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[redacted]

13 January 2022

Mrs Heidi J Connor
HM Senior Coroner for Berkshire
Coroner's Office
Reading Town Hall
Blagrave Street
Reading
RG1 1QH

[redacted]

Dear Mrs Connor

Regulation 28 Report / Prevention of Future Deaths

Inquest into the Death of Saif Mubeen Hussain

Thank you for your letter dated 25 November 2021 with the enclosed Prevention of Future Death Report. I am sorry that you have had cause to write to the Trust in this manner. We have reviewed the concerns raised in your letter and set out below our response:

1. <u>A single system for record keeping and monitoring</u>

The Trust acknowledges there are multiple clinical systems making up the electronic patient record in the organisation. We accept the need to rationalise the number of clinical systems in use across our critical care units. This is likely to take to take at least two years to consider and implement.

In the intervening period additional mitigations have been taken to address the identified risk and improve patient safety when a patient is moved from one intensive care unit to another.

Clinical staff will be required to undertake a checklist to execute a safe handover. There are already procedures in place to mitigate for any loss of information on transfer from a CareVue using area (Adult Intensive Care Unit) to a Cerner using area (Neurosciences Intensive Care Unit) of the Trust. These include transcription of the CareVue drug chart into the Cerner system, the production of an intensive care discharge summary within the Cerner system, and more recently (July 2021) the automated upload of clinical notes generated within the CareVue system into the Cerner system. The last of these procedures has been put in place since Mr Hussain's death.

2. **How the system could incorporate appropriate limits on the administration of certain drugs within that system**

The Trust accepts the need to strengthen the decision support tools within the current clinical systems. We are looking to further improve the embedded system rules regarding drug prescription and administration.

We have identified the need for the implementation of a 'closed loop' solution, that will remove some human elements of drug administration. The complete technical solution will be dependent on the rationalisation of the clinical systems into a single system (see point 1 above). The future single clinical system procurement process will include specifications to cover the automation of drug prescription to administration.

3. **Whether software like Guardrails should be implemented more widely, and consideration given to when and how it is possible to override this, and how that should then be documented.**

The Trust is in the process of implementing infusion pumps with inbuilt dose error reduction software (DERS) throughout all clinical areas. Once the project has successfully been completed, clinical areas which use infusion pumps will utilise a medication library to infuse their drugs, if appropriate.

The roll out schedule is such that all clinical areas will receive new infusion pumps by the end of the 2023 calendar year. The schedule has been prioritised based on each areas perceived risks, determined by factors such as clinical need, status and quantity of working equipment and staffing limitations which may affect training and implementation.

Each medication library will contain a list of medications with specified concentrations and/or dosing safety limits to reduce the risk of infusion related incidents e.g., overdosing or underdosing. Resource will be allocated to ensure that medication entries on the libraries are accurate, relevant, and appropriate so that staff should not need to override safety limits if following usual practice; the software is designed not to be overridden if inappropriate dosing is entered outside of the safe limits put in place.

However, in some exceptional circumstances outside the norm, it may be necessary for patient care to deviate from the specified dosing limits and therefore the infusion pumps offer the capability to infuse medication outside of the library where safety limits are not imposed. Staff will be educated that they must not work outside of the medication library unless in exceptional circumstances and an escalation process will be devised to enable a clear audit trail of all communication and decisions made between staff members which will be documented in the patients' medical notes. This will be detailed in a standard operating procedure and will contain a flowsheet of the escalation process as a quick reference guide for staff members. A working group has been set up on NICU, who already use a medication library, to trial this.

4. **Adopting a system of flagging up where prescription and administration of drugs is different.**

Many drugs delivered as infusions in critical care areas must have their infusion rates constantly adjusted to maintain physiological stability. As such, it is impractical for prescriptions to be changed to match the infusion rate each time the rate is altered by the bedside nurse.

The issue raised refers to the current situation where a user can input a value for a drug infusion rate into the iView infusion section of the Cerner clinical system chart without any limits. This was identified as a contributing factor in the drug dosing error associated with Mr Hussain's care.

In the short term, we are investigating the possibility of developing a system which would put limits on the values which could be entered in this section of the chart for a select

number of drugs with narrow dose safety profiles. This would initially include heparin, argatroban, vancomycin and insulin.

In addition, the Trust is in the process of introducing new infusion pumps across all sites. One of the requirements for the procurement of these pumps was that they should allow bi-directional communication between the pumps and the Cerner clinical system. This would allow auto-programming of the pump from the electronic prescription and would automatically update the hourly infusion rate recorded in the iView infusion section of the drug chart. If the bi-directional communication capability of these pumps were to be used, this would significantly reduce the volume of manually entered data and remove the risk of transcription errors by bedside nurses when programming pumps or recording infusion rates.

The Trust is looking at facilitating and funding this element of the new pump roll out in order to improve patient safety around administration of drug infusions in critical care.

A second benefit of the new pumps is that each pump will contain a drug library. This is a database of drugs which aims to reduce the risk of underdosing or overdosing a drug. This forms part of the drug error reduction system described in point 3.

I hope this response will help to assure you that the Trust is taking steps to review and explore clinical system options to improve patient safety in the areas you have identified.

I would be grateful if a copy of this response can be shared with Mr Hussain's family.

Yours sincerely

Dr [redacted]
Chief Executive Officer