NHS
North Bristol
NHS Trust
Trust Headquarters
Gate 3 Level 2, Brunel Building
Southmead Hospital
Westbury-on-Trym
Bristol BS10 5NB
[redacted]
Website: www.nbt.nhs.uk

HM Coroner's Service
Coroner's Court
Old Weston Road
Flax Bourton
BS48 1UL

[redacted]

24 May 2024

Dear Dr Fox

Re: Regulation 28 Report following the Inquest into the Death of Mrs Gillian Baumgardt

I write further to the Regulation 28 Prevention of Future Deaths Report, dated 28 February 2024, issued as a result of the inquest into the death of Mrs Gillian Baumgardt.

The Regulation 28 raised two key concerns, namely:-

1) There is no system requiring radiographers to ensure that pre-exposure markers are present in the X-ray field in all such patients (elderly patients with dementia suffering hip fracture);
2) There is no system requiring radiologists to investigate inconsistency in the site of injury between different images and to alert clinicians to the inconsistency before finalising their report in all such patients.

North Bristol NHS Trust offers the following responses to the points raised:

1) **No system requiring radiographers to ensure that pre-exposure markers are present in the X-ray field of elderly patients with dementia suffering hip fracture**

At North Bristol NHS Trust it is a requirement that 100% of X-Ray images have an anatomical side marker. The Gold standard is for these to be pre-exposure markers. By way of background information, the use of pre-exposure markers involves the mechanical placement of a small metal marker onto an X-Ray detector or the patient, and it is a practice that is subject to a small failure rate. Dependent on the configuration of the patient or the Imaging equipment (patient standing or lying on X-Ray table, or X-Ray on emergency trolley) then the placement of any such marker will differ in its technical application. When the marker is physically placed on, beside, or beneath the patient, there is a possibility that the marker may move as the patient readjusts their position due to pain or discomfort attributed to their injury or illness. When the marker is placed on the detector, the marker may fail to show due to misalignment of the detector to the collimated (confined area) of the X-Ray. These occurrences have been observed as findings in our audit of side markers since October 2022.
It is therefore important to recognise that in a small proportion of images the pre-exposure marker will be absent, and a decision is made on how to rectify the situation and provide an image that is

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populated with an accurate side marker. In this small proportion of situations, if the Radiographer has confidence on the radiographic positioning, image orientation, and equipment parameters then at North Bristol NHS Trust a requirement to repeat the X-Ray is not deemed necessary. This is based on considerable systems training for the Radiographer, both at North Bristol NHS Trust and during undergraduate training. The decision is also informed with consideration to the Ionising Radiation (Medical Exposure) Regulation guidance on keeping the X-Ray dose to the patient to as low as reasonably practicable. Repeat imaging occurs only in those instances of clinical uncertainty.

Since December 2023, the Plain Imaging department at North Bristol NHS Trust has introduced a process for checking the placement of an electronic (post exposure) marker in trauma radiographs. This is a buddy check type system, where a Radiographer colleague will record a signature to evidence they have checked the post-exposure electronic marker is accurate both in its selection and position on the X-Ray image. This method introduces a pause and check prior to the submission of X-Ray images. The signature is recorded on a Trust approved document (copy enclosed) for undertaking patient checks during X-ray procedures and it is thereafter scanned into the patient notes.

In addition, we have introduced a daily audit for the checking of trauma hip radiographs (in combination with the existing wider departmental audit of pre-exposure markers) providing a real focus on X-Ray Imaging for this patient group and presenting the opportunity to intervene should errors be noted and provide timely feedback for improvement when non-compliance is detected. Lead Radiographer Paul Hocking commenced this audit on 4 March 2024. Since then, this audit has evaluated over 1700 hip X-Ray images, all of which have been accurate in positioning, all with an anatomical marker, and an associated compliance rate of 95% for pre-exposure marker use. If there have been instances of non-compliance, these have been actively challenged with the Radiographers involved in order to bring about future quality improvement.

North Bristol NHS Trust is also entering a phase of capital replacement with its fleet of X-Ray rooms. We have included an evaluation of safety features as a key part of the clinical trials and procurement. Selection of a suitable system has been made for a new X-Ray room to be installed late 2024. It is predicted that improvements to the X-Ray Imaging equipment will aid Radiographers in making accurate imaging handling decisions and instructions first time. Importantly the flip function that caused concern in this incident will have changed its warning from a small non-descript icon to a larger FLIP text notification on the X-Ray image.

The hardware and software device changes are anticipated to take place across all North Bristol NHS Trust's X-Ray rooms over the next 5 years, offering a service improvement for the patients that receive diagnostic Imaging in these X-Ray rooms.

2) **There is no system requiring radiologists to investigate inconsistency in the site of injury between different images and to alert clinicians to the inconsistency before finalising their report in all such patients.**

North Bristol NHS Trust has a standard operating procedure for the communication of critical, urgent and unexpected significant radiological findings. This process includes an instruction to the Radiologist/ Reporting Radiographer who is reporting the images to contact the referring clinician or clinical team by telephone in the event of any critical findings. Any conversation as such is also noted in the formal report.

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Following the Regulation 28 Prevention of Future Deaths Report in respect of Mrs Baumgardt, there has been a full review carried out of how we manage a discrepancy in radiographic presentation, and / or side marking. We have already put forward a number of changes to practice, which will now go through our governance sign off prior to them being fully rolled out. These changes are due to be signed off at the Imaging Governance Committee scheduled for 18 June 2024.

The changes in practice are listed within a Standard Operation Procedure, and include the following:

> In the event an anomaly or inconsistency is detected relating to radiographic presentation and/or lateral side marker, then:
>
> The Radiologist/ Reporting Radiographer is responsible for:
>
> > Checking their findings with a senior Radiographer on duty.
> >
> > If inconsistencies cannot be explained and corrected by the Radiologist/Reporting Radiographer, then they are to contact the patient's referring clinician by telephone and notify them.
> >
> > Details of any such conversation including the name of the individual spoken with should be noted in the formal report. Conversations must take place with either :
> > a. The referring clinician or clinical team, or
> > b. Senior Radiographer who undertakes a correction of side marking or image orientation to be noted in the formal report

By changing to this approach of how we manage any detected inconsistences, this will strengthen an important connection between the production of, and reporting of, images taken by X-ray. This will also present the opportunity to further evaluate the accuracy of the X-Ray image and provide the most accurate and optimum report for the clinical teams involved in the patient's care.

It is anticipated that these changes will further improve the quality and accuracy of X-ray image production and reporting.

I would like to extend my deepest condolences to Mrs Baumgardt's family for their loss and hope you and they will take some assurance from this letter setting out our response in relation to the concerning points you made in your Regulation 28 report.

Yours sincerely

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Chief Executive

Enc: New Trust document for undertaking checks during X-ray procedures;

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