REPORT TO PREVENT FUTURE DEATHS

	REGULATION 28 REPORT TO PREVENT FUTURE DEATHS **THIS REPORT IS BEING SENT TO:** **1. [redacted], President, Royal College of Obstetricians &Gynaecologists** **2. [redacted], Chief Executive NHS England**
1	**CORONER** I am Catherine Wood, assistant coroner, for the coroner area of Central and South East Kent.
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/ukpga/2009/25/schedule/5/paragraph/7 http://www.legislation.gov.uk/uksi/2013/1629/part/7/made
3	**INVESTIGATIONS and INQUESTS** An investigation into the deaths of Kimberley Sampson who died on 22 May 2018 and Samantha Mulcahy who died on 4 July 2019 both from herpes simplex infections initially led to a discontinuation of both investigations on 2 October 2019. The investigations were reopened on 4 January 2022 as concerns were raised about a possible common source of infection. The investigations concluded at the end of the inquests which were held jointly and final conclusions handed down on 26 July 2023. The cause of death for both young women determined at the inquests was: 1a) Multi- Organ Failure 1b) Disseminated Herpes Simplex type I infection 1c) Herpes Simplex virus acquired before or around the time of delivery 2. Third trimester pregnancy A narrative conclusion was reached in both inquests and both narratives are set out below: "Kimberly Sampson died as a consequence of disseminated Herpes Simplex 1 infection with the initial infection having been acquired before or around the time of the delivery of her baby. There was a delay in instituting antiviral therapy, the known treatment for her illness, due in part to the presence of a concurrent bacterial infection but also due to a delay in recognising and linking the cause of her deteriorating liver function as being a symptom of a viral infection." "Samantha Mulcahy died as a consequence of disseminated Herpes Simplex 1 infection with the initial infection having been acquired before or around the time of the delivery of her baby. Antiviral therapy, the known treatment for her illness, was not instituted as her symptoms were unclear and her previous obstetric cholestasis had complicated the picture."

4	**CIRCUMSTANCES OF THE DEATHS** The circumstances in relation to Kimberley Sampson's death were that she had been fit and well when she became pregnant in 2017. She underwent a caesarean section for failure to progress on 3 May 2018 which was complicated by some bleeding. She went home on 5 May 2018 but was readmitted to Queen Elizabeth the Queen Mother hospital on 10 May 2018 with signs of sepsis and she was treated with broad spectrum intravenous antibiotics. An abdominal collection was drained on 12 May 2018 by way of a laparotomy. Some samples sent to the laboratory had grown gram positive bacteria and she was treated and her antibiotics were adjusted. She became more unwell on 16 May 2018 and her liver was showing signs of failure and a further laparotomy was performed which was essentially negative. She continued to deteriorate and by 18 May 2018 discussions were held with Kings College hospital and advice given by them to commence Acyclovir and she was transferred to Kings College hospital liver unit the following day. By this stage she was 16 days post delivery and showing signs of multiple organ failure with cardiovascular instability, respiratory and liver failure as well as a severe coagulopathy and signs of acute kidney injury. Despite full resuscitative measures including ECMO she died from multiple organ failure as a consequence of her disseminated herpes simplex infection on 22 May 2018. The circumstances in relation to Samantha Mulcahy's death occurred very shortly after the death of Kimberley Sampson and clinicians in common were involved in looking after both mothers. I found that their index of suspicion should have been raised and indeed a viral cause and possible treatment was suggested by one Obstetrician but following a discussion with a Microbiologist was not instituted. Samantha Mulcahy had a past medical history of oesophageal hernia, polycystic ovaries, gallstones and underactive thyroid when she became pregnant in 2017. She developed obstetric cholestasis in the latter stages of her pregnancy and required a caesarean section for failure to progress on 26 June 2018 which was complicated by a tear to the broad ligament. On 28 June she developed signs of sepsis and was commenced on broad spectrum intravenous antibiotics. She did not improve and her respiratory function deteriorated and investigations including a CTPA on undertaken to rule out a pulmonary embolism as a cause of her symptoms. Antiviral medication was discussed by the obstetrician and microbiologist on 30 June 2018 but a decision made that it should not be commenced. She was transferred to Intensive care unit on the morning of the 30 June and she was considered to be suffering from respiratory failure secondary to abdominal distension with a possible pneumonia and she improved slightly over the course of the day with treatment. A CTPA was undertaken on 2 July 2018 to rule out a pulmonary embolism as a cause of her symptoms which showed no PE but some patchy shadowing in her lungs and bilateral pleural effusions. She deteriorated significantly overnight between the 2 and 3 July 2018 with a decrease in urine output and her liver function tests the next morning showed fulminant liver failure and she had also developed ascites. There was a delay in recognising a viral cause of her illness as it was thought that she may be suffering from steatosis plus sepsis and discussions with the liver unit at Kings College hospital led to recommendations to commence antifungal not antiviral medication. She continued to deteriorate and discussions were held about ECMO with the team arriving around 2am on 4 July 2018. She was transferred to theatres to set up ECMO and operate if necessary. Despite all attempts to improve her situation she continued to deteriorate and died around 07.15 that morning.
5	**<u>CORONER'S CONCERNS</u>** 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) The inquest heard evidence of steps having been taken to try to establish if the deaths of both women were linked and if there was a common source of infection. In both inquests the women had been treated in separate hospitals but within the same Trust and two members of staff had been involved in treating both women. The inquest heard that Public Health England were involved in the investigation following the deaths and advice on testing staff was unclear which meant neither of the members of staff involved with both women were tested. The inquest was however unable to establish if the strain of the virus was the same in both women as the evidence on this was inconsistent and on balance the evidence did not support a conclusion that both women were infected by the same source. (2) Evidence given at the inquest revealed that Herpes Simplex can be fatal if contracted in pregnancy and whilst deaths are rare there is no specific guidance in relation to treating women in the post-partum period with anti-viral therapy. It was accepted by all who gave evidence that antiviral medication would have been the recognised treatment for Herpes Simplex (specifically Acyclovir). The Trust has made some minor amendments to its protocols but there is no national guidance either in place back in 2018 or currently in 2023 on prescribing antiviral medication to women who present with signs of systemic infection. Had Acyclovir been prescribed at an earlier stage it is likely to have significantly reduced the risk of death from progression of the disease. Sepsis protocols cover antibiotic therapy but not antiviral therapy. What was abundantly clear from the evidence before the court was that this is a rare but often fatal disease if contracted in the peripartum period and more needs to be done to raise awareness of it as a potential diagnosis to exclude in sepsis pathways and for early consideration of the use to Acyclovir.
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 12 November 2023. 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 the following Interested Persons namely the families, and East Kent Hospitals University NHS Foundation Trust. 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	**17 September 2023**  **Catherine Wood** **Assistant Coroner** **Central and South East Kent**