

Our ref: [REDACTED]
Date: 29 April 2021

Private and Confidential

Dr Séan Cummings
Assistant Coroner for Milton Keynes
The Coroner's Office
Civic Offices
1 Saxon Gate East
Central Milton Keynes
MK9 3EJ

Dear Dr Cummings

Regulation 28: Report to Prevent Future Deaths

I am writing to you following receipt of a Regulation 28 report dated 28 March, subsequent to the Inquest held by you on 02 February into the death of Mr Nicholas Rousseau who died in October 2019. Mr Rousseau died from acute bowel ischaemia. He had attended the Emergency Department at the hospital on two occasions in the week prior to his death.

On the first attendance, a venous blood gas had been taken which demonstrated that Mr Rousseau had a blood lactate level of 3.9 mmol/L. The Regulation 28 report highlights conflicting accounts given by two senior members of the medical staff in relation to the importance that should have been placed upon this result and the actions, if any, that it should have prompted. Specifically, you assert that an elevated blood lactate level on presentation should have been repeated (referencing **NICE Sepsis Risk Stratification Tools**).

Before coming to the substantive matter of blood lactate levels, I would like to take this opportunity to extend my condolences and sympathies to Mr Rousseau's family. I am conscious that any sense of divergence in view, at Inquest, between HM Coroner and attending physicians will have added to the family's distress. I am not clear from the Regulation 28 report whether you consider that an alternative course of action regarding the measurement of blood lactate might have afforded an opportunity to alter the subsequent clinical course and Mr Rousseau's untimely death. For avoidance of doubt, we do not consider this likely.

There are several pertinent points in relation to the issues that you raise:

- Ultimately it has been determined that Mr Rousseau died from ischaemic bowel and therefore it might be postulated that his presentations on 03 and 05 October were related. Mr Rousseau did not have risk factors for either acute or chronic mesenteric ischaemia. The predominant symptom on 03 October was vomiting and on 05 October, it was vomiting and diarrhoea with abdominal pain. Had his blood lactate level been rechecked on 03 October, it seems likely (given the normal levels on 05 October) that it would have been improving. In the absence of abdominal pain, it is very unlikely that the attending physician would have considered that a CT scan of the abdomen would have been indicated, still less a mesenteric angiogram.
- Whilst it is taught that ischaemic bowel can be a cause of elevated blood lactate levels, this is a non-specific marker. Elevations in blood lactate level may also occur in association with dehydration.
- It is important to note that Mr Rousseau did not have sepsis at the time of either of his presentations to the Emergency Department. Whilst I was not present at the Inquest and have not been privy to a detailed account of discussions, I wonder if clinical colleagues were surprised by a granular discussion on '*blood lactate and sepsis guidelines*' in relation to the case of a patient who was not thought to have had sepsis and who subsequently died from bowel ischaemia.
- The NICE guideline ***Sepsis: recognition, diagnosis, and early management (NG51, 13 September 2017)*** defines several markers of high risk in those presenting with suspected sepsis ('high risk criteria'). These include: altered mental state; respiratory rate >25 per minute; systolic BP <90mmHg; and, HR > 130bpm. There are paired risk stratification tools (flowcharts) accompanying this guidance, to which you refer.

The guideline notes that an elevated blood lactate level can be a marker of the severity of sepsis and is associated with poor outcome. It is therefore an important test to be undertaken on patients presenting with suspected sepsis and can influence subsequent assessment, treatment, and monitoring. The NICE guideline describes a lactate over 4mmol/L as being of heightened concern in a patient presenting with suspected sepsis. A lactate of between 2 and 4mmol/L is regarded as an intermediate level. The NICE guideline does not make any specific reference to repeated or serial measurements other than implicitly – if a person with suspected sepsis and any high-risk criteria fails to respond within an hour of initial treatment, it is recommended that a consultant is

alerted. A failure of the blood lactate to fall by >20% from the initial value over the first hour is specified as a marker of failure to respond.

Mr Rousseau presented on 03 October with a history of diarrhoea and vomiting. The clinical impression was one of mild gastroenteritis associated with a slight tachycardia. Mr Rousseau was not suspected of having sepsis on this attendance. His blood tests formed part of a baseline assessment of a patient presenting through the 'majors' pathway (as opposed to the ambulatory / 'minors' pathway) with undifferentiated illness. They were not triggered by a specific suspicion of sepsis.

Even if sepsis had been suspected, Mr Rousseau would have been presenting without any high-risk criteria, meeting just one 'moderate to high risk' criterion (tachycardia – 91 to 130 beats per minute). In these circumstances, blood tests are not mandated by guidelines. In the absence of high-risk criteria, the reference to a 20% reduction in an initial blood lactate does not arise. Mr Rousseau was given intravenous fluids and monitored. His vital signs were checked on two further occasions and were normal aside from persistence of tachycardia (improved from 114 to 103 bpm). He was then discharged.

Approach to the identification and management of sepsis in the Emergency Department

As above, it was not considered that Mr Rousseau was presenting with sepsis at the time of his attendances and therefore the relevance of compliance with sepsis guidelines is perhaps limited. However, we fully agree that the early recognition, assessment, and management of sepsis is a core function of an Emergency Department.

In this regard, the Emergency Department:

- Maintains a local MKUH policy that is consistent with national guidance (including NG51). The current policy is due for scheduled review in November 2021.
- Operates an induction and weekly teaching programme, led by consultants, to ensure that each cohort of junior and middle grade medical staff is fully aware of the importance of this topic and the local management guidelines.
- Makes full use of the National Early Warning Score (NEWS) as part of the triage / monitoring process in patients attending the department. Heavy investment in our IT infrastructure (*Cerner eCare*) means that measurement, calculation, and display is automated.

- Uses a model of Rapid Assessment and Triage (RAT) whereby 'majors' patients are seen by a more senior clinician at the outset of their time in the department, and appropriate investigations are ordered (and the results reviewed) promptly. Near patient testing (with its shorter turnaround time) is available and used.
- Participates in Royal College of Emergency Medicine (RCEM) national audits, including the audit on sepsis in 2016-17. This audit examined performance in relation to 8 standards and the Trust performed at / above the peer median.

The profile of sepsis is also high across the wider Trust.

Proposed Actions

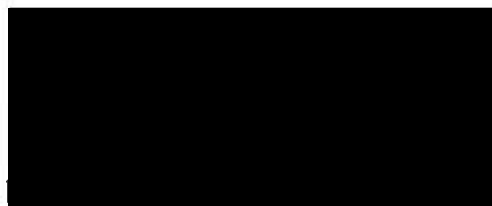
Whilst these actions are not specifically prompted by Mr Rousseau's case, the Trust will continue with existing measures as described above and:

1. Ensure that the MKUH sepsis policy is updated for November 2021.
2. Repeat an audit locally of the management of patients with suspected sepsis against the eight RCEM standards.
3. Consider the case for the designation of a sepsis lead within the department with specific responsibilities for ensuring that the profile of sepsis remains high.

We shall also ensure that the Regulation 28 report, this response and a summary of Mr Rousseau's case are discussed at an appropriate departmental forum in order to ensure that there is a wide understanding of the issues raised and that clinicians are reminded of the particular challenges in making a positive diagnosis of bowel ischaemia.

I hope that this response is helpful.

Yours sincerely



Chief Executive Officer



Copies

- [REDACTED] (parents of the late Mr Nicholas Rousseau)
- [REDACTED] Clinical Director, Emergency Department, MKUH
- [REDACTED] Medical Director, MKUH
- [REDACTED] Clinical Chair, BLMK Clinical Commissioning Group
- [REDACTED] Inspector, CQC
MKUH Quality and Clinical Risk Committee (sub-Committee of Trust Board)