	REGULATION 28 REPORT TO PREVENT FUTURE DEATHS **THIS REPORT IS BEING SENT TO:** **Mr David Carter, Chief Executive, Luton & Dunstable NHS Trust, Luton & Dunstable University Hospital, Lewsey Rd, Luton, LU4 0DZ**
1	**CORONER** I am **Emma Whitting**, Senior Coroner for Bedfordshire & Luton
2	**CORONER'S LEGAL POWERS** I make this report under paragraph 7, Schedule 5, of the Coroners and Justice Act 2009 and Regulations 28 and 29 of the Coroners (Investigations) Regulations 2013. http://www.legislation.gov.uk/uksi/2013/1629/part/7/made
3	**INVESTIGATION and INQUEST** On 6 August 2018 the Senior Coroner for Inner West London commenced an investigation was into the death of Millie Creasy, aged 7. The investigation was transferred to the Senior Coroner of Bedfordshire & Luton on 19 October 2018 and, following an Inquest held by me on 3 and 4 June 2019, my determinations and conclusion were delivered on 11 June 2019. The medical cause of death was found to be: 1a Hypoxic Ischaemic Brain Injury 1b Pneumonia, Seizures 2 Global Developmental Delay The Conclusion of the Inquest was a Narrative Conclusion: *The Deceased died after suffering a prolonged seizure which resulted in raised intracranial pressure. Although she was admitted to hospital immediately after the seizure, no increase in intracranial pressure was detected during the admission and she was discharged. By the time of her readmission, she had suffered an unsurvivable hypoxic brain injury. Whilst earlier treatment of the raised intracranial pressure would have improved her chances of survival, it could not be said that, had she received such treatment, she would have survived since the success of such treatment is very variable*.
4	**CIRCUMSTANCES OF THE DEATH** Between approximately 13.40 and 14.10 hours on 31 July 2018, the Deceased suffered a prolonged 30 minute seizure at home. Attending paramedics who witnessed the seizure described it as 'decorticate' and the Deceased as 'cyanosed and peripherally cold'. Following her admittance and treatment for a suspected infection in the Emergency Department at Luton & Dunstable Hospital, she was transferred to the Paediatric Assessment Unit for on-going management and further investigations. After the transfer, she was clinically assessed at 18.00 hours and 19.30 hours but had no additional neurological observations and was discharged home at 20.40 hours. Following a deterioration at home, she was re-admitted to the Paediatric Assessment Unit at 00.30 hours on 1 August 2018 when both her pupils were noted to be very

	dilated (9mm) although, initially, still reactive to light. She was still awaiting a Senior Clinical Review when she suffered a respiratory arrest as result of a herniation of her brain caused by raised intracranial pressure (ICP). Although she was subsequently transferred to the Paediatric Intensive Care Unit at St Mary's Hospital, her brain injury was recognised as unsurvivable and brain stem death was confirmed at 12pm on 5 August 2018.
5	**CORONER'S CONCERNS** During the course of the inquest the evidence revealed matters giving rise to concern. In my opinion, there is a risk that future deaths could occur unless action is taken. In the circumstances, it is my statutory duty to report to you. The **MATTERS OF CONCERN** are as follows. – (1) Millie was admitted to the Luton & Dunstable Hospital on 31 July 2018 at 14.42 hours having suffered a prolonged seizure of approximately 30 minutes which paramedics described as decorticate. She was subsequently discharged at 20.40 hours for with an appointment for review the following day (regular neurological observations had ceased after 2 hours); (2) Whilst my factual findings recognised that any earlier treatment for raised ICP may not have altered the outcome, and that a diagnosis of raised ICP or the risk of raised ICP is a clinical one, I was informed that it was not possible for the Luton & Dunstable NHS Trust to be more prescriptive in terms of clinical treatment in cases where a child presents with a history of prolonged seizure and that, in any event, "*the Trust did not have stronger evidence that a longer period of observation would help as neuro-observations will only detect the late situation when cerebral oedema has reached the point of coning/tonsillar herniation when intervention is often not effective. Additional interventions would only occur when the process is advanced enough for clinical detection and the outcome is poor"* ; (3) During the Inquest, I heard evidence from [redacted], Paediatric Intensivist, at St Mary's Hospital, London. Both the Pathologist and [redacted] agreed that an prolonged seizure can cause a hypoxic brain injury that may not become clinically apparent for hours or even days. [redacted] also explained that if Millie's condition had been identified at the stage of 'peri-herniation', she would have received neuroprotective procedures which would have improved her chances of survival; I have since been provided with a copy of the Imperial College Healthcare NHS Trust Guideline (Drafted by [redacted]): *Neuroprotection for the patient on the Paediatric Intensive Care Unit.* The scope of the guideline is said to be the multi-protection team working in any area of Paediatrics and states that: "***Whenever a patient has suffered a neurological insult or is at risk of primary (cellular damage leading to cell death) or secondary neurological injury (further cellular and structural injury) neuroprotective strategies should be commenced.*** *Clinical situations where this should be considered include the following:* *Traumatic Brain Injury* *Sepsis – prolonged hypotension* *Sepsis – meningitis, encephalitis* *Post-cardiac arrest* ***Any CNS insult – prolonged seizures*** *Metabolic derangements – sodium, glucose, ammonia* *Liver failure – encephalopathy";* (4) Although the evidence suggested Millie had suffered a prolonged seizure, there was no evidence to suggest the potential need for neuroprotective strategies was, in fact, considered by the Luton & Dunstable NHS Trust.
6	**ACTION SHOULD BE TAKEN** In my opinion action should be taken to prevent future deaths and I believe you have the

	power to take such action.
7	**YOUR RESPONSE** You are under a duty to respond to this report within 56 days of the date of this report namely by **1 November 2019**. I, the coroner, may extend the period. Your response must contain details of action taken or proposed to be taken, setting out the timetable for action. Otherwise you must explain why no action is proposed.
8	**COPIES and PUBLICATION** I have sent a copy of my report to the Chief Coroner and to Millie Creasy's family. I am also under a duty to send the Chief Coroner a copy of your response. The Chief Coroner may publish either or both in a complete or redacted or summary form. He may send a copy of this report to any person who he believes may find it useful or of interest. You may make representations to me, the coroner, at the time of your response, about the release or the publication of your response by the Chief Coroner.
9	**6 September 2019 SIGNED BY HM SENIOR CORONER:**