# Southampton Oxford Neonatal Transport Guideline

**Thames Valley Management of Bilious Vomiting in ≥ 34 weeks gestation**

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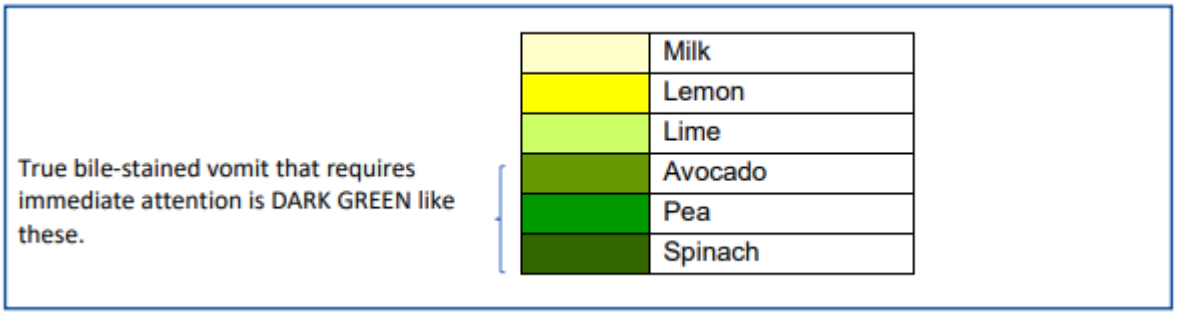
## Introduction

Bilious vomiting in the newborn in the first few postnatal days has always been regarded as an important clinical sign which could indicate underlying pathology although it can also be seen in babies without pathology. It can be a sign of GI obstruction and importantly can be an indicator of malrotation / volvulus.

Bilious vomiting is when there is a significant (more than just a spot or two on the sheets) quantity of green (usually dark green) not yellow vomit. Whilst yellow vomit may not indicate obstruction persistent yellow vomiting may also need investigating. The following is also helpful




*Taken from 2024 BAPM Framework for Management of Bilious Vomiting in the Newborn Period*

## Section A: Assessment and Transfer

Following the 2024 BAPM framework for *Management of Bilious Vomiting in the Newborn Period* the criteria for transfer of babies with bilious vomiting have been adjusted.

Please follow following guidance when a ≥ 34 week gestation baby presents with bilious vomiting in immediate postnatal period.

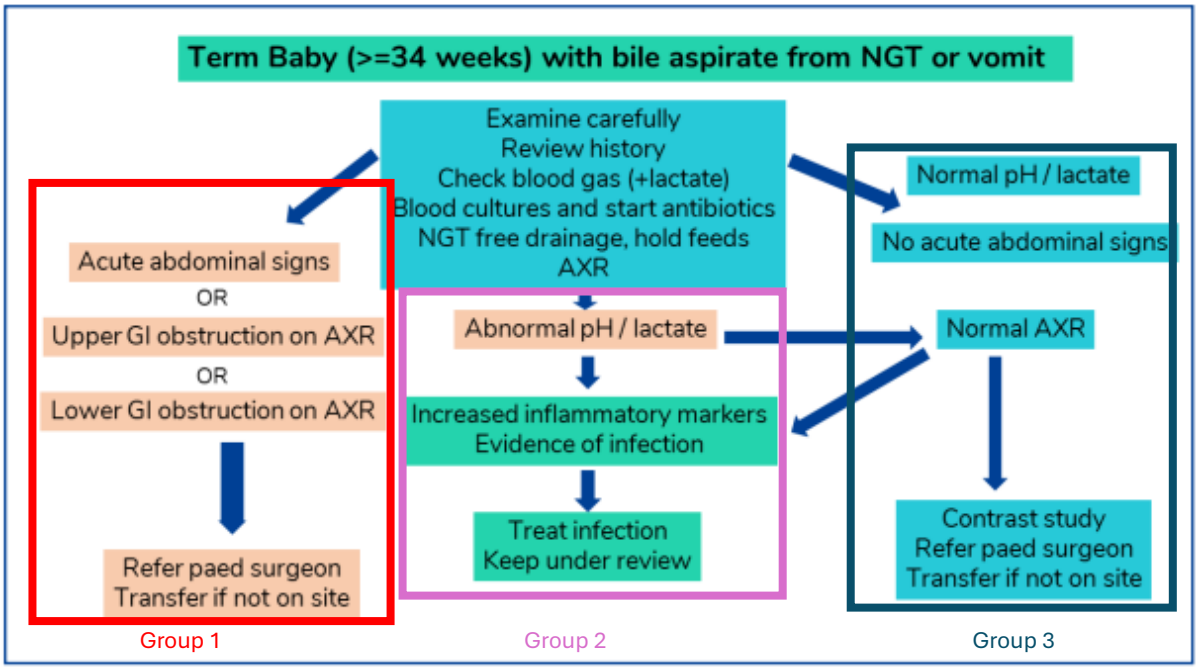
1) Initial assessment (by registrar or consultant);
- Examine carefully
- Is there a normal anus?
- Was there a delay in passage of meconium?
- Normal antenatal scans?
- Review pregnancy and birth history: meconium-stained liquor (which may have been swallowed), risk factors for infection (e.g.' PROM, maternal infection, chorioamnionitis).
- Insert a large bore nasogastric tube (if not already in place)

- Perform a plain abdominal x-ray (after NGT insertion)
- Check bloods (including blood cultures, blood gas and CRP (repeat after 24 hours))
- Commence antibiotics
- Consider commencing IV fluids if there will be a significant delay and low threshold for saline bolus if signs of hypovolaemia.
- Assess pain and initiate analgesia measures as required.

2) Conference call with referring consultant, paediatric surgeon on call, neonatal transport consultant, neonatal transport registrar and neonatal transport nurse via SONeT Hub

3) Decision at conference call which group the baby falls into and subsequent management;

**Section B: Group Categorisation**




*Taken from 2024 BAPM Framework for Management of Bilious Vomiting in the Newborn Period*

Group 1:

"Babies require urgent surgical review"- Immediate Dispatch/Time critical referral

If there are any of following signs that indicate an acute abdominal pathology, the baby needs consideration of immediate dispatch (time critical) transfer to OUH

- Abdominal signs (tenderness, distension +/- abnormal lactate) OR
- Abnormal abdominal x ray (lower/upper GI obstruction, perforation, NEC)

A contrast may not be required if Xray confirms the diagnosis or baby acutely unwell, and baby may need transfer from LNU directly to theatre at OUH.

Group 2:

"Babies where another diagnosis is likely"- Treat Infection and review need for contrast

Where there is a normal examination and AXR but with evidence of infection (increase in CRP or WCC/positive blood culture) then;

- Continue antibiotics and re evaluate after initial treatment
- If bilious vomiting persists after treatment for infection then likely to need a non-time critical contrast study to rule out malrotation. Drive through contrast may be possible; see below.

Group 3:

"Babies who require a contrast study" –OUH contrast study (<24 hour transfer) or local contrast study

Babies with no other diagnostic features (normal AXR, normal or only minimally abnormal examination and no evidence of infection) then a non-time critical contrast study is needed to rule out malrotation. If the baby is stable with no evidence of acute abdominal pathology it does not need to be an immediate transfer (categorised as an "urgent < 24 hour transfer"). Drive through contrast study may be possible; see below.

This transfer can be carried out as a nurse only transfer.

If the contrast study can be done in LNU this can avoid need for transport to OUH.

**Section C; OUH Drive Through Contrast Process for Bilious Vomiting**

**Criteria**
⇒ >34+0 weeks + >1.6kg
⇒ No abnormalities noted
⇒ Normal abdominal examination **by SONeT**
⇒ Otherwise well
⇒ In Thames Valley and Wessex region only

**Checklist**
⇒ Imaging transferred
⇒ 2 x Large bore PVL's
⇒ IV fluids (50ml syringe)
⇒ Large bore NGT on free drainage
⇒ Maternal bloods taken
⇒ IV antibiotics given
⇒ Bloods + Gas taken

**Ensure**
⇒ Bed kept at referring hospital
⇒ Newborn Care/Tom's bed available + nurse allocated in case of admission/Unplanned referral
⇒ You have the contrast drugs pack
⇒ Transport Registrar present for contrast
⇒ ITU trolley (William/Dave) used for transfer

**Suspected bowel obstruction - General management principles:**
⇒ Variable presentation – bilious vomiting ± abdominal distension. May present as episodic obstruction or acutely with profound shock as result of volvulus.
⇒ Urgent communication with Surgical team and proceed as instructed.
⇒ Commence continuous cardiorespiratory and oxygen saturation monitoring.
⇒ Provide respiratory support for babies whose condition deteriorates.
⇒ Carefully assess patient for signs of hypovolaemia - low threshold for giving normal saline bolus.
⇒ Assess pain and initiate analgesic measures as required.

C. Bailey/ S. Lloyd/ E Adams/K Wood/ D Rukshani Gamage/H Bajaj for SONeT, V3. Oct 2024. Review Oct 2027

Main changes: Addition of guidance from BAPM framework

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**Nurse Only Transfer – Uplift to Contrast must fulfil all below requirements/ and Nurse confident to do so:**

⇒No respiratory support (including oxygen)

⇒No blood pressure support required

⇒No abdominal findings of concern on clinical examination (mild abdominal distension with otherwise soft abdomen is acceptable for nurse transfer)

⇒ AXR findings are not strongly suggestive of surgical pathology

⇒ SONeT Registrar/ANNP to meet team in contrast

Please discuss with SONeT Transport Consultant if there is uncertainty regarding personnel required or there are changes to the baby's condition after the team have dispatched.

**Drive Through Contrast Process:**

- Referral process as per "Neonatal Surgical Referral Pathway" in Hub
- Team discussion with Surgical Registrar as to whether a Drive Through Contrast would be appropriate. All teams must agree to ensure the process runs smoothly.
- Collect the patient as an Unplanned Local Immediate (<6 hrs) transfer. SONeT to assess abdomen and patient condition, does Drive Through Contrast remain the correct pathway for this patient?
- As soon as you leave the DGH, contact Hub with patients NHS Number, DOB, Gender, Address and Mothers details to create an MRN (see "Drive Through Contrast – A Ward Clerks Guide").
- SONeT team to contact 1820 bleep, surgical reg on call via Hub to discuss case and inform them of ETA at John Radcliffe. Surgical Registrar to then liaise with Radiology team and book contrast
- SONeT ambulance to park at back entrance to the Children's Hospital, unload and proceed directly to radiology department (see attached map), where they will meet the Surgical Registrar and Radiologist.
- Once contrast complete, Surgical Registrar to examine baby.
- If satisfied that the baby is well, complete and print EPR notes and inform Referring Consultant and parents of results and plan. SONeT reloads, completes observations and contacts Hub for a planned transfer number for repatriation.
- If the Surgeon has concerns, patient to be transferred by SONeT to the most appropriate location (may be theatres or pre allocated bed in NNU or Tom's).
- Handover from Day/Night team can happen pre or post contrast as needed.

C. Bailey/ S. Lloyd/ E Adams/K Wood/ D Rukshani Gamage/H Bajaj for SONeT, V3. Oct 2024. Review Oct 2027

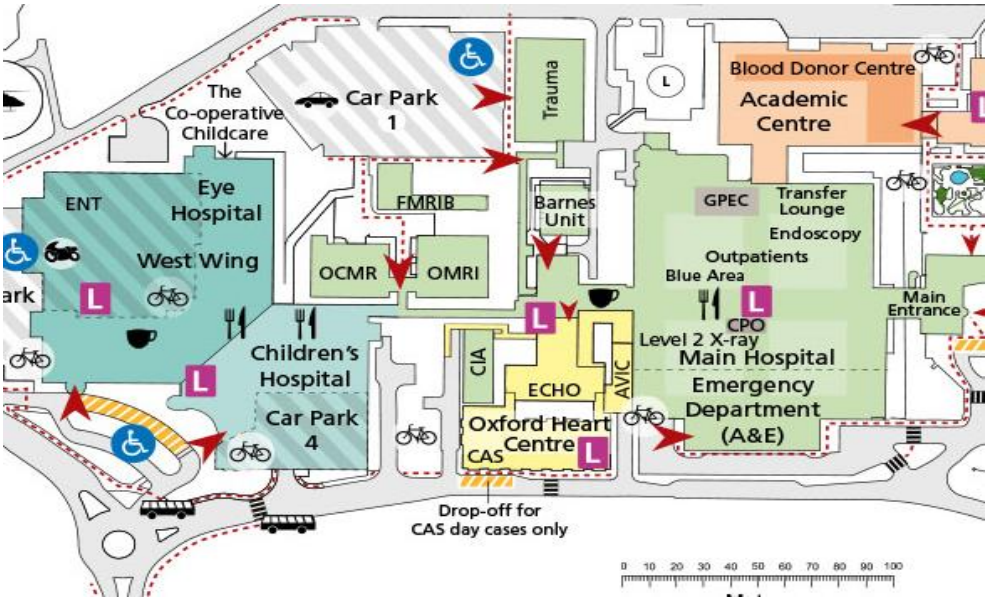
Main changes: Addition of guidance from BAPM framework

**Return Transfer:**

⇒ Complete new set of planned transfer paperwork
⇒ Can be nurse only
⇒ Can be done at night
⇒ Surgical report to be photocopied and maintained in SONeT paperwork and patients notes

**If a SONeT Referral is taken during Drive Through:**

⇒ Hub to inform transport team immediately if an Unplanned referral is taken at any stage.
⇒ Patient to be handed over to NBC/Tom's ward for completion of contrast and admission of patient.
⇒ Transport equipment to stay with patient during contrast, second ITU trolley to be used for Unplanned transfer.




**Section D: Requesting emergency ambulance from South Central Ambulance Service (if SONeT unavailable)**

In the rare event that SONeT team (either from Thames Valley or Wessex) is not immediately available for an immediate dispatch/time critical transfer then consideration can be given to requesting an ambulance through South Central Ambulance Service (SCAS).

Any clinician in Thames Valley region can ring and request relevant urgency level (inter facility transfer (IFT):

0300 123 9826 or 0300 123 9822 (for level 1 request)

**IFT Level 1 (7 Minute mean response time)**

Exceptional circumstances when a facility is unable to provide immediate life-saving clinical intervention such as resuscitation and requires the clinical assistance of the ambulance service in addition to a transporting resource

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Main changes: Addition of guidance from BAPM framework

**IFT Level 2 (18 Minute mean response time)**

Immediately Life, Limb or Sight (Globe trauma) Threatening (ILT) situations which require immediate management in another facility should receive this level of response. For instance, patients going directly to theatre at the new facility.

**IFT Level 3 (IFT 3) 1 or 2 hour locally commissioned response**

This level may be requested for patients who require urgent transfer between acute hospitals. Examples may be patients who require urgent investigations to inform ongoing care.