teratogenic agents, suspected syndrome and/or feeding difficulties.
Neither agree nor disagree	I do not know any objective data on these aspects of examination as diagnostic "tests".
Disagree strongly	Palpation is not a substitute for visualisation of the palate. Both should be completed as part of the full examination of the newborn.
Disagree strongly	Visual inspection has a high reliability even by relatively inexperienced clinicians and can achieve 100% reliability when performed by experienced clinicians. Palpation methods have a low reliability and would be associated with an unacceptably high number of missed diagnoses. They are definitely not of equal value. Palpation either alone or in addition to visual inspection should be considered inappropriate and unnecessary for the diagnosis of cleft palate.
Disagree strongly	All the published evidence shows that small soft palate clefts and bifid uvulas can be missed if this method is used.

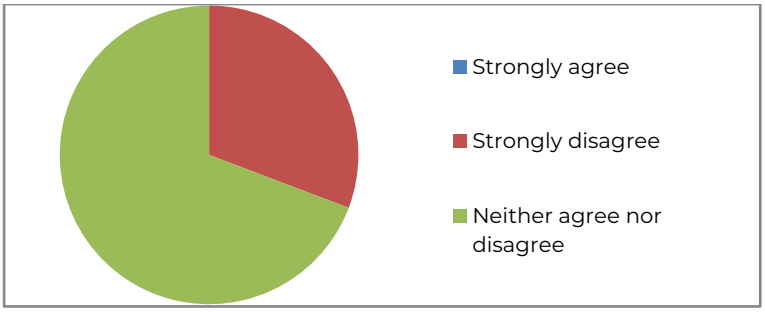
7. A torch and method of depressing the tongue are required to consistently visualise the whole palate



Consensus achieved: 80% strongly agree

Response	Comments
Strongly agree	A torch and method of depressing the tongue should be utilised to provide consistency to the examination of the hard and soft palate.
Strongly agree	In addition, the clinician examining the palate needs assistance from a colleague to hold the neonates head and ideally extend the neck, which makes visualisation of the palate easier.
Strongly agree	Yes it is a simple way to examine.
Strongly agree	Have surveyed the various methods and this is the only one that consistently works. An appropriate light source providing good illumination (such as a quality pen-torch, hand torch or head torch) and method of depressing the base of the tongue are required to consistently visualise the whole palate.
Strongly disagree	A good yawn is perfect.

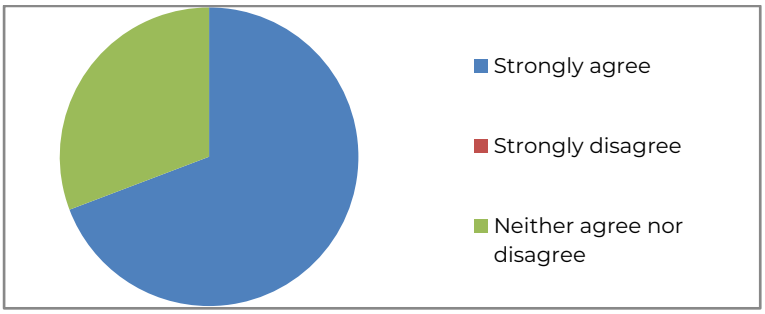
8. Digital examination should be carried out once a cleft palate has been detected



Consensus not achieved

Response	Comments
Neither agree nor disagree	Digital examination may be carried out once a cleft palate has been detected to locate breadth and depth of the cleft.
Neither agree nor disagree	May feel a notch in the hard palate where only a soft palate cleft is detected visually.
Neither agree nor disagree	Could be useful to assess for a tongue tie, movement of the tongue and assess strength of suck as part of a feeding assessment.
Strongly disagree	Once a cleft palate has been detected then digital examination provides no additional value to the diagnosis and is redundant and of low reliability.
Strongly disagree	There is no need if you can see it.
Strongly disagree	Digital examination may facilitate visualisation of soft palate cleft, but once this seen, no need to use digital means.

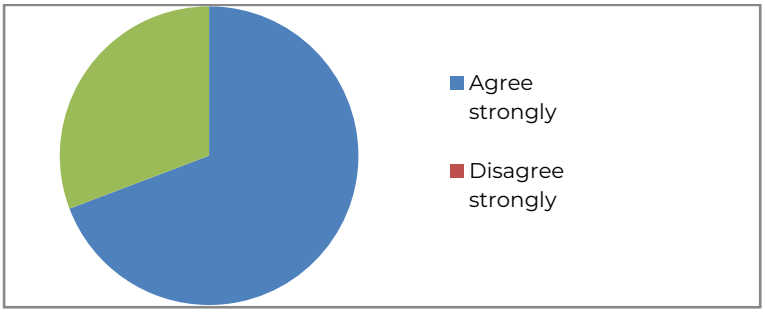
9. Visual inspection of the palate correctly performed is more likely to detect all clefts of the palate than palpation/digital examination alone



Consensus not achieved

Response	Comments
Strongly agree	Palpating a cleft accurately relies on a good knowledge of the anatomy of varying types of cleft and would be challenging for a non-cleft specialist.
Strongly agree	Absolutely. Incontestable.
Strongly agree	I do not know any data that can support/refute this.
Neither agree nor disagree	To allow for a smcp where it may not be possible to see the translucent layer of membrane but maybe possible feel for a hard palate notch.

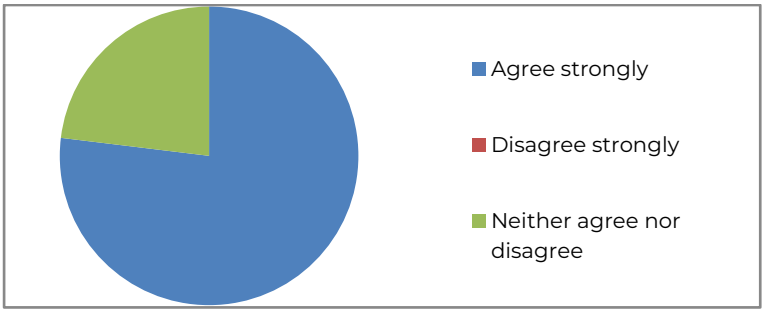
10. Parents should be informed if the whole palate (including the uvula) is not inspected



Consensus not achieved

Response	Comments
Strongly agree	Yes because they are aware of the need to check hearts, eyes etc. but unless have knowledge of cleft palate wouldn't even consider the value. Parents are upset when they see in the red book (PHCR) that palate is not circled as checked or at worst assessed as normal only weeks down the line to find out was a cleft palate and misdiagnosis has been made.
Strongly agree	They need to know this and why it is important.
Neither agree nor disagree	Parents should be informed if the whole palate (including the soft palate) is not inspected. Partial or complete separation of the uvula alone without other separation of the soft palate is unlikely to represent a diagnosis of overt cleft palate. Bifidity of the uvula alone without cleft palate is reported to affect up to 10% of the population. Visual inspection of the uvula can also be difficult for experienced clinicians using the appropriate method of visual examination. It would therefore be reasonable to conclude that if the hard and soft palate are intact on visual examination that no cleft palate is present even if the whole of the uvula is not visualised, despite repeated attempts. It would be reasonable and recommended to record in the patient records that the uvula was not visualised.

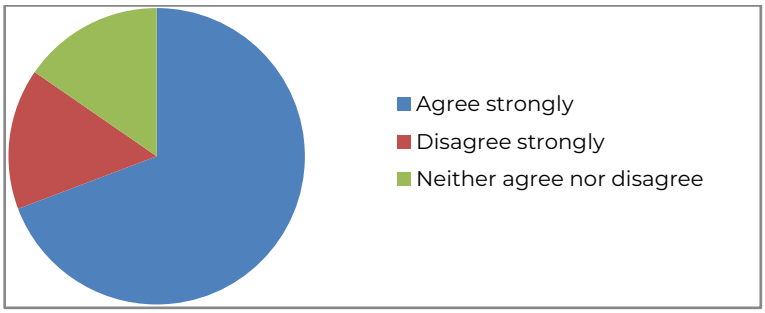
11. If the whole palate is not inspected at first attempt then a further attempt at visual inspection should be made within 24 hours



Consensus achieved: 77% strongly agree

Response	Comments
Agree strongly	In ideal circumstances where there is continuity of care, then the same carer can do this. However, in practice, this may not be possible. It should be documented what has/has not been seen so that the next carer has this information and can document if visualised later
Agree strongly	This depends on the added value of direct visualisation vs the practical drawbacks of multiple examinations
Agree strongly	In an ideal world probably yes, but if the baby is known to be feeding well within a reasonable time scale with no nasal regurgitation during feeds or other symptoms of a cleft palate then they are probably ok, but this is taking a risk.
Agree strongly	Yes, best practice and hopefully sooner than 24 hours. A second or third attempt is often successful. If despite this approach the whole palate is not adequately visualised, then the assistance of a more senior member of the team should be sought.

12. If the whole palate (including the uvula) is not inspected, healthcare professionals should recommend to parents that their baby is reviewed if there are feeding difficulties or nasal regurgitation during feeding occurs.



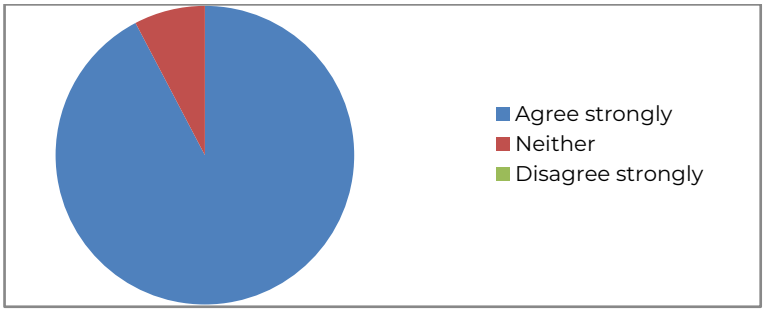
Consensus not achieved

Response	Comments
Strongly agree	Preferably with somebody senior who understands the importance of a complete visualisation.
Strongly agree	Definitely but some parents might not feel able to ask for help or speak to a healthcare professional. I have had parents who have tried only to be told that the symptoms are 'normal'. I even had one GP who refused to check the baby's mouth when the mother thought he had a cleft palate so I don't think this would help unless the health professional had reasonable knowledge of cleft palates.
Strongly agree	Yes, this would be an indication for further inspection.
Neither agree nor disagree	The parents should be alerted to these potential signs but further attempts to visualise the palate should be made.
Neither agree nor disagree	Again depends on the perceived added value of inspection vs palpation.
Strongly disagree	This approach could lead to an unnecessarily high number of parents seeking review as feeding difficulties and/or nasal regurgitation in the absence of cleft palate are not uncommon. This would cause inappropriate anxiety for parents due to unfounded concerns of cleft palate. Furthermore this recommendation could be used as a 'get-out clause' when visual examination of the palate has been clinically inadequate or indeed not even attempted.
Strongly disagree	Agree with statement 11.

5. Round two statements and results

The statements from round two are presented below along with a pie chart of participants responses any comments made by the panel.

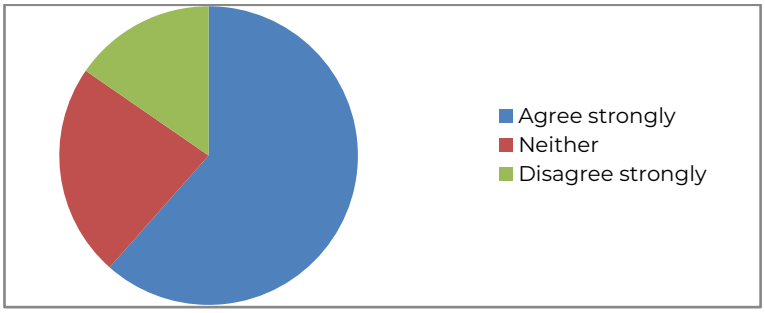
1. **The inspection of the hard and soft palate by visualisation is an integral part of the neonatal full physical examination and should be recorded as part of the child health record; training in palatal inspection should be provided alongside training in the conduct of the examination.**



Consensus achieved: 92% strongly agree

Response	Comments
Strongly agree	Training is currently provided as part of our NIPE module.
Strongly agree	To avoid cross infection to the baby is important to state that the wooden spatulas are sterilized in individual packs.
Neither agree nor disagree	It is the practicality of doing this as a sole practitioner that causes difficulty. If is often impossible to visualise palate without two people contributing to examination and there are rarely two clinicians doing this together in most settings. It is not appropriate to ask mother to hold a baby firmly in the way required in first few hours/day or so after birth.

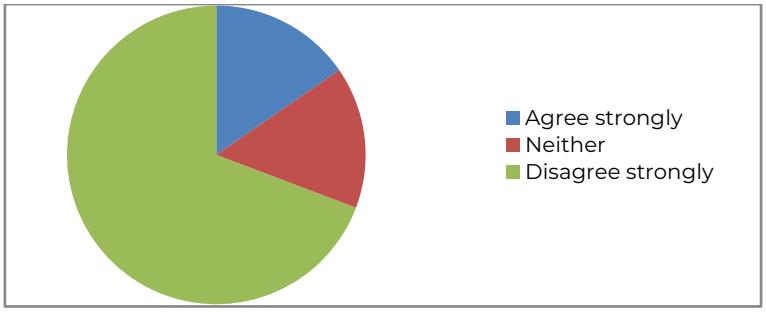
2. Palate examination should be carried out by both palpation and visual inspection



Consensus not achieved

Response	Comments
Strongly agree	This is what is currently recommended and taught.
Strongly agree	To ascertain the shape and other deviations of the gums and palate it is important to undertake both palpation and visualization. It is also important to ascertain the strength of the sucking and swallowing reflex and to ascertain whether or not the baby has a gag reflex which are also very important factors to ascertain prior to assessing the soft palate.
Strongly agree	Visual inspection is the most important aspect however and should be carried out with an appropriate light source, the tongue should be depressed and the uvula should be visualised.
Neither disagree nor agree	It is the practicality of doing this as a sole practitioner that causes difficulty. If is often impossible to visualise palate without two people contributing to examination and there are rarely two clinicians doing this together in most settings. It is not appropriated to ask mother to hold a baby firmly in the way required in first few hours/day or so after birth.
Neither disagree nor agree	Visual inspection is key.
Neither disagree nor agree	Visual exam is more important.
Strongly disagree	Only visual examination is needed.
Strongly disagree	Visual inspection of the whole palate is the gold standard. Change wording to 'Examination of the hard and soft palate must be carried out by visual inspection. Palpation of the palate adds nothing further to the diagnosis of cleft palate under these circumstances.

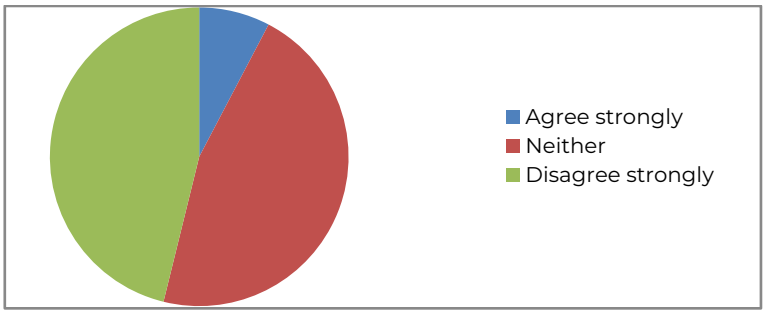
3. In cases where visual inspection is incomplete (so the whole of the palate is not seen) palpation should be carried out and the result be relied upon to determine presence or absence of a cleft.



Consensus not achieved

Response	Comments
Disagree strongly	Palpation and visualisation together are essential.
Disagree strongly	The visualization should be deemed vital to the assessment thus if not undertaken it is not complete assessment.
Disagree strongly	A repeat visual inspection and history of poor feeding necessitate a repeat examination at a subsequent time and by a cleft team member.
Disagree strongly	Sub mucosal clefts may be missed.
Disagree strongly	In such cases points 6 and 7 apply.
Disagree strongly	This would be very unreliable and lead to missed diagnoses and inappropriate management.
Neither agree nor disagree	Babies that have other abnormalities may be difficult to examine and to open their mouth so I would tend to "keep on the books" until a cleft could be excluded.

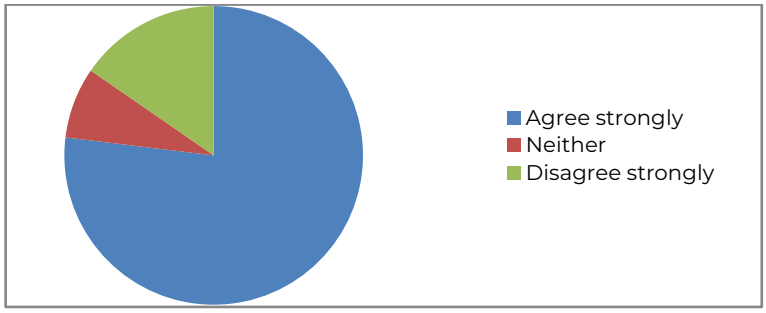
4. Digital examination may improve diagnostic accuracy once a cleft has been detected visually



Consensus not achieved

Response	Comments
Agree strongly	Palpation should be undertaken first and then visualization second.
Disagree strongly	The accuracy of diagnosis of 'cleft palate' is not improved by digital examination. Visual detection alone is sufficient for cleft palate.
Disagree strongly	Why palpate when you can see it. Primary practitioner would refer to cleft team on visualisation almost certainly.
Neither disagree not agree	I am not aware that this would be necessary if it has been diagnosed via visualisation although it is likely to have been carried out first anyway. It is best to refer to the cleft palate team straight away.
Neither disagree not agree	If there is a clear cleft then the management remains the same so the extent of the muscle defect is not necessarily relevant to the frontline staff but would obviously be documented by the surgeon following palate repair. However, in the case of a SMCP where it is difficult to visualise the translucent area a palpation to identify a hard palate notch maybe helpful.
Neither disagree not agree	Once the cleft has been visualised there would be no need to palpate for a more accurate diagnosis.

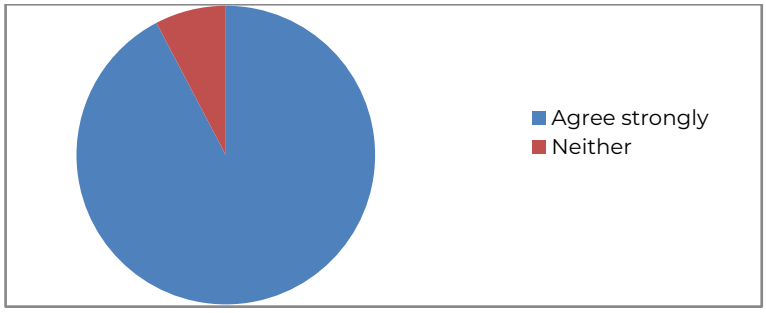
5. Visual inspection of the palate correctly performed is more likely to detect clefts of the palate, excluding submucous clefts, than palpation/digital examination alone.



Consensus achieved: 77% strongly agree

Response	Comments
Agree strongly	Also please note visual inspection of the palate correctly performed is also more likely to detect sub mucous cleft palates, than palpation/digital examination alone.
Agree strongly	Fully agree as long as 'correctly performed' means inspection of the whole palate from the incisive papilla (just behind the upper front gum area) to the uvula at the back of the soft palate with a good light source.

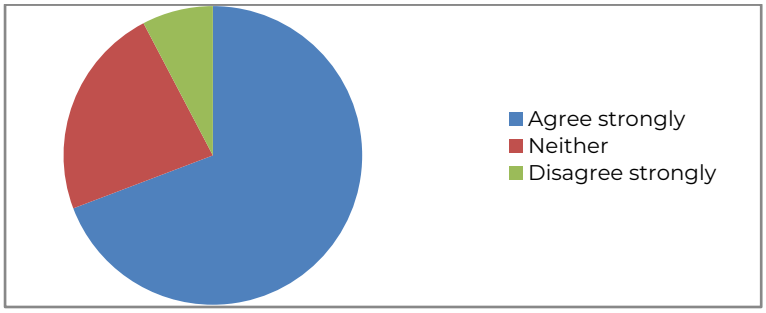
6. Parents should be informed if the whole palate (including the full length of the soft palate) could not be seen



Consensus achieved: 92% strongly agree

Response	Comments
Agree strongly	Parents should always be informed of the outcome of the examination and if a referral is necessary to complete the examination.
Agree strongly	The parents should be informed prior to the examination what it entails and what we are we examining and what will be deemed a full examination. If we informed them correctly, they are providing informed consent to the procedure and if it's not complete wil be encouraged to make sure that baby obtains the full examination.
Agree strongly	Yes, but an experienced specialist will also be able to examine for other signs such as feeding, clicking sound that would support a confident diagnosis.
Agree strongly	Parents need to understand the accuracy of the screening examination.
Agree strongly	And recorded in records and arrangements made for repeat examination of the palate during the period of confinement either by the same individual or another healthcare professional competent in palate examination.
Neither agree nor disagree	Probably reasonable to make them aware of potential feeding issues etc. that might prompt earlier review.

7. Healthcare professionals should delay discharging the baby home until the whole palate has been inspected, or arrange to return for review as soon as practicable



Consensus not achieved

Response	Comments
Neither disagree nor agree	Babies can be discharged but have the NIPE check in the community to include this examination.
Neither agree nor disagree	Not practical. Babies are examined in the community by midwives who have received examination of the newborn training and education. Babies should not be kept in hospital if feeding well. Further attempt to visualise the palate should be made at a later date.
Neither agree nor disagree	I don't think discharge should be delayed but the parents should receive a full explanation of the concerns and be encouraged to see the midwife or GP in the community (or return to the hospital) as soon as possible. This should be documented in the notes and communication with the wider MDT must be a priority.
Agree strongly	This would be the best policy. Examination of the palate in a neonate is usually straightforward. If a child were discharged home without the whole palate being inspected, I would be concerned that this could then be overlooked and the opportunity missed. I would also be concerned that this could encourage a more 'relaxed' approach by some practitioners carrying out the neonatal check, in other words a cursory examination of the mouth and palate, tick 'whole palate not seen' discharge and arrange review. I would not encourage such an approach.
Agree strongly	I would not delay but arrange an early refer with a more senior paediatrician.
Agree strongly	Combined with a holistic assessment of feeding and other indicators of cleft palate.
Agree strongly	I don't think a baby should be brought back to the hospital for a palate examination as routine follow up. If theory are discharged it would be more prudent to have community practitioners who can perform a full newborn examination which excludes the palate.
Agree strongly	Discharge may not have to be delayed but a review must be arranged.

Cont.

Agree strongly	It is important to note that not all births are in hospital but are undertaken in standalone birth centres or home births and some babies are sent home without the full assessment. It is important that this procedure is mandatory for midwives undertaking the examination following birth and that needs to be a national directive to make sure that pre-registration midwives are taught to assess the soft and hard palate correctly. The process of assessment should be on a teaching video to support the appropriate assessment to make sure that the baby is swaddled and the head supported to avoid movement while the spatula is inserted in the baby's mouth to avoid damage to the mucosa. A teaching video will hopefully be provided to support any guideline which may be produced to support safe practice. Please feel free to let me know if you wish to have support to make this video to support all practitioners to undertake this part of the holistic assessment.
Agree strongly	A complete examination should always be finalised prior to parents going home to ensure a correct care plan is in place and relevant referrals

Palate examination: Identification of cleft palate in the newborn and infant
Best practice guide

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