

Miss Anna Crawford
HM Assistant Coroner for Surrey

Sent Via Email

7 January 2021

Dear Miss Crawford,

Re: The Inquest Touching the Death of Master Yo Li. A Regulation 28 Report – Action to Prevent Future Deaths

Many thanks for contacting the British Association of Perinatal Medicine (BAPM) about the sad death of Master Yo Li. Having read the Regulation 28 report, I wish to offer the following statement on behalf of BAPM.

BAPM is a voluntary professional organisation whose mission is to improve standards of perinatal care in the UK. This is undertaken by supporting all those involved in perinatal care to optimise their skills and knowledge, deliver and share high quality, safe and innovative practice, undertake research, and promote the needs of babies and their families.

Among BAPM's resources are a series of Frameworks for Practice (FfPs) which, following review of the literature, are written by multi-professional, voluntary working groups and published on our website after national consultation. Our FfPs are therefore evidence-based, consensus documents: specifically they are not guidelines, but as you note, guidance. This makes them highly suitable to inform local guidelines and protocols appropriate for individual neonatal units and/or networks. BAPM FfPs are reviewed regularly and updated if new evidence has become available.

The BAPM FfP for the use of Central Venous Catheters in Neonates (last updated August 2018) was written in response to a Coroner's inquest and concurrent contact from the local MP following a case of fatal CVC associated extravasation. The Framework aimed to reduce harm and improve safety as a national survey revealed wide variation in practices around central venous (including umbilical) catheter insertion and management.

The current FfP notes that "the use of central venous catheters (CVCs) is an essential part of neonatal care allowing delivery of intravenous fluids and medication. The use of these catheters is associated with a number of complications. Whilst catheter-associated

infection is well recognised and subject to scrutiny, extravasation into a body cavity is less common but potentially fatal if tamponade ensues.”

The stated aims of the FfP are to provide practice points to:

- Address aspects of insertion, on-going use and care of CVCs in the neonatal setting
- Improve the uniformity and standard of CVC care nationally
- Reduce the incidence of complications associated with the use of CVCs
- Highlight early recognition of the rare but potentially fatal complication of extravasation into a body cavity.

Additionally, the Executive Summary makes the following recommendations:

- Any clinical deterioration of a baby in whom a central venous catheter is present should raise the question of catheter-related complications, particularly infection, extravasation and tamponade.
- All central catheter tips should be positioned outside the cardiac silhouette.
- An umbilical venous catheter (UVC) tip should ideally be sited at T8-T9 (assuming this lies outside the cardiac silhouette). A UVC tip sited at or below T10 carries a significantly higher risk of extravasation. It may be necessary to use these catheters in the short term, but they should be replaced at the earliest opportunity.

The key points to be considered are:

- a) The risk of extravasation from a UVC and
- b) The early recognition of potential extravasation.

The BAPM Framework deals very explicitly with the latter point, and we would respectfully contend that in the case of Master Yo Li, the likelihood of extravasation was not promptly recognised by the attending clinical team.

In regard to placement of the UVC, it is very well recognised that the predicted track of a UVC is directly upwards through the ductus venosus towards the diaphragm. Any deviation from this should raise concern that the UVC has entered a hepatic or portal vessel, with consequent increased risk of extravasation. We would expect all senior neonatal clinicians (and indeed all but the most inexperienced of trainees) to be aware of this. Importantly, it must be noted that extravasation from a UVC is possible even if the X-ray findings are entirely acceptable.

I draw your attention particularly to 3 of the 20 good practice points contained within the BAPM Framework:

3. Units which use central catheters should have a formal training package for insertion of catheters which should include an assessment of technical competence and awareness of potential complications.

16. There should be thorough contemporaneous documentation of each central catheter insertion including indication, description of the catheter itself, number of attempts, length inserted, position on X-ray, and any adjustments subsequently made. The accepted position should be verified in writing within 24 hours of insertion by a consultant neonatologist/paediatrician or from a radiologist's report.

19. Any clinical deterioration of a baby in whom a central venous catheter is present should raise the question of catheter-related complications, particularly infection, extravasation and tamponade.

While we agree wholeheartedly with your recommendation that there should be a requirement on NHS Trusts to ensure that their clinicians are familiar with the current BAPM FfP for the use of Central Venous Catheters in Neonates, with the greatest of respect we contend that the suggested amendment is unnecessary and could not be guaranteed to prevent a recurrence of the incident described which led to the sad death of Master Yo Li.

I would be very happy to discuss this further with you should you wish.

Yours sincerely

[Redacted signature]

[Redacted name] **President, BAPM**

On behalf of BAPM Executive Committee

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