East Midlands Neonatal
Operational Delivery Network

SERVICE SPECIFICATION / CARE PATHWAYS

CONTENTS

INTRODUCTION

Welcome to the first version of the East Midlands Neonatal Operational Delivery Network (EMNODN) care pathway document. The EMNODN was established in April 2018 when the Central Newborn Network units were merged with the Trent Perinatal Network units to form a single EMNODN. This care pathway was originally drawn up for the Central Newborn and Trent Perinatal Networks following the East Midlands Neonatal unit designation process[1] which were completed in April 2009. It summarises the individual unit thresholds and provides detail on how babies should be cared for across the EMNODN.

The underlying aim of the care pathways is to support the aim of the Network and the East Midlands Specialised Commissioning team: namely to provide a neonatal service that ensures that mothers and babies are able to access the best and most appropriate level of care at the right place and at the right time, and as close to home as possible[2]. This is underpinned by a focus on clinical discussions, agreement and monitoring.

These pathways detail the clinical thresholds that are expected to be used in order to guide care and to clarify when discussions should take place.

The EMNODN and the East Midlands Specialised Commissioning teams will monitor the care received by babies in the EMNODN and suggest any changes as appropriate, in agreement with the provider Trusts.

A Network exception reporting process is to be carried out in the event of any unit providing care outside of its individual clinical thresholds

[1] Developing a Commissioning Strategy for Neonatal Services – Delivering a Safe and Sustainable Service for the Population of the East Midlands. EMSCG, March 2009.
[2] Strategic Plan, East Midlands Neonatal Strategic Coordinating Group. April 2009.

FETAL ANOMALY

Babies with an antenatal diagnosis of cardiac or other congenital anomaly may deliver in Kettering General, if an agreed postnatal management plan is in place. Babies with antenatally identified surgical conditions will normally be delivered in a unit with neonatal surgery facilities. Following input from a Paediatric Cardiologist, it may also be appropriate to deliver babies with some antenatally detected cardiac problems in a cardiac or Network Perinatal Centre.

GESTATION LIMIT

Where possible, women in premature labour at less than 26^{+0} weeks gestation will be transferred to deliver in a Network Perinatal Centre. If, for whatever reason, a baby below this gestation limit is delivered at Kettering General, the baby will be stabilised and assessed and appropriate arrangements put into place following discussion with the Network Perinatal Centre.

Under 26 weeks gestation: Any baby of less than 26^{+0} weeks gestation should normally be transferred to a Network Perinatal Centre if continuing intensive care is appropriate. If there is doubt about necessity for transfer (e.g. baby dying, baby stable and on the edge of the unit pathway threshold), there will be consultant to consultant discussion with the Network Perinatal Centre. Such exceptional cases which are treated outside of these guidelines will be monitored by the Network and Specialist Commissioners.

26 weeks gestation and above: Whether a baby of 26^{+0} weeks gestation, and above, should remain at Kettering General depends upon where the care needs fall within the following criteria:

CRITERIA FOR CARE AT KETTERING GENERAL HOSPITAL

Complex Intensive Care: Babies requiring respiratory support with symptoms of additional organ failure (e.g. hypotension, DIC, renal failure, metabolic acidosis) will require transfer to the Network Perinatal Centre

Ventilation: If a preterm baby of 26 weeks' gestation requires conventional ventilation at 48 hours of age, the baby will be discussed with staff of a Network Perinatal Centre and may require transfer out to a Network Perinatal Centre. Any baby who continues to require IPPV for more than 5 days will be discussed with a Network Perinatal Centre and will usually require transport to a Neonatal Perinatal Centre. These thresholds will be audited and may be adjusted if necessary.

HFOV, ECMO and Nitric Oxide: Babies who are likely to require HFOV, ECMO or Nitric Oxide will need to be transferred to a specialist centre and early consideration should be given to this.

CPAP: Babies requiring CPAP will remain at Kettering General.

HF02: Babies requiring HF02 will remain at Kettering General.

PN: Babies requiring PN will be managed at Kettering General.

Surgery: Babies who require surgery or a surgical opinion will be transferred out to a neonatal surgical centre.

Cooling: Newly born babies who require cooling for treatment of perinatal asphyxia will be transferred to a Network Perinatal Centre.

Suspected Cardiac/PDA Cases: Where a possible cardiac problem is suspected, after discussion with the Cardiologist, discussion should take place with the transport consultant or the perinatal centre before transfer. This is to allow optimisation of ventilatory treatment before ambulance transfer is undertaken. Babies with PDA who require surgery must be discussed with the perinatal centre before discussion with the cardiologists, as per the agreed Network PDA pathway.

BABIES RETURNING TO KETTERING GENERAL HOSPITAL

Babies may return to Kettering General when they are clinically well and safe for transfer. They may be transferred if they are still requiring IPPV (e.g. if extubation is anticipated soon or it is a post-operative transfer, or a transfer back from ECMO), or if the baby still requires CPAP, HF02, or PN. Babies will not be transferred back if they require HFOV.

ANTENATAL TRANSFERS INTO KETTERING GENERAL HOSPITAL

Women in preterm labour at or above 27^{+0} gestation may be accepted into Kettering General for delivery.

REPATRIATION OF BABIES TO REFERRING UNIT

Discussion regarding repatriation must commence between Kettering General and the babies referring unit as soon as the baby meets the clinical pathway threshold for that referring unit. Arrangements for repatriation should be commenced as soon as the baby is stable for transfer.

EXCEPTION REPORTING

The Network team and commissioners will expect reports on those babies that are identified from the BadgerNet database as being below 26 weeks gestation or who breach the criteria detailed above. Exceptions will be expected where babies stay in Kettering General but appear clinically suitable for referral back to the home unit.

Reports are also expected on those babies at or above 44 corrected weeks of gestation that remain on the neonatal unit.

FETAL ANOMALY

Babies with an antenatal diagnosis of cardiac or other congenital anomaly may deliver in Northampton General, if an agreed postnatal management plan is in place. Babies with antenatally identified surgical conditions will normally be delivered in a unit with neonatal surgery facilities. Following input from a Paediatric Cardiologist, it may also be appropriate to deliver babies with some antenatally detected cardiac problems in a cardiac or Network Perinatal Centre.

GESTATION LIMIT

Where possible, women in premature labour at less than 27^{+0} weeks gestation will be transferred to deliver in a Network Perinatal Centre. If, for whatever reason, a baby below this gestation limit is delivered at Northampton General, the baby will be stabilised and assessed and appropriate arrangements put into place following discussion with the Network Perinatal Centre.

Under 27 weeks gestation: Any baby of less than 27^{+0} weeks gestation should normally be transferred to a Network Perinatal Centre if continuing intensive care is appropriate. If there is doubt about necessity for transfer (e.g. baby dying, baby stable and on the edge of the unit pathway threshold), there will be consultant to consultant discussion with the Network Perinatal Centre. Such exceptional cases which are treated outside of these guidelines will be monitored by the Network and Specialist Commissioners.

27 weeks gestation and above: Whether a baby of 27+0 gestation, and above, should remain at Northampton General depends upon where the care needs fall within the following criteria:

CRITERIA FOR CARE AT NORTHAMPTON GENERAL HOSPITAL

Complex Intensive Care: Babies requiring respiratory support with symptoms of additional organ failure (e.g. hypotension, DIC, renal failure, metabolic acidosis) will require discussion with the Network Perinatal Centre and transfer out if appropriate.

Ventilation: If a preterm baby of 27 weeks' gestation requires conventional ventilation at 48 hours of age, the baby will be discussed with staff of a Network Perinatal Centre and may require transfer out to a Network Perinatal Centre. Any baby who continues to require IPPV for more than 5 days will be discussed with a Network Perinatal Centre and will usually require transport to a Network Perinatal Centre. These thresholds will be audited and may be adjusted if necessary.

HFOV, ECMO and Nitric Oxide: Babies who are likely to require HFOV, ECMO or Nitric Oxide will need to be transferred to a specialist centre and early consideration should be given to this.

CPAP: Babies requiring CPAP will remain at Northampton General.

HFO2: Babies requiring HFO2 will remain at Northampton General.

PN: Babies requiring PN will be managed at Northampton General.

Surgery: Babies who require surgery or a surgical opinion will be transferred out to a neonatal surgical centre.

Cooling: Newly born babies who require cooling for treatment of perinatal asphyxia will be transferred to a Network Perinatal Centre.

Suspected Cardiac/PDA Cases: Where a possible cardiac problem is suspected, after discussion with the Cardiologist, discussion should take place with the transport consultant or the perinatal centre before transfer. This is to allow optimisation of ventilatory treatment before ambulance transfer is undertaken. Babies with PDA who require surgery must be discussed with the perinatal centre before discussion with the cardiologists, as per the agreed Network PDA pathway.

BABIES RETURNING TO NORTHAMPTON GENERAL HOSPITAL

Babies may return to Northampton General when they are clinically well and safe for transfer. They may be transferred if they are still requiring IPPV (e.g. if extubation is anticipated soon or it is a post-operative transfer, or a transfer back from ECMO), or if the baby still requires CPAP, HF02, or PN. Babies will not be transferred back if they require HFOV.

ANTENATAL TRANSFERS INTO NORTHAMPTON GENERAL HOSPITAL

Women in preterm labour at or above 27^{+0} gestation may be accepted into Northampton General for delivery.

REPATRIATION OF BABIES TO REFERRING UNIT

Discussion regarding repatriation must commence between Northampton General and the babies referring unit as soon as the baby meets the clinical pathway threshold for that referring unit. Arrangements for repatriation should be commenced as soon as the baby is stable for transfer.

EXCEPTION REPORTING

The Network team and commissioners will expect reports on those babies that are identified from the BadgerNet database as being below 27 weeks gestation or who breach the criteria detailed above. Exceptions will be expected where babies stay in Northampton General but appear clinically suitable for referral back to the home unit.

Reports are also expected on those babies at or above 44 corrected weeks of gestation that remain on the neonatal unit.

FETAL ANOMALY

Babies with an antenatal diagnosis of cardiac or other congenital anomaly may deliver in City Campus, if an agreed suitable postnatal management plan is in place. Babies with antenatally identified surgical conditions will normally be delivered in a unit with neonatal surgery facilities. Following input from a Paediatric Cardiologist it is appropriate to deliver some antenatally detected cardiac problems on the City Campus.

GESTATION LIMIT

As a neonatal intensive care unit, the City Campus shall treat babies of the entire gestational age spectrum. It is accepted that some babies may be born 'previable' and thus will not be actively resuscitated.

CRITERIA FOR CARE AT NOTTINGHAM CITY CAMPUS

Complex Intensive Care:	Babies requiring respiratory support with symptoms of additional organ failure (e.g. hypotension, DIC, renal failure, metabolic acidosis) will remain on the City Campus
Ventilation:	Babies receiving all ventilatory modalities shall be suitable for treatment on the City Campus.
HFOV:	Babies who require HFOV will be assessed and remain on the City Campus.
ECMO:	Babies who require ECMO will need to be transferred to an ECMO centre.
Nitric Oxide:	Term babies who need iNO will be managed on the City Campus. Failure to respond will be discussed with an ECMO centre and early consideration should be given to this.
CPAP:	Babies requiring CPAP will remain on the City Campus.
HF02:	Babies requiring HF02 will remain on the City Campus.
PN:	Babies requiring PN will be managed on the City Campus.
Surgery:	Babies who require surgery or a surgical opinion will be transferred out to a surgical centre as needed, although it may be possible for a baby to be assessed by a Paediatric Surgeon from the QMC Campus.
Cooling:	Newly born babies who require cooling for treatment of perinatal asphyxia will be managed on the City Campus.
Suspected Cardiac/PDA Cases:	Where a possible cardiac problem is suspected, after discussion with the Cardiologist, discussion should take place with the transport consultant or the perinatal centre before transfer. This is to allow optimisation of ventilatory treatment before ambulance transfer is undertaken.

BABIES RETURNING TO NOTTINGHAM CITY CAMPUS

Babies should return to City Campus when clinically stable for transfer.

ANTENATAL TRANSFERS INTO NOTTINGHAM CITY CAMPUS

Except in the presence of known antenatally detected surgical problems or serious cardiac abnormalities (where delivery in a cardiac centre has been agreed), all women may be considered for delivery on the City Campus.

REPATRIATION OF BABIES TO REFERRING UNIT

Discussion regarding repatriation must commence between City Campus and the babies referring unit as soon as the baby meets the clinical pathway threshold for the referring unit. Arrangements for repatriation should be commenced as soon as the baby is stable for transfer.

EXCEPTION REPORTING

The Network team and commissioners will expect reports on those babies that are identified from the BadgerNet database as meeting the referring hospitals threshold level but are not repatriated and remain on City Campus.

Reports are also expected on those babies at or above 44 corrected weeks of gestation that remain on the neonatal unit.

NOTTINGHAM UNIVERSITY HOSPITALS NHS TRUST – QUEEN'S MEDICAL CENTRE CAMPUS (NORTH HUB PERINATAL CENTRE)

FETAL ANOMALY

Babies with an antenatal diagnosis of cardiac or other congenital anomaly will deliver in the Queen's Medical Centre Campus, if an agreed postnatal management plan is in place. Babies with antenatally identified surgical conditions will normally be delivered at the Queen's Medical Centre Campus. Following input from a Paediatric Cardiologist it may be appropriate to deliver some antenatally detected cardiac problems in a cardiac centre.

GESTATION LIMIT

As a Network Perinatal Centre, the Queen's Medical Centre Campus shall treat babies of the entire gestational age spectrum. It is accepted that some babies may be born 'previable' and thus will not be actively resuscitated.

CRITERIA FOR CARE AT NOTTINGHAM QUEEN'S MEDICAL CENTRE CAMPUS

Complex Intensive Care: Babies requiring respiratory support with symptoms of additional organ failure (e.g. hypotension, DIC, renal failure, metabolic acidosis) will remain on the Queen's Medical Centre Campus.

Ventilation: Babies receiving all ventilatory modalities shall be suitable for treatment on the Queen's Medical Centre Campus.

HFOV: Babies who require HFOV will be assessed and remain on the Queen's Medical Centre Campus.

ECMO: Babies who require ECMO will need to be transferred to an ECMO centre.

Nitric Oxide: Term babies who need iNO will be managed on the QMC Campus. Failure to respond will be discussed with an ECMO centre and early consideration should be given to this.

CPAP: Babies requiring CPAP will remain on the Queen's Medical Centre Campus.

HF02: Babies requiring HF02 will remain on the Queen's Medical Centre Campus.

PN: Babies requiring PN will be managed on the Queen's Medical Centre Campus.

Surgery: Babies who require surgery or a surgical opinion will be managed on the Queen's Medical Centre Campus.

Cooling: Newly born babies who require cooling for treatment of perinatal asphyxia will be managed on the Queen's Medical Centre Campus.

Suspected Cardiac/PDA Cases: Where a possible cardiac problem is suspected, after discussion with the Cardiologist, discussion should take place with the transport consultant before transfer. This is to allow optimisation of ventilatory treatment before ambulance transfer is undertaken.

BABIES RETURNING TO NOTTINGHAM QUEEN'S MEDICAL CENTRE CAMPUS

Babies should return to Queen's Medical Centre Campus when clinically stable for transfer.

ANTENATAL TRANSFERS INTO NOTTINGHAM QUEEN'S MEDICAL CENTRE CAMPUS

Except in the presence of known severe antenatally detected surgical problems or serious cardiac abnormalities (where delivery in a supra-specialist or cardiac centre has been agreed), all women may be considered for delivery on the Queen's Medical Centre Campus.

REPATRIATION OF BABIES TO REFERRING UNIT

Discussion regarding repatriation must commence between Queen's Medical Centre Campus and the babies referring unit as soon as the baby meets the clinical pathway threshold for the referring unit. Arrangements for repatriation should be commenced as soon as the baby is stable for transfer.

EXCEPTION REPORTING

The Network team and commissioners will expect reports on those babies that are identified from the BadgerNet database as meeting the referring hospitals threshold level but are not repatriated and remain on Queen's Medical Centre Campus

Reports are also expected on those babies at or above 44 corrected weeks of gestation that remain on the neonatal unit.

SHERWOOD FOREST HOSPITALS NHS FOUNDATION TRUST - KING'S MILL HOSPITAL

FETAL ANOMALY

Babies with an antenatal diagnosis of cardiac or other congenital anomaly will deliver in King's Mill, if a suitable postnatal management plan is in place. Babies with antenatally identified surgical conditions will normally be delivered in a unit with neonatal surgery facilities. Following input from a Paediatric Cardiologist it may also be appropriate to deliver some antenatally detected cardiac problems in a cardiac or Network Perinatal Centre.

GESTATION LIMIT

Where possible, women in premature labour at less than 28^{+0} weeks gestation will be transferred to deliver in a Network Perinatal Centre or an appropriate Neonatal Unit. If, for whatever reason, a baby below this gestation limit is delivered at King's Mill, the baby will be stabilised and assessed and appropriate arrangements put into place following discussion with the Network Perinatal Centre.

Under 28 weeks gestation: Any baby of less than 28^{+0} weeks gestation should normally be transferred to a Network Perinatal Centre if continuing intensive care is appropriate. If there is doubt about necessity for transfer (e.g. baby dying, baby stable and on the edge of the unit pathway threshold), there will be consultant to consultant discussion with the Network Perinatal Centre. Such exceptional cases which are treated outside of these guidelines will be monitored by the Network and Specialised Commissioners.

28 weeks gestation and above: Whether a baby of 28^{+0} weeks gestation, and above, should remain in King's Mill depends upon where the care needs fall within the following criteria:

CRITERIA FOR CARE AT KING'S MILL HOSPITAL

Complex Intensive Care: Babies requiring respiratory support with symptoms of additional organ failure (e.g. hypotension, DIC, renal failure, metabolic acidosis) will require transfer to the Network Perinatal Centre.

Ventilation: If a preterm baby of 28 weeks' gestation requires conventional ventilation at 24 hours of age, the baby will be discussed with staff of a Network Perinatal Centre and normally be transferred to a Network Perinatal Centre or an appropriate Neonatal Unit.

HFOV, ECMO and Nitric Oxide: Babies who are likely to require HFOV, ECMO or Nitric Oxide will need to be transferred to a specialist centre and early consideration should be given to this.

CPAP: Babies requiring CPAP will remain at King's Mill.

HF02: Babies requiring HF02 will remain at King's Mill.

PN: Babies requiring PN will be managed at King's Mill.

Surgery: Babies who require surgery or a surgical opinion will be transferred out to a neonatal surgical centre.

Cooling: Newly born babies who require cooling for treatment of perinatal asphyxia will be transferred to a Network Perinatal Centre.

Suspected Cardiac/PDA Cases: Where a possible cardiac problem is suspected, after discussion with the Cardiologist, discussion should take place with the transport consultant or the perinatal centre before transfer. This is to allow optimisation of ventilatory treatment before ambulance transfer is undertaken. Babies with PDA who require surgery must be discussed with the perinatal centre before discussion with the cardiologist, as per the agreed Network PDA pathway.

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BABIES RETURNING TO KING'S MILL HOSPITAL

Babies should return to King's Mill when they are clinically well and safe for transfer. They may be transferred if the baby still requires CPAP, HF02, or PN. Babies will not be transferred back if they have on-going ventilation requirements.

ANTENATAL TRANSFERS INTO KING'S MILL HOSPITAL

Women in preterm labour at or above 29^{+0} gestation may be accepted into King's Mill for delivery.

REPATRIATION OF BABIES TO REFERRING UNIT

Discussion regarding repatriation must commence between King's Mill and the babies referring unit as soon as the baby meets the clinical pathway threshold for the referring unit. Arrangements for repatriation should be commenced as soon as the baby is stable for transfer.

EXCEPTION REPORTING

The Network team and commissioners will expect reports on those babies that are identified from the BadgerNet database as being below 28 weeks gestation or who breach the criteria detailed above. Exceptions will be expected where babies stay in King's Mill but appear clinically suitable for referral back to the home unit.

Reports are also expected on those babies at or above 44 corrected weeks of gestation that remain on the neonatal unit.

UNIVERSITY HOSPITALS OF DERBY & BURTON NHS FOUNDATION TRUST - QUEEN'S HOSPITAL

FETAL ANOMALY

Babies with an antenatal diagnosis of cardiac or other congenital anomaly may deliver in Queen's, if an agreed postnatal management plan is in place. Babies with antenatally identified surgical conditions will be delivered in a unit with neonatal surgery facilities. Following input from a Paediatric Cardiologist, it may also be appropriate to deliver some antenatally detected cardiac problems in a cardiac or Network Perinatal Centre.

GESTATION LIMIT

Where possible, women in premature labour at less than 29^{+0} weeks gestation will be transferred to deliver in a Network Perinatal Centre or an appropriate Neonatal Unit. If, for whatever reason, a baby below this gestation limit is delivered at Queen's the baby will be stabilised and assessed and appropriate arrangements put into place following discussion with the Network Perinatal Centre.

Under 29 weeks gestation: Any baby of less than 29^{+0} weeks gestation should normally be transferred to a Network Perinatal Centre or an appropriate Neonatal Unit. If there is doubt about the necessity for transfer (e.g. baby dying, baby stable and on the edge of the unit pathway threshold), there will be Consultant to Consultant discussion with the Network Perinatal Centre. Such exceptional cases which are treated outside of these guidelines will be monitored by the Network and Specialist Commissioners.

29 weeks gestation and above: Whether a baby of 29^{+0} weeks gestation, and above, should remain at Queen's depends upon where the care needs falls within the following criteria:

CRITERIA FOR CARE AT QUEEN'S HOSPITAL

Complex Intensive Care: Babies requiring respiratory support with symptoms of additional organ failure (e.g. hypotension, DIC, renal failure, metabolic acidosis) will require transfer to the Network Perinatal Centre

Ventilation: If any baby continues to require conventional ventilation at 24 hours of age, or is anticipated to do so, the baby will be discussed with staff of the Network Perinatal Centre and will normally be transferred to a Network Perinatal Centre or an appropriate Neonatal Unit.

HFOV, ECMO and Nitric Oxide: Babies who are likely to require HFOV, ECMO or Nitric Oxide will need to be transferred to a specialist centre and early consideration should be given to this.

CPAP: Babies requiring CPAP for 5 days or longer, or who become unstable while on CPAP, will need to be discussed with the Network Perinatal Centre.

HFO2: Babies requiring HFO2 for 5 days or longer, or who become unstable while on HFO2, will need to be discussed with the Network Perinatal Centre.

PN: Babies requiring PN for 5 days or longer will need to be discussed with the Network Perinatal Centre. Where it is difficult to decide if an infant should receive PN, discussion should take place with the Network Perinatal Centre.

Surgery: Babies who require surgery or a surgical opinion will be transferred out to a neonatal surgical centre.

Cooling: Newly born babies who require cooling for treatment of perinatal asphyxia will be transferred to a Network Perinatal Centre.

Suspected Cardiac/PDA Cases: Where a possible cardiac problem is suspected, after discussion with the Cardiologist, discussion should take place with the transport consultant or the perinatal centre before transfer. This is to allow optimisation of ventilatory treatment before ambulance transfer is undertaken. Babies with PDA who require surgery must be discussed with the perinatal centre before discussion with the cardiologists, as per the agreed Network PDA pathway.

BABIES RETURNING TO QUEEN'S HOSPITAL

Babies may return to Queen's when they are clinically well and safe for transfer. Babies may return if they are still requiring CPAP, HF02 or PN, but only if it is anticipated that the need will be short term.

ANTENATAL TRANSFERS INTO QUEEN'S HOSPITAL

Women in preterm labour at or above 29^{+0} gestation will be accepted into Queen's for delivery.

REPATRIATION OF BABIES TO REFERRING UNIT

Discussion regarding repatriation must commence between Queen's and the babies referring unit as soon as the baby meets the clinical pathway threshold for that referring unit. Arrangements for repatriation should be commenced as soon as the baby is stable for transfer.

EXCEPTION REPORTING

The Network team and commissioners will expect reports on those babies that are identified from the BadgerNet database as being below 29 weeks gestation or who breach the criteria detailed above.

Reports are also expected on those babies at or above 44 corrected weeks of gestation that remain on the neonatal unit.

FETAL ANOMALY

Babies with an antenatal diagnosis of cardiac or other congenital anomaly may deliver in Royal Derby, if an agreed postnatal management plan is in place. Babies with antenatally identified surgical conditions will normally be delivered in a unit with neonatal surgery facilities. Following input from a Paediatric Cardiologist, it may also be appropriate to deliver babies with some antenatally detected cardiac problems in a cardiac or Network Perinatal Centre.

GESTATION LIMIT

Where possible, women in premature labour at less than 26^{+0} weeks gestation will be transferred to deliver in a Network Perinatal Centre. If, for whatever reason, a baby below this gestation limit is delivered in Royal Derby, the baby will be stabilised and assessed and appropriate arrangements put into place following discussion with the Network Perinatal Centre.

Under 26 weeks gestation: Any baby of less than 26^{+0} weeks gestation should normally be transferred to a Network Perinatal Centre if continuing intensive care is appropriate. If there is doubt about necessity for transfer (e.g. baby dying, baby stable and on the edge of the unit pathway threshold), there will be consultant to consultant discussion with the Network Perinatal Centre. Such exceptional cases which are treated outside of these guidelines will be monitored by the Network and Specialised Commissioners.

26 weeks gestation and above: Whether a baby of 26^{+0} gestation, and above, should remain in Royal Derby depends upon where the care needs fall within the following criteria:

CRITERIA FOR CARE AT ROYAL DERBY HOSPITAL

Complex Intensive Care: Babies requiring multi-organ support will require discussion with, and potential transfer to the Network Perinatal Centre if appropriate.

Ventilation: If a preterm baby of 26 weeks' gestation requires conventional ventilation at 72 hours of age (i.e. PIP>20 mmHg; FiO2>40%), the baby will be discussed with staff of a Network Perinatal Centre and may require transfer out to a Network Perinatal Centre. Any baby who continues to require IPPV for more than 7 days will be discussed with a Network Perinatal Centre and will usually require transport to a Neonatal Intensive Care Unit. These thresholds will be audited and may be adjusted if necessary.

HFOV, ECMO and Nitric Oxide: Babies who are likely to require HFOV, ECMO or Nitric Oxide will need to be transferred to a specialist centre and early consideration should be given to this.

CPAP: Babies requiring CPAP will remain at Royal Derby.

HF02: Babies requiring HF02 will remain at Royal Derby

PN: Babies requiring PN will be managed at Royal Derby.

Surgery: Babies who require surgery or a surgical opinion will be transferred out to a neonatal surgical centre.

Cooling: Newly born babies who require cooling for treatment of perinatal asphyxia will be transferred to a Network Perinatal Centre.

Suspected Cardiac/PDA Cases: Where a possible cardiac problem is suspected, after discussion with the Cardiologist, discussion should take place with the transport consultant or the perinatal centre before transfer. This is to allow optimisation of ventilatory treatment before ambulance transfer is undertaken. Babies with PDA who require surgery must be discussed with the perinatal centre before discussion with the cardiologist, as per the agreed Network PDA pathway.

BABIES RETURNING TO ROYAL DERBY HOSPITAL

Babies may return to Royal Derby when they are clinically well and safe for transfer. They may be transferred if they are still requiring IPPV (e.g. if extubation is anticipated soon or it is a post-operative transfer, or a transfer back from ECMO), or if the baby still requires CPAP, HF02, or PN. Babies will not be transferred back if they require HFOV.

ANTENATAL TRANSFERS INTO ROYAL DERBY HOSPITAL

Women in preterm labour at or above 26^{+0} gestation may be accepted into Royal Derby for delivery.

REPATRIATION OF BABIES TO REFERRING UNIT

Discussion regarding repatriation must commence between Royal Derby and the babies referring unit as soon as the baby meets the clinical pathway threshold for that referring unit. Arrangements for repatriation should be commenced as soon as the baby is stable for transfer.

EXCEPTION REPORTING

The Network team and commissioners will expect reports on those babies that are identified from the BadgerNet database as being below 26 weeks gestation or who breach the criteria detailed above. Exceptions will be expected where babies stay in Royal Derby but appear clinically suitable for care in the referral unit.

Reports are also expected on those babies at or above 44 corrected weeks of gestation that remain on the neonatal unit.

UNIVERSITY HOSPITALS OF LEICESTER NHS TRUST - LEICESTER GENERAL HOSPITAL

FETAL ANOMALY

Babies with an antenatal diagnosis of cardiac or other congenital anomaly may deliver at Leicester General, if an agreed postnatal management plan is in place. Babies with antenatally identified surgical conditions will normally be delivered in a unit with neonatal surgery facilities. Following input from a Paediatric Cardiologist, it may also be appropriate to deliver babies with some antenatally detected cardiac problems in a cardiac or Network Perinatal Centre.

GESTATION LIMIT

Where possible, women in premature labour at less than 32^{+0} weeks gestation will be transferred to deliver in a Network Perinatal Centre or an appropriate neonatal unit. If, for whatever reason, a baby below this gestation limit is delivered at Leicester General, the baby will be stabilised and assessed and appropriate arrangements put into place following discussion with the UHL service consultant for neonatal intensive care

Under 32 weeks gestation: Any baby of less than 32^{+0} weeks gestation should normally be transferred to a Network Perinatal Centre if continuing intensive care is appropriate. If there is doubt about necessity for transfer (e.g. baby dying, baby stable and on the edge of the unit pathway threshold), there will be consultant to consultant discussion with the Network Perinatal Centre. Such exceptional cases which are treated outside of these guidelines will be monitored by the Network and Specialist Commissioners.

32 weeks gestation and above: Whether a baby of 32^{+0} weeks gestation, and above, should remain at the Leicester General depends upon where the care needs fall within the following criteria:

CRITERIA FOR CARE AT LEICESTER GENERAL HOSPITAL

Complex Intensive Care: Babies requiring respiratory support with symptoms of additional organ failure (e.g. hypotension, DIC, renal failure, metabolic acidosis) will require transfer to the Network Perinatal Centre

Ventilation: If any baby continues to require conventional ventilation, nasal CPAP or HF02 at 4 hours of age, or is anticipated to do so, the baby will be discussed with the consultant neonatologist on service for Leicester General and will normally be transferred to a Network Perinatal Centre or appropriate Neonatal Unit.

HFOV, ECMO and Nitric Oxide: Babies who are likely to require HFOV, ECMO or Nitric Oxide will need to be transferred to a specialist centre and early consideration should be given to this.

CPAP: Babies requiring CPAP beyond 4 hours of age will need to be transferred to a Network Perinatal Centre or an appropriate Neonatal Unit.

HFO2: Babies requiring HFO2 beyond 4 hours of age will need to be transferred to a Network Perinatal Centre or appropriate Neonatal Unit.

PN: Babies requiring PN will need to be transferred to a Network Perinatal Centre or an appropriate Neonatal Unit. Where it is difficult to decide if an infant should receive PN or if transfer back to Leicester General is otherwise appropriate and the requirement for PN is reducing, discussion should take place with the Network Perinatal Centre or an appropriate Neonatal Unit prior to either starting PN or transferring back.

Surgery: Babies who require surgery or a surgical opinion will be transferred out to a perinatal surgical centre.

Cooling: Newly born babies who require cooling for treatment of perinatal asphyxia will be transferred to a Network Perinatal Centre.

Suspected Cardiac/PDA Cases: Where a possible cardiac problem is suspected, after discussion with the Cardiologist, discussion should take place with the transport consultant or the perinatal centre before transfer. This is to allow optimisation of ventilatory treatment before ambulance transfer is undertaken. Babies with PDA who require surgery must be discussed with the perinatal centre before discussion with the cardiologists, as per the agreed Network PDA pathway.

BABIES RETURNING TO LEICESTER GENERAL HOSPITAL

Babies may return to Leicester General when they are clinically well and safe for transfer. Babies may not return if they are still requiring CPAP, HF02, PN or ventilation.

ANTENATAL TRANSFERS INTO LEICESTER GENERAL HOSPITAL

Women in preterm labour at or above 32^{+0} gestation may be accepted into Leicester General for delivery.

REPATRIATION OF BABIES TO REFERRING UNIT

Discussion regarding repatriation must commence between Leicester General and the babies referring unit as soon as the baby meets the clinical pathway threshold for that referring unit. Arrangements for repatriation should be commenced as soon as the baby is stable for transfer.

EXCEPTION REPORTING

The Network team and commissioners will expect reports on those babies that are identified from the BadgerNet database as being below 32 weeks gestation or who breach the criteria detailed above.

Reports are also expected on those babies at or above 44 corrected weeks of gestation that remain on the neonatal unit.

UNIVERSITY HOSPITALS OF LEICESTER NHS TRUST - LEICESTER ROYAL INFIRMARY (SOUTH HUB PERINATAL CENTRE)

FETAL ANOMALY
Babies with an antenatal diagnosis of cardiac or other congenital anomaly will deliver in the Leicester Royal, if an agreed postnatal management plan is in place. Babies with antenatally identified surgical conditions will normally be delivered at Leicester Royal. Following input from a Paediatric Cardiologist, it is appropriate to deliver antenatally detected cardiac problems in a cardiac centre.

GESTATION LIMIT
As a Network Perinatal Centre, the Leicester Royal shall treat babies of the entire gestational age spectrum. It is accepted that some babies may be born 'previable' and thus will not be actively resuscitated.

CRITERIA FOR CARE AT LEICESTER ROYAL INFIRMARY

Complex Intensive Care:	Babies requiring respiratory support with symptoms of additional organ failure (e.g. hypotension, DIC, renal failure, metabolic acidosis) will remain at the Leicester Royal.
Ventilation:	Babies receiving all ventilatory modalities shall be suitable for treatment at the Leicester Royal.
HFOV:	Babies who require HFOV will be assessed and remain at the Leicester Royal.
ECMO:	Babies who require ECMO will need to be transferred to an ECMO centre.
Nitric Oxide:	Term babies who need iNO will be managed at the Leicester Royal. Failure to respond will be discussed with an ECMO centre and early consideration should be given to this.
CPAP:	Babies requiring CPAP will remain at the Leicester Royal.
HFO2:	Babies requiring HFO2 will remain at the Leicester Royal.
PN:	Babies requiring PN will be managed on the Leicester Royal.
Surgery:	Babies who require surgery or a surgical opinion will be managed at the Leicester Royal.
Cooling:	Newly born babies who require cooling for treatment of perinatal asphyxia will be managed at the Leicester Royal.
Suspected Cardiac/PDA Cases:	Where a possible cardiac problem is suspected, after discussion with the Cardiologist, discussion should take place with the transport consultant or the perinatal centre before transfer. This is to allow optimisation of ventilatory treatment before ambulance transfer is undertaken.

BABIES RETURNING TO LEICESTER ROYAL INFIRMARY
Babies may return to Leicester Royal when clinically stable for transfer.

ANTENATAL TRANSFERS INTO LEICETER ROYAL INFIRMARY
Except in the presence of known severe antenatally detected surgical problems (where delivery in a supra-specialist centre is recommended), all women may be considered for delivery at the Leicester Royal.

REPATRIATION OF BABIES TO REFERRING UNIT

Discussion regarding repatriation must commence between the Leicester Royal and the babies referring unit as soon as the baby meets the clinical pathway threshold for that referring unit. Arrangements for repatriation should be commenced as soon as the baby is stable for transfer.

EXCEPTION REPORTING

The Network team and commissioners will expect reports on those babies that are identified from the BadgerNet database as meeting the referring hospitals threshold level but are not repatriated and remain at the Leicester Royal.

Reports are also expected on those babies at or above 44 corrected weeks of gestation that remain on the neonatal unit.

UNITED LINCOLNSHIRE HOSPITALS NHS TRUST - LINCOLN COUNTY HOSPITAL

FETAL ANOMALY

Babies with an antenatal diagnosis of cardiac or other congenital anomaly will deliver in Lincoln County, if an agreed postnatal management plan is in place. Babies with antenatally identified surgical conditions will normally be delivered in a unit with neonatal surgery facilities. Following input from a Paediatric Cardiologist it may also be appropriate to deliver babies with some antenatally detected cardiac problems in a cardiac or Network Perinatal Centre.

GESTATION LIMIT

Where possible, women in premature labour at less than 27^{+0} weeks gestation will be transferred to deliver in a Network Perinatal Centre. If, for whatever reason, a baby below this gestation limit is delivered in Lincoln County the baby will be stabilised and assessed and appropriate arrangements put into place following discussion with the Perinatal Centre.

***Under 27 weeks gestation*:** Any baby of less than 27^{+0} weeks gestation should normally be transferred to a Network Perinatal Centre if continuing intensive care is appropriate. If there is doubt about necessity for transfer (i.e. baby dying, baby stable and on the edge of the unit pathway threshold) there will be consultant to consultant discussion with the Network Perinatal Centre. Such exceptional cases which are treated outside these guidelines will be monitored by the Network and Specialised Commissioners.

***27 weeks gestation and above*:** Whether a baby of 27^{+0} weeks gestation, and above, should remain in Lincoln County depends upon where the care needs fall within the following criteria:

CRITERIA FOR CARE AT LINCOLN COUNTY HOSPITAL

Complex Intensive Care: Babies requiring respiratory support with symptoms of additional organ failure (e.g. hypotension, DIC, renal failure, metabolic acidosis) will require transfer to the Network Perinatal Centre.

Ventilation: If a preterm baby of 27 weeks' gestation requires conventional ventilation at 24 hours of age, the baby will be discussed with staff of a Network Perinatal Centre and normally be transferred to a Network Perinatal Centre or an appropriate Neonatal Unit.

HFOV, ECMO and Nitric Oxide: Babies who are likely to require HFOV, ECMO or Nitric Oxide will need to be transferred to a specialist centre and early consideration should be given to this.

CPAP: Babies requiring CPAP will remain at Lincoln County.

HF02: Babies requiring HF02 will remain at Lincoln County.

PN: Babies requiring PN will be managed at Lincoln County.

Surgery: Babies who require surgery or a surgical opinion will be transferred out to a surgical centre.

Cooling: Newly born babies who require cooling for treatment of perinatal asphyxia will be transferred to a Network Perinatal Centre.

Suspected Cardiac/PDA Cases: Where a possible cardiac problem is suspected, after discussion with the Cardiologist, discussion should take place with the transport consultant or the perinatal centre before transfer. This is to allow optimisation of ventilatory treatment before ambulance transfer is undertaken. Babies with PDA who require surgery must be discussed with the perinatal centre before discussion with the cardiologist, as per the agreed Network PDA pathway.

BABIES RETURNING TO LINCOLN COUNTY HOSPITAL

Babies may return to Lincoln County when they are clinically well and safe for transfer. They may be transferred if they are still requiring CPAP or PN but not if they have on-going ventilation requirements.

ANTENATAL TRANSFERS INTO LINCOLN COUNTY HOSPITAL

Women in preterm labour at or above 27^{+0} gestation may be accepted into Lincoln County for delivery.

REPATRIATION OF BABIES TO REFERRING UNIT

Discussion regarding repatriation must commence between Lincoln County and the babies referring unit as soon as the baby meets the clinical pathway threshold for the referring unit. Arrangements for repatriation should be commenced as soon as the baby is stable for transfer.

EXCEPTION REPORTING

The Network team and commissioners will expect reports on those babies that are identified from the BadgerNet database as being below 27 weeks gestation or who breach the criteria detailed above. Exceptions will be expected where babies stay in Lincoln County but appear clinically suitable for referral back to the home unit.

Reports are also expected on those babies at or above 44 corrected weeks of gestation that remain on the neonatal unit.

UNITED LINCOLNSHIRE HOSPITALS NHS TRUST – PILGRIM HOSPITAL, BOSTON

This is an interim pathway which was implemented on the 03 August 2018. It will be reviewed weekly and may be subject to an immediate change. Any changes will be communicated to all Neonatal and Maternity units within the EMNODN.

FETAL ANOMALY

Babies with an antenatal diagnosis of cardiac or other congenital anomaly will deliver in Pilgrim, if an agreed postnatal management plan is in place. Babies with antenatally identified surgical conditions will normally be delivered in a unit with neonatal surgery facilities. Following input from a Paediatric Cardiologist it may also be appropriate to deliver babies with some antenatally detected cardiac problems in a cardiac or Network Perinatal Centre.

GESTATION LIMIT

Where possible, women in premature labour at less than 34^{+0} weeks gestation will be transferred to deliver in a Network Perinatal Centre or appropriate Neonatal Unit. If, for whatever reason, a baby below this gestation limit is delivered at Pilgrim the baby will be stabilised and assessed and appropriate arrangements put into place following discussion with the Perinatal Centre.

***Under 34 weeks gestation*:** Any baby of less than 34^{+0} weeks gestation should normally be transferred to a Network Perinatal Centre or appropriate Neonatal Unit. If there is doubt about necessity for transfer (i.e. baby dying, baby stable and on the edge of the unit pathway threshold), there will be Consultant to Consultant discussion with the Network Perinatal Centre. Such exceptional cases which are treated outside these guidelines will be monitored by the Network and Specialised Commissioners.

***34 weeks gestation and above*:** Whether a baby of 34^{+0} weeks gestation, and above, should remain in Pilgrim depends upon where the care needs fall within the following criteria:

CRITERIA FOR CARE AT PILGRIM HOSPITAL

Complex Intensive Care: Babies requiring respiratory support with symptoms of additional organ failure (e.g. hypotension, DIC, renal failure, metabolic acidosis) will require transfer to the Network Perinatal Centre.

Ventilation: If any baby continues to require conventional ventilation at 4 hours of age, or is anticipated to do so, the baby will be discussed with the consultant neonatologist on service for the Network Perinatal Centre and will normally be transferred to a Network Perinatal Centre or an appropriate Neonatal Unit.

HFOV, ECMO and Nitric Oxide: Babies who require HFOV, ECMO or Nitric Oxide will need to be transferred to a specialist centre and early consideration should be given to this.

CPAP: Babies requiring CPAP beyond 12 hours of age will normally be transferred after a discussion with the Network Perinatal Centre to the Network Perinatal Centre or an appropriate neonatal unit.

HF02: Babies requiring HF02 beyond 12 hours of age, as described above, will normally be transferred after a discussion with the Network Perinatal Centre to the Network Perinatal Centre or an appropriate neonatal unit.

PN: Babies requiring PN will need to be transferred to a Network Perinatal Centre or an appropriate Neonatal unit. Where it is difficult to decide if an infant should receive PN then a discussion should take place with the Network Perinatal Centre.

Surgery: Babies who require surgery, or a surgical opinion for NEC, will be transferred out to a surgical centre.

Cooling: Newly born babies who require cooling for treatment of perinatal asphyxia will be transferred to a Network Perinatal Centre.

Suspected Cardiac/PDA Cases: Where a possible cardiac problem is suspected, after discussion with the Cardiologist, discussion should take place with the transport consultant or the perinatal centre before transfer. This is to allow optimisation of ventilatory treatment before ambulance transfer is undertaken. Babies with PDA who require surgery must be discussed with the perinatal centre before discussion with the cardiologist, as per the agreed Network PDA pathway.

BABIES RETURNING TO PILGRIM HOSPITAL

Babies may return to Pilgrim when they are clinically well and safe for transfer and have reached 34 weeks corrected gestation. Babies may not return if they still require HF02, CPAP, or PN or have on-going ventilation requirements.

ANTENATAL TRANSFERS IN TO PILGRIM HOSPITAL

Women in preterm labour at or above 34^{+0} gestation may be accepted into Pilgrim for delivery.

REPATRIATION OF BABIES TO REFERRING UNIT

Discussion regarding repatriation must commence between Pilgrim and the babies referring unit as soon as the baby meets the clinical pathway threshold for the referring unit. Arrangements for repatriation should be commenced as soon as the baby is stable for transfer.

EXCEPTION REPORTING

The Network team and commissioners will expect reports on those babies that are identified from the BadgerNet database as being below 34 weeks gestation, or who breach the criteria detailed above.

Reports are also expected on those babies at or above 44 corrected weeks of gestation that remain on the neonatal unit.

LIST OF ABBREVIATIONS

CPAP	Continuous Positive Airway Pressure
DIC	Disseminated Intravascular Coagulation
ECMO	Extracorporeal Membrane Oxygenation
HF02	High Flow Oxygen
HFOV	High Frequency Oscillatory Ventilation
IPPV	Intermittent Positive Pressure Ventilation
NEC	Necrotising Enterocolitis
PDA	Persistent Ductus Arteriosus
PN	Parenteral Nutrition