

Car Seat Challenge for at Risk Infants Including Those Weighing Less Than 2.0kg at Discharge Standard Operating Procedure

V1.0

July 2025

Summary

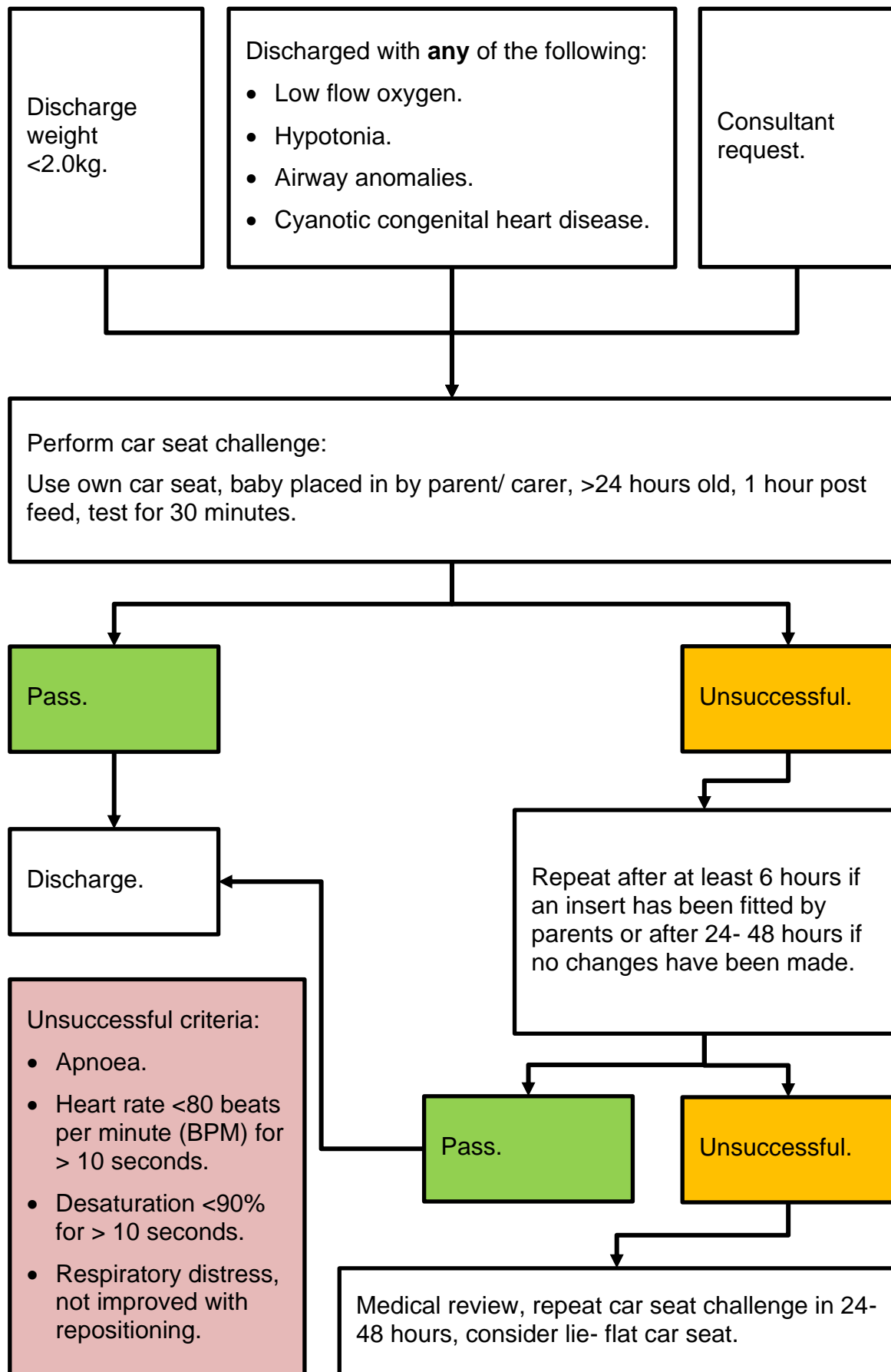


Table of Contents

Summary	2
1. Introduction	4
2. Purpose of this Standard Operating Procedure	4
3. Ownership and Responsibilities	4
3.1. Role of the Managers	4
3.2. Role of Individual Staff	4
4. Standards and Practice	5
5. Dissemination and Implementation	8
6. Monitoring compliance and effectiveness	8
7. Updating and Review	8
8. Equality and Diversity	8
Appendix 1. Governance Information	10
Appendix 2. Equality Impact Assessment	12
Appendix 3. Parent Information Leaflet	15
Appendix 5. Car Seat Challenge Proforma	19

Data Protection Act 2018 (UK General Data Protection Regulation – GDPR) Legislation.

The Trust has a duty under the Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed, and documented. We cannot rely on opt out, it must be opt in.

Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 is applicable to all staff; this includes those working as contractors and providers of services.

For more information about your obligations under the Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 please see the Information Use Framework Policy or contact the Information Governance Team.

Royal Cornwall Hospital Trust rch-tr.infogov@nhs.net

1. Introduction

To provide guidance for the identification and evaluation of infants who are at increased risk of apnoea, bradycardia and/or desaturation while positioned in a car seat, for all clinical staff working in the Care Group of Women, Children and HIV Services where the Trust supports them in this role.

2. Purpose of this Standard Operating Procedure

- 2.1. This Standard Operating Procedure (SOP) is to provide a framework for Transitional Care and Neonatal Unit staff to follow to complete a car seat challenge for infants at risk of compromise while positioned in a car seat challenge.
- 2.2. UK Law states that children under the age of 12 must use a child car seat when travelling in a car. Newborns must be in a rear-facing or lie-flat car seat from either Group 0 or 0+. Only EU-approved weight-based car seats can be used in the UK, these have a label showing a capital 'E' in a circle and 'ECE R44' (Gov.uk, 2025).
- 2.3. Car seats are manufactured and tested using 3.2kg weighted crash test dummies, however some infants are now discharged at <2.0kg. (Royal Society of the Prevention of Accidents (ROSPA)).
- 2.4. Smaller babies are prone to conditions such as apnoea, oxygen desaturation and hypotonia, this means that it is important that the infant is positioned and supported correctly in an appropriate car seat.
- 2.5. Some medical conditions such as chronic lung disease, airway anomalies, cyanotic congenital heart disease and hypotonia also place infants at increased risk of apnoea, bradycardia and/or desaturation regardless of discharge weight.
- 2.6. At risk infants should undergo a period of direct observation with continuous oxygen saturation and electrocardiogram (ECG) monitoring in their car seat before hospital discharge to monitor for possible apnoea, bradycardia and/or desaturation.

3. Ownership and Responsibilities

3.1. Role of the Managers

Line managers are responsible for:

- Ensuring the SOP is disseminated to applicable staff and for compliance with the guidance.

3.2. Role of Individual Staff

All staff members are responsible for:

- Identifying eligible infants.

- Discussing the rationale for performing a car seat challenge, what the procedure entails and the potential outcomes of the evaluation with the family
- Providing the family with the Car Seat Challenge Information Leaflet.
- Requesting for the family to bring the infants car seat in the 72-hours leading up to discharge and agree a date for the car seat challenge will be performed.
- Performing the car seat challenge.
- Adhering to the SOP within their own sphere of practice.
- Escalating infants who have NEWTT observations outside of the normal range.

4. Standards and Practice

4.1. Rationale

To promote the safe transportation of infants at risk of apnoea, bradycardia and/or desaturation while positioned in an appropriate infant car seat.

4.2. Indication

- 4.2.1. Infants with a discharge weight <2.0kg.
- 4.2.2. Infants being discharged on low flow oxygen.
- 4.2.3. Infants with hypotonia.
- 4.2.4. Infants with airway anomalies.
- 4.2.5. Infants with cyanotic congenital heart disease.
- 4.2.6. Or as requested by the discharging consultant.

4.3. Preparation

- 4.3.1. Discuss the rationale for performing a car seat challenge, what the procedure entails and the potential outcomes of the evaluation with the family.
- 4.3.2. Provide the family with the Car Seat Challenge Information Leaflet.
- 4.3.3. Request for the family to bring the infants car seat in the 72-hours leading up to discharge and agree a date for the car seat challenge will be performed.
- 4.3.4. If parents/carers decline a car seat challenge please escalate to ANNP, Tier 2 or Consultant.

4.4. Performing the Car Seat Challenge

- An oxygen saturation probe and ECG leads should be attached and monitoring commenced for 10-15 minutes prior to baby being placed in their car seat to obtain baseline readings.
- Parents/ carers must place and secure their baby in the car seat.
- The car seat should be appropriate for the age and size of the baby for the car seat challenge to be commenced by checking the following:
 - The shoulder straps should be at or below the baby's shoulders not above them.
 - The lap straps should come across the baby's thighs not over the knees or lower legs.
 - If present the chest harness clip should be at arm pit level, not on the abdomen or in front of the neck.
 - Only inserts recommended by the car seat manufacturer should be used in the car seat.
- The car seat should be reclined by the parents/carers as directed by the manufacturer prior to the car seat challenge being commenced.
- Set monitoring alarms as follows:
 - Heart rate 80-200.
 - Oxygen saturations 90-100%.
 - Apnoea 20 seconds.
- Use the Car Seat Challenge Proforma to document the Car Seat Challenge.
- Document the starting time of the test.
- The car seat challenge should be completed for a period of 30-minutes.
- The infant should be directly observed for the entire duration of the testing period by a nursery nurse or staff nurse.
- Observations should be recorded on the Car Seat Challenge Proforma every 10-minutes.
- Document on the Car Seat Challenge Proforma any of the following:
 - Apnoea lasting >20-seconds.
 - Bradycardia <80 beat per minute lasting >10 seconds.
 - Desaturations <90% lasting >10-seconds.

- Or for infants with cyanotic congenital heart disease a drop in oxygen saturations >10% from baseline saturations for >10 seconds.

4.5. Successful Car Seat Challenge

- 4.5.1. Remove baby from their car seat to limit the time in it. Do not leave them in their car seat pending discharge completion or allow the parents to immediately place the baby in the car as they have already been sat in their car seat for 30-minutes and it is important for them to be able to stretch and move around or be able to sleep in their cot (Lullaby Trust, 2025).
- 4.5.2. File completed Car Seat Challenge Proforma in the infants' medical notes.

4.6. When to stop a car seat challenge

- 4.6.1. If the baby shows increased work of breathing or has an apnoea >20 seconds, the car seat challenge should be discontinued and baby placed back in their cot with continuous monitoring in-situ.
- 4.6.2. If baseline observations return to normal when the baby is in their cot, medical review is not required, and the car seat challenge is recorded as unsuccessful of the proforma stating the reason why.
- 4.6.3. If baseline observations remain abnormal for the infant then escalate as per NEWTT2 (Newborn Early Warning Track and Trigger).

4.7. First Unsuccessful Car Seat Challenge

- 4.7.1. This may be due to the position of the baby in their car seat and/or the amount of head support in the car seat to protect their breathing, or the car seat is too big for the baby.
- 4.7.2. Advise parents to explore if their car seat manufacturers make any inserts for their car seat for small or preterm infants and repeat the car seat challenge when the inserts have been fitted by the parents leaving a minimum of 6 hours in between car challenges or repeat within 24-48 hours if no other changes made.

4.8. Second Unsuccessful Car Seat Challenge

- 4.8.1. Inform Neonatal Medical Team of second unsuccessful car seat challenge, infants to be reviewed on next ward round.
- 4.8.2. Discuss with the parents/carers if a lie-flat car seat would be an option.

4.9. Alternate transport methods

Infants who are unable to tolerate time in a rear-facing car seat, could be transported home in their pram if it has a lie flat carry cot attachment using public transport if the family wishes.

5. Dissemination and Implementation

- 5.1. SOP will be shared with stakeholders involved in the care of this group of patients. The document will be available on the Documents Library under Newborn. Senior neonatal and maternity staff will discuss the SOP at Safety Briefs and Huddles as part of the safety bulletin.
- 5.2. The Neonatal Practice Education Lead, Neonatal Clinical Skills Facilitator, and Transitional Care Clinical Skill Facilitator will utilise this document during refresher training of existing neonatal and maternity staff and during induction/supernumerary periods to underpin knowledge and skills with new staff.

6. Monitoring compliance and effectiveness

Information Category	Detail of process and methodology for monitoring compliance
Element to be monitored	Compliance with policy/ key changes to practice.
Lead	Neonatal Audit and Guidelines Lead.
Tool	Adherence to guidelines will be monitored as part of the ongoing audit process on a Word or Excel template.
Frequency	As dictated by audit findings.
Reporting arrangements	Neonatal Audit and Guidelines Group.
Acting on recommendations and Lead(s)	Ward managers/ matron/ consultants/ CD's etc.
Change in practice and lessons to be shared	Required changes to practice will be identified and actioned within 3 months, immediately if required. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant staff/ stakeholders.

7. Updating and Review

This document will be reviewed every 3 years, unless changes to practice are identified.

8. Equality and Diversity

- 8.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the [Equality Diversity And Inclusion Policy](#) or the [Equality and Diversity website](#).

8.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Information Category	Detailed Information
Document Title:	Car Seat Challenge for at Risk Infants Including Those Weighing Less Than 2.0kg at Discharge Standard Operating Procedure V1.0
This document replaces (exact title of previous version):	New Document
Date Issued / Approved:	July 2025
Date Valid From:	July 2025
Date Valid To:	July 2026
Author / Owner:	Rachel Bailey: Advanced Neonatal Nurse Practitioner
Contact details:	01872 252667
Brief summary of contents:	To provide guidance to identify and evaluate infants who require a car seat challenge prior to discharge from the Neonatal Unit and Transitional Care Ward.
Suggested Keywords:	Car seat challenge, <2kg.
Target Audience:	RCHT: Yes CFT: No CIOB ICB: No
Executive Director responsible for Policy:	Chief Medical Officer
Approval route for consultation and ratification:	Neonatal Audit and Guidelines Group
Manager confirming approval processes:	Caroline Chappell
Name of Governance Lead confirming consultation and ratification:	Michael Cross
Links to key external standards:	None required
Related Documents:	Birth Weight Less Than 2.5kg (Neonates) Standard Operating Procedure. Prematurity in Infants Born 34 + 0 to 36 + 6 Weeks Standard Operating Procedure

Information Category	Detailed Information
Training Need Identified:	No
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet and Intranet
Document Library Folder/Sub Folder:	Clinical/ Newborn

Version Control Table

Date	Version Number	Summary of Changes	Changes Made by
June 2025	V1.0	Initial issue	Rachel Bailey; Advanced Neonatal Nurse Practitioner

All or part of this document can be released under the Freedom of Information Act 2000.

All Policies, Strategies and Operating Procedures, including Business Plans, are to be kept for the lifetime of the organisation plus 6 years.

This document is only valid on the day of printing.

Controlled Document.

This document has been created following the Royal Cornwall Hospitals NHS Trust [The Policy on Policies \(Development and Management of Knowledge Procedural and Web Documents Policy\)](#). It should not be altered in any way without the express permission of the author or their Line Manager.

Appendix 2. Equality Impact Assessment

Section 1: Equality Impact Assessment (EIA) Form

The EIA process allows the Trust to identify where a policy or service may have a negative impact on an individual or particular group of people.

For guidance please refer to the Equality Impact Assessment Policy (available from the document library) or contact the Equality, Diversity, and Inclusion Team
rcht.inclusion@nhs.net

Information Category	Detailed Information
Name of the strategy / policy / proposal / service function to be assessed:	Car Seat Challenge for at Risk Infants Including Those Weighing Less Than 2.0kg at Discharge Standard Operating Procedure V1.0
Department and Service Area:	Neonatal
Is this a new or existing document?	New
Name of individual completing EIA (Should be completed by an individual with a good understanding of the Service/Policy):	Neonatal Audit and Guidelines Group
Contact details:	01872 252667

Information Category	Detailed Information
1. Policy Aim - Who is the Policy aimed at? (The Policy is the Strategy, Policy, Proposal or Service Change to be assessed)	Neonatal and Transitional Care staff caring for infants at increased risk of apnoea, bradycardia and/ or desaturation while positioned in a car seat.
2. Policy Objectives	Ensuring infants at higher risk of apnoea, bradycardia and/or desaturation while positioned in a car sat are assessed and evaluated in their car seat prior to discharge.
3. Policy Intended Outcomes	To improve the well-being of patients by offering the appropriate management of patients.
4. How will you measure each outcome?	Audit/Multidisciplinary team weekly discussion/ incidents/ risk management.
5. Who is intended to benefit from the policy?	Preterm and low birth weight infants and their families.

Information Category	Detailed Information
6a. Who did you consult with? (Please select Yes or No for each category)	<ul style="list-style-type: none"> Workforce: Yes Patients/ visitors: No Local groups/ system partners: No External organisations: No Other: No
6b. Please list the individuals/groups who have been consulted about this policy.	Please record specific names of individuals/ groups: Neonatal Audit and Guidelines Group.
6c. What was the outcome of the consultation?	Approved.
6d. Have you used any of the following to assist your assessment?	National or local statistics, audits, activity reports, process maps, complaints, staff, or patient surveys: No.

7. The Impact

Following consultation with key groups, has a negative impact been identified for any protected characteristic? Please note that a rationale is required for each one.

Where a negative impact is identified without rationale, the key groups will need to be consulted again.

Protected Characteristic	(Yes or No)	Rationale
Age	No	
Sex (male or female)	No	
Gender reassignment (Transgender, non-binary, gender fluid etc.)	No	
Race	No	Any information provided should be in an accessible format for the parent/ carer/ patient's needs- i.e., available in different languages if required/ access to an interpreter if required.

Protected Characteristic	(Yes or No)	Rationale
Disability (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	No	Those parent/ carer/ patients with any identified additional needs will be referred for additional support as appropriate- i.e., to the Liaison Team or for specialised equipment. Written information will be provided in a format to meet the family's needs e.g., easy read, audio etc.
Religion or belief	No	All staff should be aware of any beliefs that may impact on the decision to treat and should respond accordingly.
Marriage and civil partnership	No	All staff should be aware of any marital arrangements that may have an impact on care (for example: separated parents, domestic abuse).
Pregnancy and maternity	No	
Sexual orientation (e.g. gay, straight, bisexual, lesbian etc.)	No	

A robust rationale must be in place for all protected characteristics. If a negative impact has been identified, please complete section 2. If no negative impact has been identified and if this is not a major service change, you can end the assessment here.

I am confident that section 2 of this EIA does not need completing as there are no highlighted risks of negative impact occurring because of this policy.

Name of person confirming result of initial impact assessment: Neonatal Audit and Guidelines Group.

If a negative impact has been identified above OR this is a major service change, you will need to complete section 2 of the EIA form available here:
[Section 2. Full Equality Analysis](#)

Appendix 3. Parent Information Leaflet

Information for parents, carers and families.

Congratulations on the birth of your baby!

In preparation for your baby's discharge from hospital we would like to check that they are safe to travel in your car seat. Therefore, your baby needs to have a car seat challenge test or tolerance test.

This information leaflet will provide you with information about what it involves and when it will be performed. If you have any questions following reading this leaflet, please discuss them with a member of staff.

Car seat safety.

"Car seats are essential for your baby's safety while driving, but babies shouldn't sleep in them for long periods. Research has found that young babies may be at risk of breathing difficulties if they sleep upright in a seated position for too long" (Lullabytrust.org.uk 2025)

Make sure the car seat meets safety standards.

Car seats must conform to safety standards such as:

- United Nations standard, ECE Regulation 44.04 (or R 44.03).
- The new i-size regulation, R129.

Look for the 'E' mark label on the seat, which shows it meets European Union Safety standards.

Ensure that you have checked your car seat in your car prior to your discharge date, and that you know how to adjust the straps and how it works. Read and follow the manufacturer's instructions and watch their video on their website, if available.

Car seats and reducing the risk of SIDS (Sudden Infant Death Syndrome).

Follow these tips to help keep your baby safe while travelling in a car seat:

- **Avoid driving long distances with pre-term and young babies.** Research has found that young babies may be at risk of breathing difficulties if they sleep upright in a seated position for too long, which can increase the risk of sudden infant death syndrome (SIDS).
- **Stop and take regular breaks if you're driving a long way.** This will allow you to check on your baby, take them out of the car seat and let them stretch and move around.

- **If possible, have a second adult in the back seat with your baby.** If you're travelling alone, use a mirror to keep an eye on them. Do not leave your baby unsupervised in a car seat.
- **If your baby changes their position and slumps forward, stop straight away.** Then take them out of the car seat and sit them upright before continuing on your journey.
- **Babies shouldn't sleep in car seats for long periods.** Car seats are designed to keep babies safe while travelling and are not an alternative to a cot so take them out at regular intervals and place them on a firm, flat surface to sleep when you reach your destination.
- **Minimise time in a car seat to no longer than 30-minutes** for the first few months of age, and that baby's should be taken out of their car seat every 30-minutes for longer journeys.
- **Choose a rear-facing baby seat.** This is essential for safety. They provide better protection for the baby's head, neck and spine compared to forward-facing seats.
- **Make sure you have the right car seat for your baby's weight** by checking the following:
 - a) The distance between the crotch strap and the back of the car seat should be less than 5.5 inches, this reduces the potential for your baby to slump forward.
 - b) The shoulder straps should be at or below the baby's shoulders not above them. For preterm infants this likely means putting the straps at the lowest setting.
 - c) The lap straps should come across the baby's thighs not over the knees or lower legs.
 - d) If present the chest harness clip should be at arm pit level, not on the abdomen or in front of the neck.
 - e) Ensure the straps to the harness are not twisted or too loose. You should only be able to fit 2 fingers comfortably between the strap and your baby's chest.
 - f) Ensure your baby is straight when placed in the car seat, your baby's head should be looking straight ahead and not slumped.
 - g) Only inserts recommended by the car seat manufacturer should be used in the car seat.

Avoid overheating in the car.

Babies are at a greater risk of SIDS if they get too hot. Follow these tips to help stop them getting too hot while you're travelling by car.

- **Remove any hats or outdoor clothing**, such as snowsuits and coats. It's especially importance to remove hats, as your baby maintains their body temperature by releasing heat through their head. Don't wrap your baby in a swaddle or blanket before buckling

them in. Instead, buckle your baby in, and then put a blanket or coat over your baby if needed.

- **Check your baby isn't getting too hot.** The best way is to feel their tummy or the back of their neck. If their skin feels clammy or sweaty, they are too hot, so remove a layer of clothing.

What is a car seat challenge?

The car seat challenge test or tolerance test is to assess whether it is safe for your baby to be in a car seat for a given length of time.

Legally car seats are essential for safe travel when travelling in cars. Therefore, it is important to check that your baby can travel in a car seat safely.

Your baby will need a car seat challenge test if they:

- Less than 2kg at discharge.
- Are going home in oxygen.
- Have a medical condition that could affect their ability to tolerate time in a car seat.

How is the test completed?

Ideally, we will ask you to bring in your car seat a few days prior to the planned discharge date.

We will perform the challenge approximately an hour after a feed, so your baby should be settled. We will put some monitoring back onto your baby so we can assess their breathing and heart rate easily. We will monitor your baby in their cot first for 10-15 minutes, just so we have some baseline readings. We will ask you to place your baby in their car seat and secure them as you would normally. Then we will continue to monitor your baby's breathing, oxygen saturations and heart rate for an hour.

What happens if the car seat challenge is unsuccessful?

For your baby to pass the car seat challenge they need to keep their heart rate over 80 beats per minute and their oxygen saturations must not drop below 90% for more than 10 seconds.

If your baby has a congenital heart defect, the oxygen saturation limits will be altered specifically for your baby by the cardiologist or neonatal consultant.

If your baby appears to have increased work of breathing, they go pale or change colour, or they have a pause in breathing (apnoea) then the test will be stopped immediately, and they will be placed back in their cot and medically assessed if necessary.

An unsuccessful car seat challenge may be due to the position of your baby in their car seat, their head may not be supported sufficiently to protect their breathing, in which case a different insert may be required, or the car seat may be too big for them. It may suggest that your baby is not ready for discharge yet.

We would repeat the car seat challenge in 24-48 hours, or sooner if you have sourced and fitted a new insert.

If your baby is unsuccessful the second time, your baby will have a medical review and plans for working towards discharge will be discussed with you. Occasionally, lie-flat car seats may be suggested as an alternative.

Useful websites

<https://www.lullabytrust.org.uk/baby-safety/baby-product-information/car-seats/>

<https://www.childcarseats.org.uk/choosing-using>

<https://www.gov.uk/child-car-seats-the-rules>

<https://www.rospa.com/policy/road-safety/advice/vehicles/car-seats>

Useful Information

Car Seat Fitting and Compatibility (ROSPA)



Carrying Children Safely in Taxis, Coaches, Buses and Minibuses (ROSPA)



Affix patient sticker here

Appendix 5. Car Seat Challenge Proforma

- Hospital staff cannot recommend car seats or car seat inserts.
- Car seat should be appropriate for the age and size of the baby (see car seat information).
- Only inserts recommended by the car seat manufacturer should be used in the car seat.
- To be performed in a nursery or in the paediatric room on transitional care.
- To be monitored by neonatal or transitional care staff nurse or neonatal or transitional care nursery nurse.
- Baby to be placed in the car seat by the parent, not staff member.
- Do not use any towels/blankets to support the baby.
- Shoulder straps should be at or below your baby's shoulders, not above them. For preterm newborns, that likely means putting the straps at their lowest setting.

Start Date and Time:			
Time Every 10 minutes	Heart Rate	Respiratory Rate	Oxygen Saturations
Baseline Observations			
10			
20			
30			
Pass or unsuccessful/ fail (please circle the appropriate result). If unsuccessful, please clearly state why below using the failure criteria. a. Apnoea. b. Bradycardia. c. Desaturation. d. Any concerning alterations in vital signs warranting medical review and/termination of test.			
Completed by:	Sign: Print: Date/ Time:		

Affix patient sticker here

Failure criteria

- a. Period of apnoea.
- b. Bradycardia – Heart rate <80 beats per minute lasting >10 seconds.
- c. Desaturation:
 - For infants **without** cyanotic heart disease: Saturation (SpO₂) <90% lasting > 10 seconds.
 - For infants with Cyanotic Heart Disease: A drop in saturation (SpO₂) ≥10% from the infant's baseline SpO₂ for >10 seconds. (For example, if the baseline saturation is 80%, a drop to 70% for >10 seconds would constitute a failed test.).
- d. Any alterations in vital signs that are considered concerning to the nurse monitoring the baby and following consultation with the neonatal registrar or advanced neonatal nurse practitioner.
- e. If none of the above occur, the infant passed the car seat tolerance screen and may go home in the car seat.

Please update parents/carers of the test result if not present.

File the completed form in the baby's notes, thank you.