NHS
University Hospitals Birmingham
NHS Foundation Trust

Executive Office of the Chair and Chief Executive
[redacted]

Trust Headquarters
Level 1
Queen Elizabeth Hospital Birmingham
Mindelsohn Way
Edgbaston
Birmingham B15 2GW

For the attention of Mr Adam Hodson
Assistant Coroner for Birmingham and Solihull
50 Newton Street
Birmingham

[redacted]

18 October 2021

Dear Mr Hodson

**Inquest touching the death of Anne Geraghty**
**Inquest – 25 August 2021**

I write further to the Inquest touching the death of Anne Geraghty in which you issued a Regulation 28 Report to Prevent Future Deaths to Philips in relation to their central monitoring stations.

Following receipt of the Report, a meeting took place with our clinical leads and representatives from Philips to discuss the equipment and the issues that had arisen in this case. Philips have also subsequently attended and undertaken an inspection of the specific machine used in monitoring Ms Geraghty.

During the Inquest, the evidence presented to you in both our internal investigation and through witness evidence, was that the alarms on the monitoring equipment had self-terminated. This was based on evidence obtained from nursing staff and our medical engineering team that the alarm had not been silenced and therefore it was assumed that it had self-terminated on Ms Geraghty's heart rhythm returning to normal.

During our discussions with Philips subsequent to the Inquest Hearing we have become aware that the machines are not configured in a way that allows alarms to self-terminate upon the heart rhythm returning to normal. The alarm must therefore have been silenced and we believe this is likely to have been a user error based on the fact the trace would have shown a normal rhythm within seconds of the alarm sounding. In light of this information, we would like to apologise for our honest and mistaken belief that the alarms on the equipment self-terminated. From our subsequent enquiries it appears that the confusion as to the functionality of the equipment is likely to have arisen during conversations with our ward staff and medical engineers, and subsequently with Philips's support personnel. There is no evidence of any deliberate provision of incorrect information.

As stated above, it is considered most likely that a member of staff must have silenced the alarm, noted that the heart was in normal rhythm and took no further action. Once an alarm has been silenced, the configuration of the equipment does not automatically highlight the abnormal section of

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the ECG and therefore no further action was taken at that point. It was only on a later examination of the log that the episode became apparent. Our clinical evidence remains that this episode, and the failure to identify the same at the time, would not have affected the outcome as regards Ms Geraghty's unfortunate death.

**Action Plan**

As soon as we became aware of the machine configuration, following the inspection undertaken by Philips, we took a number of immediate steps to raise awareness of the alarm system in place which included an email to all cardiology staff on each of our sites detailing how the alarm system functions. This information was also discussed in ward safety huddles.

In addition to the above, we have also put in place a number of other actions as set out below.

**Education and training**

In addition to internal education, the Trust is working with Philips to provide additional refresher training and education to our staff around the monitoring equipment and relevant human factors in the management of the same, including efforts to avoid/minimise any risk of 'alarm fatigue'. This will include an Alarm Management Programme across our cardiology service at all our sites.

Both our divisional and medical device team educators will be involved with the refresher training, and we are currently in discussion with Philips to agree dates. Our aim is to have completed the education and training within the next 3 months.

**Machine configuration**

As set out above, once an alarm is silenced, there is no facility which allows for the immediate review of the abnormal ECG if no longer on view. In partnership with Philips, we will be exploring whether it is possible to alter the configuration of the software and to explore with them the possibility of putting in place a facility which allows for review of the abnormal section of the ECG at the point it is silenced.

**Retention of traces**

Currently trace logs are only retained for a period of 50 days before they are removed from the system. In this case, the traces had already been removed at the point where Philips were asked to review them and so this could not assist the authors of the SI report relied upon at the Inquest Hearing. In recognition of this issue the Trust is exploring the retention of trace logs locally for an extended period which would allow for retrospective review.

I would like to assure you that we have reflected on this case and have taken immediate steps to ensure our teams are fully aware of how the alarm systems function on the monitoring equipment. We will continue to work with Philips and implement the actions set above which we hope provides you with assurance that steps are being taken to prevent any similar occurrences in the future.

Once again, we apologise to both the Court and the parties for the inadvertent incorrect evidence provided. This has been reflected on within both the Service and the Trust's legal department and we can assure you that reflection on this incident will ensure increased scrutiny of evidence before it is provided to your office.

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Yours sincerely,

Chief Medical Officer
University Hospitals Birmingham NHS Foundation Trust