COUNTY OF DEVON, PLYMOUTH AND TORBAY
CORONER AREA

REPORT TO PREVENT FUTURE DEATHS
REGULATION 28 OF THE CORONERS (INVESTIGATION) REGULATIONS 2013

JOHN SOUTHAM KEEN

HM AREA CORONER
NICHOLAS LANE

	REGULATION 28 – REPORT TO PREVENT FUTURE DEATHS THIS REPORT IS BEING SENT TO: 1) Chief Executive **- South Western Ambulance Service NHS Trust (SWAST NHS)** [redacted] 2) Chair **- JRCALC liaison committee, Association of Ambulance Chief Executives (JRCALC)** [redacted]
1.	CORONER I am Nicholas Lane – HM Area Coroner for County of Devon, Plymouth and Torbay.
2.	DATE OF REPORT 3 June 2026.
3.	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.
4.	THIS REPORT IS BEING SENT TO: 1) South Western Ambulance Service NHS Foundation Trust (SWAST NHS); 2) JRCALC liaison committee, Association of Ambulance Chief Executives (JRCALC). You are under a duty to respond to this report within 56 days of the date of this report – **29 July 2026.** I may extend the required date for response, if an appropriate application is made by you.
5.	YOUR RESPONSE

	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. I have a duty to send a copy of your response to the Chief Coroner. In accordance with the Chief Coroner's PFD Publication Policy (2026), you should send any representations that you wish to make regarding publication of your response. These representations should be made at the same time as the response is provided. I will pass any representations received to the Chief Coroner for their determination. Please note any links to webpages included in the response will not be checked for sensitive information prior to publication, as the information is already online. The names of those who do not respond to PFD reports are regularly published on the Chief Coroner's webpage – Non-responses to Prevention of Future Deaths (PFD) reports – Courts and Tribunals Judiciary.
6.	<u>BRIEF OVERVIEW OF CONCERNS</u> I am concerned about the process of internal investigation, and associated lack of learning, by SWAST NHS – in that the clinical review carried out by them did not appreciate or understand Mr Keen's relevant background medical history (despite this clearly being given to both call handlers and clinicians from SWAST NHS) and it did not properly take into account the full picture that should have been known to SWAST NHS clinicians when they attended on Mr Keen at his home on 19 August 2023; namely, that Mr Keen had a known thoracic ascending aortic aneurysm and was displaying symptoms suggestive of possible aortic dissection. Separately, I am concerned that the JRCALC guideline that is in place nationally, in respect of paramedic clinicians considering aortic dissections (JRCALC vascular emergencies guideline) is confusing, potentially contradictory and not easy to navigate for clinicians working under pressure.
7.	<u>ACTION SHOULD BE TAKEN</u> In my opinion, unless action is taken to address the above concerns then there is a significant risk of future deaths and I believe that your organisation has the power to take such action.
8.	<u>INVESTIGATION and INQUEST</u> On 5 September 2023 an investigation was commenced into the death of John Southam Keen. The investigation concluded at the end of the inquest hearing on 13 May 2026 at Exeter Coroner's Court, heard by HM Area Coroner Nicholas Lane. Section 2 of the Record of Inquest (which recorded the medical cause of Mr Keen's death) was determined as: *1a) hypoxic brain injury* *1b) type A ascending aortic dissection (operated 19/08/2023)* *2) hypertension* Section 3 of the Record of Inquest (which set out how, when and where Mr Keen came by his death) was determined as: *'John Keen had been diagnosed with a thoracic ascending aortic aneurysm in 2018, which was being managed and monitored by cardiology professionals. John suffered a dissection of this aneurysm at home in the morning on 19 August 2023, with symptoms of sudden onset chest pain radiating to his back and neck. Paramedics attended on John and considered that he was likely suffering symptoms of acute coronary syndrome. Paramedics were informed that John had an ascending aortic aneurysm; however, for reasons unknown, they based their clinical assessment on John having an abdominal aneurysm. If*

	consideration had been given by attending paramedics to both John's presenting symptoms and accurate clinical history then he would have required urgent transfer to the arterial surgery specialist unit, where he would have undergone emergency surgery. Instead, John only arrived at this unit, Derriford Hospital, Plymouth, a number of hours later, as he was initially taken for assessment at Torbay Hospital, where imaging confirmed the dissection. John suffered a cardiac arrest prior to surgery being undertaken at Derriford Hospital, Plymouth in the afternoon on 19 August 2023. Although surgery was undertaken successfully, John had suffered a fatal hypoxic brain injury as a result of his cardiac arrest. John's life support was withdrawn and he died at Derriford Hospital on 24 August 2023.' Section 4 of the Record of Inquest (which set out conclusions in respect of Mr Keen's death) was determined, in narrative form, as: *'John Keen died from the progression of a natural disease process, contributed to by delayed transfer to specialist surgical unit and consequential delay in undergoing emergency surgery. John's death was contributed to by neglect.'*
9.	<u>CIRCUMSTANCES OF DEATH</u> Mr Keen was a 70 year old man who had significant vascular disease - he had been diagnosed with hypertension a number of years previously and in 2018 he was diagnosed as having a thoracic ascending aortic aneurysm. The size of this aneurysm was monitored in the community and was felt to be fairly static and stable from diagnosis through to the summer of 2023. Mr Keen suddenly became unwell in the morning at home on 19 August 2023. He initially reported difficulty breathing, with sudden onset chest pain which had radiated to his back and neck. Mr Keen's wife called 999 and spoke with the ambulance control, informing them that he was suffering from chest pain and that he had a diagnosis of an ascending aortic aneurysm. Paramedics attended Mr Keen's home and assessed him – they were informed that he had an ascending aortic aneurysm (both orally by Mr Keen's wife and they were shown recent clinic documentation from the cardiology service confirming this history) and noted his clinical presentation. Paramedics considered it likely that John Keen was suffering with acute coronary syndrome and took him to the nearest acute hospital. Paramedics incorrectly recorded, on their patient record documentation, that Mr Keen had a triple AAA (*abdominal* aortic aneurysm), rather than an *ascending* aortic aneurysm. Mr Keen was assessed by a consultant in emergency medicine at hospital and, having been informed of his background medical history (including an ascending aortic aneurysm) and noting his clinical presentation that day, they suspected an aortic dissection. This was confirmed on imaging and Mr Keen was then transferred to the regional tertiary arterial centre for emergency surgery. Surgery took place later on in the afternoon on 19 August; however, immediately prior to this Mr Keen went into cardiac arrest – prior to him being able to be placed on life support machine in theatre he received cardio-pulmonary resuscitation (CPR) and, during this time, had no cardiac output for around 20 minutes. Although surgery to repair the aortic dissection was carried out successfully, Mr Keen had suffered a fatal hypoxic brain injury whilst in cardiac arrest, and, following prognostic discussions with family members, active care was withdrawn and he died on 24 August 2023.
10.	<u>DETAIL OF CONCERNS</u> During the course of the investigation and inquest I obtained and heard evidence giving rise to concerns. 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:

SWAST NHS

1)

It is unfortunately clear, when comparing the evidence heard at the inquest with the findings of SWAST NHS's clinical review, that there was inadequate analysis of this incident by SWAST NHS, with concerning circumstances surrounding the care provided by attending paramedics not being identified and analysed properly – therefore whether there were any appropriate recommendations to inform future care provision were not considered by SWAST NHS.

All clinical witnesses who gave evidence at the inquest (with the exception of the author of SWAST NHS's clinical review) stated that the combination of knowing that Mr Keen had an ascending aortic aneurysm with him presenting with sudden onset chest pain radiating to his back, should have alerted attending paramedics to the real possibility of an aortic dissection. Given this and the gravity of this potential situation, it is clear that Mr Keen should have been taken directly from his home to the tertiary arterial centre by emergency ambulance transfer. If this had happened, Mr Keen would have undergone life-saving cardiothoracic surgery a number of hours earlier than he did.

SWAST NHS's clinical review did not identify (until the error was pointed out to them during the coronial investigation) that attending paramedics incorrectly recorded that Mr Keen had an abdominal aortic aneurysm, as opposed to an ascending aortic aneurysm. Accordingly, the clinical review did not consider how this error may have occurred. The clinical review went on to conclude that Mr Keen was not demonstrating symptoms to attending paramedics which would indicate a possible aortic dissection – at the inquest, the author of SWAST NHS's clinical review maintained that this was SWAST NHS's view and, even when taking into consideration Mr Keen's correct medical history (having an ascending aortic aneurysm) together with his presenting symptoms of sudden onset radiating chest pain, SWAST NHS did not consider that an aortic dissection was a potential differential diagnosis that needed urgent investigation.

The inquest heard from an associate specialist in emergency medicine and consultant cardiologist, both of whom considered that Mr Keen's presentation and known medical history should have resulted in there being a high degree of suspicion that he was suffering with an aortic dissection on 19 August 2023. It is also clear that the consultant in emergency medicine who assessed Mr Keen when he arrived at hospital, and who considered his known history and his presenting symptoms on that day, held such suspicion and immediately ordered imaging to confirm whether there was an aortic dissection. Therefore, a clear finding of fact was made at the inquest that SWAST NHS's clinical review fell into error when it concluded, firstly, that it was reasonable for attending paramedics to consider it unlikely that Mr Keen was suffering an aortic dissection and, secondly, that Mr Keen was correctly taken for assessment to the local acute hospital.

If SWAST, during their internal review and investigation, do not identify an accurate factual background together with any concerns in relation to clinical care provided by their clinicians, and do not take steps to try and learn from these incidents when they occur, then there is an obvious, significant and continuing risk of future deaths occurring arising out of healthcare provision provided by SWAST NHS.

2)

Although responsibility for the content of the Joint Royal Colleges Ambulatory Liaison Committee (JRCALC) clinical guidelines does not lie with SWAST NHS (it lies with this named committee, which is part of the AACE, and therefore they have been asked to respond to the concerns raised here about a guideline – see below) it is important that ambulance trusts consider issues relating to paramedic guidance and that their views feed in to the work of JRCALC. Therefore, the same concern that is set out below for the attention of JRCALC is raised with SWAST NHS here, for them to consider the issues raised and to formally respond with their views.

At the inquest, the content of SWAST NHS's vascular emergencies guideline was considered. SWAST NHS confirmed that this local guideline was based on the JRCALC national vascular emergencies guideline (which had last been updated in July 2025) and that the substantive provisions in respect of clinicians considering a potential aortic dissection were set out in accordance with the national guideline.

All those involved at the inquest who both asked and answered questions about this guideline (including myself, counsel for Mr Keen's family and the author of SWAST NHS's clinical review) considered that it was confusing, potentially contradictory and not at all user-friendly for paramedics. In particular, concerns were raised that:

- there is a section entitled 'aortic aneurysms', but when the detail of this section is considered it becomes apparent that this only relates to potential rupture of an *abdominal* aortic aneurysm. There is then a separate section entitled 'aortic dissection' and it is clear that this relates primarily to *ascending and descending* aortic aneurysms, but also in some respects to *abdominal* aneurysms. The headings of these sections are confusing and it is not easily apparent which one should be considered in respect of each different type of aneurysm, which is of course particularly relevant to presenting symptoms, particularly location of pain.

- in the 'aortic dissection detection risk score' table of the guideline, there are a number of predisposing conditions, pain features and examination findings listed as relevant to a calculation of risk. There is then a total possible score of 0 – 3, presumably depending on whether a risk factor is present in each of the three columns – however, there is then no information about what should happen given any particular score or how the total score should affect a clinician's impression of clinical risk. This appears to be unhelpful.

- hypotension on examination is listed as a risk factor in this risk score table, however later on in the guidance (in a section headed 'risk factors') it is stated that 'hypotension is a poor prognostic sign'. Immediately above this it is stated that 'blood pressure may be high as a consequence of the dissection'. It is therefore unclear whether, in respect of a potential aortic dissection, high or low blood pressure is concerning, or how the issue of a patient's blood pressure may be relevant to overall clinical risk.

- overall, the impression of those discussing and analysing this guidance at the inquest was that it was confusing, lacking in detail and clarity in some respects, but unhelpfully long-winded and unclear in others. Further, it was mentioned that this guidance compares unfavourably to other documents used in similar clinical situations, including the 'Manchester Triage System' for suspected aortic dissection, which the inquest heard was used in some emergency departments in the UK and sets out, on one page, what the concerning symptoms are which should raise the possibility of a patient suffering an aortic dissection, and how these should then inform the urgency of the clinical response.

<u>JRCALC</u>

1)

At the inquest, the content of SWAST NHS's vascular emergencies guideline was considered. SWAST NHS confirmed that this local guideline was based on the JRCALC national vascular emergencies guideline (which had last been updated in July 2025) and that the substantive provisions in respect of clinicians considering a potential aortic dissection were set out in accordance with the national guideline.

All those involved at the inquest who both asked and answered questions about this guideline (including myself, counsel for Mr Keen's family and the author of SWAST NHS's clinical review) considered that it was confusing, potentially contradictory and not at all user-friendly for paramedics. In particular, concerns were raised that:

- there is a section entitled 'aortic aneurysms', but when the detail of this section is considered it becomes apparent that this only relates to potential rupture of an *abdominal* aortic aneurysm. There is then a separate section entitled 'aortic dissection' and it is clear that this relates primarily to *ascending and descending* aortic aneurysms, but also in some respects to *abdominal* aneurysms. The headings of these sections are confusing and it is not easily apparent which one should be considered in respect of each different type of aneurysm, which is of course particularly relevant to presenting symptoms, particularly location of pain.

	- in the 'aortic dissection detection risk score' table of the guideline, there are a number of predisposing conditions, pain features and examination findings listed as relevant to a calculation of risk. There is then a total possible score of 0 – 3, presumably depending on whether a risk factor is present in each of the three columns – however, there is then no information about what should happen given any particular score or how the total score should affect a clinician's impression of clinical risk. This appears to be unhelpful. - hypotension on examination is listed as a risk factor in this risk score table, however later on in the guidance (in a section headed 'risk factors') it is stated that 'hypotension is a poor prognostic sign'. Immediately above this it is stated that 'blood pressure may be high as a consequence of the dissection'. It is therefore unclear whether, in respect of a potential aortic dissection, high or low blood pressure is concerning, or how the issue of a patient's blood pressure may be relevant to overall clinical risk. - overall, the impression of those discussing and analysing this guidance at the inquest was that it was confusing, lacking in detail and clarity in some respects, but unhelpfully long-winded and unclear in others. Further, it was mentioned that this guidance compares unfavourably to other documents used in similar clinical situations, including the 'Manchester Triage System' for suspected aortic dissection, which the inquest heard was used in some emergency departments in the UK and sets out, on one page, what the concerning symptoms are which should raise the possibility of a patient suffering an aortic dissection, and how these should then inform the urgency of the clinical response.
11.	<u>COPIES AND PUBLICATION OF THIS REPORT</u> I have a duty to send a copy of my report to every Interested Person (IP) who in my opinion should receive it. I also may send a copy of the report to any other person who I believe may find it useful or of interest. I confirm I have sent the report to: 1) Legal representatives of John Keen's family (IP). 2) Torbay and South Devon NHS Foundation Trust (IP). 3) Royal Devon University Healthcare NHS Foundation Trust (IP). 4) University Hospitals Plymouth NHS Trust (not an IP, but were involved in care provision). I also have a duty to send a copy of the report to the Chief Coroner. You may make representations to me, the coroner, about the publication of the contents of this report in line with the Chief Coroner's PFD Publication Policy (2026). Any representations will be sent to the Chief Coroner alongside the report. Please refer to Section 5 above for additional information relating to the publication of reports and responses.

12.	Date: 3 June 2026 Signature:  **Nicholas Lane** **HM Area Coroner** *County of Devon, Plymouth and Torbay*