Department Incident Number	Date	Site/Dose	Description of the Error	Corrective Actions	Actions Preventing Reoccurrence / Eliminating the cause	Apparent Causes	Detection Methods	Severity
19/09	22/05/2019	Prostate, 60Gy in 20#	TSRT9/Level3/11n/11t/13k/13hh/ CF1b Patient attended for fraction 12 of prostate radiotherapy. The patient was set up and imaged. When the CBCT image was matched, it was found to be out of tolerance. The set up in the room was checked by another radiographer and it was at this point it was discovered that the tattoos had been incorrectly located. The patient was reset up, imaged and treated correctly. As a result, this patient received 1 additional CBCT imaging dose. The estimated dose from this additional image is 30mGy and as such does not constitute a dose much greater than intended.	The reference tattoos were correctly identified, the patient reset up, imaged and treatment proceeded as planned	Staff will be reminded in team brief week beginning 24/06/19 of the importance of ensuring that all set up instructions are unambiguous and if any changes are made that this is clearly documented. On occasions when it is difficult to visualise / locate tattoos, it is good practice to involve another radiographer from the team who may be more familiar with the set up.	At the time of initial set up, the positions of the reference tattoos were incorrectly located and so the patient was not positioned correctly	Incorrect patient set up was detected on imaging	Insignificant

20/37	06/10/2020	Prostate 60Gys/20 fractions	TSRT9/Level3/13k/13hh/CF1c Patient was set up to anterior tattoo. A CBCT was acquired and matched. Match was out 2cms, assumed the patient had moved during the CBCT. Reset up the patient and realised that radiographers had set up to a mark, which was very similar to this man's correct tattoo. The patient was reset up to the correct tattoo. The CBCT was acquired and matched and treated accordingly.	Additional information written on data to highlight this patient has a mark on his skin very similar to a tattoo.	The team leader took the decision to reset up the patient according to protocol, as the match was outside of tolerance. This resulted in additional imaging of approx. 30 mGy. This is not reportable under SAUE guidance. Radiographers reminded in team brief 19.10.20 to be vigilant when identifying tattoos	The ROP measurement was not used in this instance, and it was difficult to distinguish between the tattoo and another marking on the patient's skin	Image analysis	Insignificant
20*08 Non / Conformity	05/03/2020	Pelvis and PA Nodes, 50.4Gy in 28#	TSRT9/Level5/10k/10l/CF1c Patient having pelvis (cervix) and PA Nodes treated. No xiphi tattoo present to enable positioning and ensure that the patient was straight on the bed. Documented on sim data xiphi tattoo present.	Positioning assessed by eye and imaged. Xiphi tattoo administered after imaging confirmation.	Reminder at pre-treatment team brief week beg 18/05/2020	Patient did not have a xiphisternum tattoo	1st day of treatment	Insignificant

20*11 Non / Conformity	10/06/2020	Spine, 8Gy in 1#	TSRT9/Level5/10j/10l/CF1c Patient was on treatment couch. Staff were checking for tattoos - there were pen marks still on patient from CT Sim. Planning data form stated previous OH @ xiphisternum but new lateral tattoos. Patient was scanned 1 week before starting XRT. There were no tattoos on the patient, consulted with Band 7. Skin marks from sim were still visible so set-up to skin marks and imaged - were within tolerance and treated patient correctly	As this patient was only receiving 1 fraction the new tattoos were not made. Pre-treatment section manager will be made aware of this for further action	Discussed with the CT staff member who should have carried out the tattooing procedure. They are aware at the importance in ensuring the tattoos are completed.	Area not tattooed.	Treatment set-up	Insignificant

21/66	13/12/2021	Prostate, 60Gy in 20#	TSRT9/Level1/13k/13hh/CF1c Patient attended for fraction 11 of prostate radiotherapy. The patient was set up and imaged. When this image was matched it was found to be out by 2cm laterally. As this shift was greater than gross tolerance it was necessary to reset up and reimage the patient as per imaging protocol. When radiographers went in to reset up the patient they realised that they had miss-identified the overhead tattoo, a blue/black mark was present on the patient's anterior pelvis which was in line with the lateral pelvis tattoos, and it was this mark which was used to set up the patient. Radiographers noted that this mark was 2cm lateral to the OH tattoo and so accounted for the large lateral displacement seen on the 1st image. The patient was reset up using the correct OH tattoo and reimaged. When matched this image was found to be within tolerance and so treatment was delivered as planned. At this fraction the patient received 1 additional CBCT image, with an estimated additional dose of 30mGy	Both radiographers agreed that it was difficult to clearly see the tattoo. It is also good practice to remove any existing pen marks from patient's skin so that the tattoo isn't obscured.	Radiographers advised to take time, to ensure the correct identification of tattoos. If it appears that the OH tattoo is off centred, the immobilisation data should be checked. A reminder for all staff will be put into team brief week beginning 17th January 2020 Notification form 1a, MPE report and action plans all forwarded to RQIA.	Incorrect identification of overhead tattoo	Image Analysis	Insignificant

21/86	08/02/2022	L Spine, 8Gy in 1#	TSRT9/Level1/12f/12g/13k/13l/13hh/CF2c/CF1e/CF1d Patient was scheduled to receive radiotherapy to two areas, sternum and L spine. At planning 2 sets of reference marks, (pt refused tattoos) were drawn on the patient's skin, one at Xiphisternum and another at her pelvis. The patient received radiotherapy to her sternum, using shifts taken from her xiphisternum reference marks. Radiotherapy to this area was delivered as planned. She was then set up for treatment to her L spine using pelvic tattoos. The immobilisation data form stated 2 sets of reference marks and the IGRT form for the sternum field stated use xiphisternum tattoos. The IGRT form for the L spine did not indicate which tattoos to use. There was, however, a note on the set-up field for the L spine field, "shifts from xiphisternum" which was missed. As a result, a kV Image was taken, and it was evident that the shifts taken were incorrect.	The pre-treatment section manager was in the treatment area, and advice was sought from her. She indicated that the xiphisternum tattoos should have been used for both treatment fields. The pt was re-set up, shifts taken from the correct reference marks and the pt received radiotherapy as planned.	When the shift was taken using the wrong tattoos the radiographers did not note that the field was not in the correct place for the site that was to be treated. The second set of reference marks could have been removed from the pelvis so that there was no possibility of them being used for treatment. The note regarding reference marks could have been put onto the IGRT form during the data prep stages. This will be conveyed to radiographers in team brief week beginning 28.2.22. “Sense” check will be added to treatment pause and check as per SOR template. CF9.4.3 Operators Checklist under	Two sets of reference marks were drawn on at planning. The L spine IGRT form did not state which reference marks to use.	Image Analysis	Insignificant

					IR(ME)R has been amended and re-issued 21.03.22 - staff also emailed with pause and check form attached to reinforce importance of "sense check" of reference marks during treatment set-up. No further action - incident closed as per RQIA.			

23/17	25.05.2023	Anal Canal, 53.2Gy in 28#	TSRT9/Level1/13k/13hh/MD13aa/ CF1cPatient attended for fraction 8 of radiotherapy. Patient was set up and image acquired. When this image was matched it was found to be out 2.12cm in the lateral direction. Patient was having treatment for anal canal cancer and due to the set-up arrangement, which included bolus to multiple areas, radiographers thought that the patient may have moved due to being uncomfortable. The patient was re-set up and imaged again and when matched was still out by 1.5cm laterally. Radiographers went back into the treatment room a third time, to re-examine the set up. They removed ink marks from the previous day to check tattoos and it was at this point they realised that they had identified an ink mark incorrectly as the tattoo. Tattoo was clearly identified, patient was reset up, reimaged and treated correctly. On this occasion the patient received 2 additional kV-kV image pairs	Tattoo was clearly identified, patient was reset up, reimaged and treated correctly. Staff have been advised that tattoos must be independently identified by both radiographers involved in treatment.	The identification of tattoos must be independently checked by both operators. Pen marks from previous treatments which may be obscuring the tattoo should be removed. Any set up photos provided should be accessed as an additional visual check of treatment marks. This will be added to team brief week beginning 5th June 2023.	The patient had a lot of previous marks on her skin from previous day's bolus around both groins. This was perhaps a contributory factor in this incident	Image analysis	Insignificant