REGULATION 28 REPORT TO PREVENT FUTURE DEATHS
THIS REPORT IS BEING SENT TO:

1. NHS England
2. St George's University Hospital's NHS foundation Trust

1 **CORONER**

I am Ellie Oakley, Assistant Coroner for Inner West London

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.

3 **INVESTIGATION and INQUEST**

On 9 October 2022 the Senior Coroner commenced an investigation into the death of Samuel Finlay Parkin. The investigation concluded at the end of the inquest on 6 September 2024. The conclusion of the inquest was: Samuel Finlay Parkin died from hypoxic brain injury following a cardiac arrest caused by midgut volvulus which occurred due to an undiagnosed malrotation which had been present from birth. The treating clinicians' analysis of Sam's symptoms and false reassurance from the result of an ultrasound meant further tests which could have diagnosed malrotation were not carried out, leading to a misdiagnosis. The undiagnosed malrotation was therefore not surgically treated. The malrotation caused the volvulus to occur. Had the malrotation been operated on it is likely that the death would not have occurred.

4 **CIRCUMSTANCES OF THE DEATH**

Sam died on 16 September 2022 from hypoxic brain injuring following an out of hospital cardiac arrest on the night of 13-14 September, caused by midgut volvulus. The volvulus occurred due to Sam having an undiagnosed malrotation, which had been present since his birth. Sam was seen on multiple occasions at St George's hospital over the course of his life – in the Emergency Department in 2013, 2015 and 2016 and as an outpatient in 2016 and 2022. The only time malrotation was listed within the notes as a potential diagnosis was in the ward round notes from his admission in 2015. An ultrasound was done in 2015 but not an upper GI contrast, or Barium, study. The ultrasound request (in 2015) from the surgical team did not mention malrotation as a possible diagnosis. The ultrasound report noted that the SMA/SMV axis was normal, but did not comment specifically on malrotation. The evidence of the Radiologist, Paediatric Gastroenterologist and expert witness (a Consultant Paediatric and Neonatal Surgeon) was clear that ultrasound cannot exclude malrotation. The clinicians who treated Sam gave evidence that their level of suspicion for malrotation was low. Sam was misdiagnosed. Having considered the evidence, including the opinion of the expert witness, I found that the repeated nature of Sam's symptoms (in particular, vomiting which was sometimes green and severe abdominal pain) over a number of years meant that an upper GI contrast study should have been carried out to look for malrotation. As is set out in the conclusion, had that test been conducted it is likely that it or further tests (if the barium study had been equivocal) would have identified the malrotation and it would have been treated through surgery, thereby significantly reducing the risk of volvulus and Sam's ultimate death. The evidence also showed that Sam's parents were not given sufficient safety netting advice which meant that, due to the misdiagnosis and the information/reassurance that they had received over a number of years of bringing Sam to hospital, they did not bring Sam into hospital earlier when he was, unbeknown to them, suffering from the volvulus that proved to be fatal.

The medical cause of death on the Medical Certificate of Cause of Death was:
1a Hypoxic Ischaemic Encephalopathy
1b Cardiac Arrest
1c Midgut Volvulus

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 will 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. St George's have noted a number of learning outcomes in the course of their M&M process and the Child Death Analysis Form. Whilst I heard evidence of training and informal discussions amongst colleagues both at St George's and regionally, I consider that action is required to ensure that those learning points are formally considered and disseminated throughout St George's and more widely in the NHS.
2. In the course of the evidence it became clear that the inclusion of a comment in the ultrasound report that the SMA/SMV axis was normal gave false reassurance regarding malrotation. The consultant paediatric radiologist was clear that she was not looking for malrotation on the USS (as it was not listed as a potential diagnosis on the ultrasound request), that USS cannot be used to exclude malrotation and that noting that the axis was normal was simply a comment on the anatomy seen and was not the radiologist providing information relating to whether or not malrotation was present. It is recorded in the notes of the M&M meeting which took place following Sam's death and in the evidence that I heard, that although clinicians understood that USS is not the diagnostic test for malrotation and that malrotation will not be seen on an USS in circa 25% of cases, the recording of the axis being normal gave a false reassurance. St George's has changed their practice of reporting of USS to avoid potential confusion in the future. I consider action is required to ensure proper understanding of the limitations of USS in looking for malrotation, in particular in older children, and to avoid any similar confusion regarding the reporting of USS both in St George's and across the NHS.
3. Following Sam's death, St George's has reduced the "threshold" for requesting of upper GI contrast studies in intermittent abdominal pain and intermittent vomiting. Given the serious nature of the potential risk that malrotation carries (namely of volvulus occurring) I consider action is required across the NHS, following St George's lead, to ensure that the symptoms of and diagnostic tests for malrotation, particularly in older children is understood. Where the learning in St George's is informal, I consider action is required to ensure that formal learning takes place within St George's.
4. St George's has implemented a change in 'safety netting' advice for those with what is thought to be benign abdominal conditions from Paediatric ED (using QR codes), from wards and outpatient clinic. Advice is give in writing that "benign abdominal diagnosis" does not exclude conditions requiring urgent surgical/ medical review. This action has been taken for the reasons set out above and action should be taken to ensure the wider NHS considers this learning point.
5. One of the learning actions taken by St George's is that re-referrals to gastroenterology are reviewed by another consultant in order that a fresh assessment/second opinion may occur, followed by an MDT discussion and the option of transferring back to the original consultant. St George's feels this may help increase the detection of atypical/unusual presentation of GI conditions, including a later presentation of malrotation. Action is required so that this learning point is considered across the NHS.
6. The evidence before me suggested that there may have been a miscommunication or misunderstandings between the surgical, paediatric and paediatric gastroenterology teams regarding what had and had not been considered and excluded by each during Sam's admission in 2015. In

particular, St George's written answers to Mr and Mrs Parkin's question regarding whether there was miscommunication between the treating clinicians was simply "yes". St George's has therefore implemented an inpatient (written) referral form to the GI service. Action is required by St George's and the wider NHS to consider/implement ways to minimise the possibility of miscommunication between teams/in referrals of all disciplines.

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 11 November 2024. 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:

Mr and Mrs Parkin (Sam's parents)
St George's University Hospitals NHS Foundation Trust.

I have also sent it to NHS Scotland, NHS Wales, Health and Social Care Northern Ireland and Royal College of Paediatrics and Child Health, who may find it useful or of interest.

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. She may send a copy of this report to any person who she 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 16 September 2024

Signature: 

Ellie Oakley
Assistant Coroner for Inner West London