NHS Wrightington, Wigan and Leigh Teaching Hospitals NHS Foundation Trust

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| STANDARD OPERATING PROCEDURE | CT Contrast Injector – Bracco Expres |
|---------------------------------|---|
| SOP ID NUMBER | TW25-005 SOP 3 |
| VERSION NUMBER | 1.1 |
| APPROVING GROUP | SS Divisional Policy and Leaflet Group |
| DATE THIS VERSION APPROVED | October 2023 |
| RATIFYING GROUP | PARG (Policy Approval and Ratification Group) |
| DATE THIS VERSION RATIFIED | October 2023 |
| AUTHOR(S) (JOB TITLE) | CT IMAGING MANAGER |
| DIVISION/DIRECTORATE | SPECIALIST SERVICES - RADIOLOGY |
| WHICH POLICY ASSOCIATED TO? | TW25-005 – CT Operational Policy |
| CONSULTED WITH? | Bracco Representative |

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| DATES PREVIOUS VERSION(S) RATIFIED | |
|---|--------------------|
| DATE OF NEXT REVIEW | October 2026 |
| MANAGER RESPONSIBLE FOR REVIEW (Job Title) | CT IMAGING MANAGER |

Our Values People at the Heart Listen and Involve Kind and Respectful One **Team**

VERSION CONTROL

| Version | Date | Amendment | | | | |
|---------|------------|--|--|--|--|--|
| 1.1 | April 2025 | New SOP ID number has been assigned from TW23-063 SOP – TW25-005 SOP 3. | | | | |
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1 INTRODUCTION

- 1.1 Iodinated contrast agents are routinely injected for the majority of Computed Tomography (CT) examinations. Iodinated contrast is used to enhance visualisation of blood vessels and structures on CT.
- 1.2 The use of intravenous contrast in radiology continues to increase (Royal College of Radiologists, 2015).
- 1.3 The CT Expres[™] Bracco Injector allows us to reduce the amount of contrast to the patient by only using a specific amount of contrast required per patient according to body mass index (BMI) and scan protocol.

2 SCOPE OF PRACTICE

- 2.1 The responsibility of injecting the intravenous contrast media has been delegated to suitably trained Radiographers. To ensure the safe administration of the contrast agents those persons administering them and those performing the imaging procedure must have a good understanding of their indications for use, contraindications, management of any adverse reactions.
- 2.2 The Radiographers must also understand the equipment and have training from a suitably trained Radiographer or from the manufacturer itself.
- 2.3 All Radiographers who have been trained must complete a "CT Expres[™] Bracco Injector Training" (Appendix 1) form which should be signed off by a Band 7 (or Senior band 6) Radiographer.

3 PROCEDURE FOR SETTING UP DAY SET

- 3.1 The day set must be changed 24 hours from first installation. There will be a countdown which will be visible on the injector screen stating when the day set needs to be changed. This should be completed by the night Radiographer at the end of the night shift. If this is not completed due to increased service demands, then this will be handed over for the day staff to complete. There will be prompts and a visual guide on the injector itself to show how to change the day set at each step. The following instructions should be safely followed:
 - 3.1.1 Insert the day set "T connector" into its slot (under the start button) until it "clicks" into place. It should be inserted so there are 2 lines on the left and a single line on the right.
 - 3.1.2 Once the "T- Connector" is in place, the 2 contrast day lines must then be put into place. By using the blue clamp buttons, unclamp and insert the 2-contrast day set lines into place. To insert the day set tubing, use the butterfly wings, insert the day set lines with a 30 degree upward angle into each tubing guide. Confirm on the injector screen when this has been done.
 - 3.1.3 Insert the final line into the saline tubing guide. Again, to do this, press the blue unclamp button, press the butterfly wings together and insert with an upward angle. Once installed, confirm the message on the screen. This will ensure all the clamps are closed and proceed to the next step.
 - 3.1.4 Following the instructions on the screen, the next step is to install saline. Using aseptic non touch technique (ANTT) remove the protective cover off the saline bag and insert the spike from the day set line. Hang the saline bag on the saline hook on

the injector. Fill the reservoir completely with saline. If the reservoir is not filled this may cause air alarms. Fill the reservoir by squeezing it until full.

- 3.1.5 A message on the injector screen will pop up to check that the volume of saline is correct. If correct, then press the tick. If not, you can manually enter the correct volume.
- 3.1.6 To install the contrast media bottle, remove the protective plastic ring pull seal (do not remove the rim). Open bottle spike, making sure not to touch the spike directly or to exert any pressure on the tip of the bottle spike.
- 3.1.7 Position the contrast bottle on a flat surface and pierce the bottle seal with the bottle spike ensuring not to touch any part of the spike. Make sure that the spike is fully inserted into the bottle and the spike is fully pushed into the bottle.
- 3.1.8 To insert the contrast into the bottle holder, position the flat surface of the bottle spike facing forward and insert the bottle fully. Secure the bottle by fitting a bottle insulator on top and turn the insulator clockwise to lock it in place. Repeat for the second bottle.
- 3.1.9 To remove air from the left and right reservoirs press the blue "clamp" button and whilst holding it squeeze the reservoir clamps underneath each contrast media bottle 2 or 3 times until all air has been removed.
- 3.1.10 Once you have installed the contrast bottle select the latest container installed on the CT Expres control panel and follow on screen instructions.

4 PROCEDURE FOR SETTING UP PATIENT SET

- 4.1 A patient set must not be installed until the patient is in the room and is ready to be connected to the injector. The patient set is single use only and must not be used for more than one patient. To install a patient set, complete the following steps:
 - 4.1.1 Open the patient set and do not remove the protective cap off the patient connector. Ensure the pinch clamp is open on the cassette.
 - 4.1.2 Insert the patient set cassette into the port in the front of the CT Expres by sliding the cassette into place. The cassette should click into place.
 - 4.1.3 The CT Expres will ask if you would like to fill the patient set with contrast or saline. Select saline and the patient set will automatically fill with saline. Ensure the patient connector is covered as saline will flush through the line to prevent air bubbles.
 - 4.1.4 Once the patient set has been filled with saline, clamp the patient set and position the patient connector on the holder.
 - 4.1.5 Check the line for air bubbles and once confirmed there are no buttons then please select the verification tick on the control panel. The patient set is now ready to be used with your patient.

5 USING PATIENT SET

- 5.1 The patient set can then be connected to the patient's cannula. Once the patient's cannula is connected to the patient set, the patency of the line can be checked using the injector by injecting a saline flush. This means that the Radiographer does not need to flush with a separate syringe of saline unless they are uncertain regarding the patency of the line.
- 5.2 Once the scan and contrast injection has been completed the line is automatically flushed with 20mls of saline.

6 DISPOSING OF PATIENT SET

- 6.1 Patient sets are single use only. When you have finished with your patient, you must disconnect the patient line from the patient straight away and remove the cassette immediately from the injector.
- 6.2 To remove press the unlock button twice, a red light will be displayed when you are able to remove the cassette. Remove the patient set cassette from the CT Expres. Dispose of this in a yellow contaminated waste bin.

7 HUMAN RIGHTS ACT

Implications of the Human Rights Act have been taken into account in the formulation of this document and they have, where appropriate, been fully reflected in its wording.

8 INCLUSION AND DIVERSITY

This document has been assessed against the Equality Impact Assessment Form from the Trust's Equality Impact Assessment Guidance and as far as we are aware there is no impact on any protected characteristics.

9 MONITORING AND REVIEW

- 9.1 This standard operating procedure will be reviewed every 2 years in line with policy monitoring and review arrangements.
- 9.2 Annual audit of the key performance measures detailed within this Standard operating procedure (SOP) will be undertaken (appendix 2).
- 9.3 Clinical divisions will be responsible for ensuring action plans are completed and evidence of completion of actions is provided.

10 ACCESSIBILITY STATEMENT

This document can be made available in a range of alternative formats e.g. large print, Braille and audio cd.

For more details, please contact the HR Department on 01942 77 3766 or email equalityanddiversity@wwl.nhs.uk

Equality Impact Assessment Form

STAGE 1 - INITIAL ASSESSMENT

List Negative / Positive Impacts Sexual Orientation For each of the protected Religion / Belief Race / Ethnicity Disability (hearing / visual / physical / learning disability / Marriage / Civil Group Below ø (Gay/Lesbian/ Bisexual) Partnership characteristics listed answer the male / female / Assignment Gender Remental health) transgender) Pregnancy Maternity (18 years+) Carers questions below using Sex Age Other Y to indicate Yes and **N** to indicate No Does the policy have the potential Ν Ν Ν Ν Ν Ν Ν Ν Ν Ν Ν to affect individuals or communities differently in a negative way? Is there potential for the policy to Ν Ν Ν Ν Ν Ν Ν Ν Ν Ν Ν promote equality of opportunity for all / promote good relations with different groups - Have a positive impact on individuals and communities. Ν Ν If Yes: Please state how you are In relation to each protected Ν Ν Ν Ν Ν Ν Ν Ν Ν characteristic, are there any areas going to gather this information. where you are unsure about the impact and more information is needed? **CT IMAGING MANAGER** 06/10/2023 Job Title Date

IF 'YES an NEGATIVE IMPACT' IS IDENTIFIED - A Full Equality Impact Assessment STAGE 2 Form must be completed. This can be accessed via http://intranet/Departments/Equality Diversity/Equality Impact Assessment Guidance.asp

Please note: As a member of Trust staff carrying out a review of an existing or proposal for a new service, policy or function you are required to complete an Equality Impact Assessment. By stating that you have <u>NOT</u> identified a negative impact, you are agreeing that the organisation has <u>NOT</u> discriminated against any of the protected characteristics. Please ensure that you have the evidence to support this decision as the Trust will be liable for any breaches in Equality Legislation.

Appendix 1

POLICY MONITORING AND REVIEW ARRANGEMENTS

| Para | Audit / Monitoring requirement | Method of Audit / Monitoring | Responsible person | Frequency of Audit | Monitoring committee | Type of Evidence | Location where evidence is held |
|------|-----------------------------------|---|-----------------------|-----------------------|-------------------------|---------------------|---------------------------------------|
| 2.3 | Training completed | Training Sheet completed and kept within injector file. | CT Imaging Manager | Annual | Audit Meeting | Completed Forms | CT Department |

| C | С Expresтм В | racco Injector | Training | |
|----------|---|--------------------------|----------------------------------|--|
| 1. | Explanation of power on/ | off | | |
| 2. | Explanation of System co | | | |
| 3. | Injector Head controls an | d components explained: | | |
| 4. a) | Syringe Loading and fillin Inserting day set | | | |
| | Connecting Contrast | | | |
| () () | Inserting and changing u | atient set (emphasis mad | e to only replace set when a new | |
| u) | patient is on the scanner) | | | |
| 5. | Display control panel exp | lained. | <u> </u> | |
| a) | Flow Rates | | | |
| b) | י ס) Checking Pressure limit | | | |
| 6. | Troubleshooting | | | |
| Com | oleted: Yes / No | Signed (Trainer): | | |
| Date | | Signed (Trainee): | | |
| | | | | |