The National Cancer Imaging Translational Accelerator (NCITA) is a UK network of medical imaging experts and scientists building a unified infrastructure for discovery, validation and adoption of cancer imaging biomarkers into clinical trials and the NHS. The objective is to provide a UK national infrastructure for the development of quality assured cancer imaging biomarkers for clinical use.

NCITA is cross-institutional and leverages the core strengths in medical imaging techniques and chemistry of nine NCITA partners:

- Imperial College London
- King's College London
- Newcastle University
- University College London
- University of Cambridge
- University of Glasgow
- University of Oxford
- The Institute of Cancer Research & The Royal Marsden NHS Foundation Trust
- The University of Manchester

The NCITA QA/QC Unit, in conjunction with the NCITA Image Repository Unit and Imaging Clinical Trials Unit, aims to provide robust validation, standardisation, quality assurance and quality control methods for the development of imaging biomarkers from first-in-human studies to multi-site reproducibility assessment. The NCITA QA/QC Unit will focus on the establishment of an MRI Core Lab to facilitate the validation and standardisation of cancer MR imaging biomarkers.

The survey is designed to ascertain where the UK currently stands in terms of available MRI equipment and current QA/QC practice, so that we can establish the best way to support current and future studies. As such, we would like this survey to be completed by a representative from all UK-based clinical MRI institutions/centres that perform research studies.

Please contact us at ncita.qaqc@ucl.ac.uk with any queries.

To stay up-to-date with NCITA news see: ncita.org.uk and follow us on Twitter @imaging_cancer

NCITA | National Cancer Imaging Translational Accelerator
1. Name

2. Role in institution
   - Imaging Scientist (clinical role)
   - Imaging Scientist (research role)
   - Radiographer
   - Imaging Facilities staff member
   - Other, please specify

3. Institution/department address

4. Institution type
   Tick all that apply
   - University
   - NHS hospital trust
   - Private clinic/Independent sector
   - Other, please specify

5. Email address

6. Significant imaging research areas at your institution/centre
   Tick all that apply
   - Cancer Imaging
   - Neuroimaging
   - Cardiovascular
   - Musculoskeletal
   - Other, please specify
MRI Quality Assurance/Quality Control Survey for the National Cancer Imaging Translational Accelerator (NCITA)

This survey relates to CLINICAL RESEARCH MRI SCANNERS* used to conduct research on HUMAN SUBJECTS; in vitro and animal studies are not included. Please complete this survey for the SUB-GROUP of scanners at your Institution that use the same or similar QA/QC acquisition procedures.

*MRI-PET scanners should only be included if used for performing MRI only studies. MR-Linac are NOT included in this survey.

7. **How many clinical research MRI scanners do you have available at your institution/centre?**
   Please fill in as many as are relevant and add any additional information in the box below.

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Strength</th>
<th>Usage</th>
<th>Coils</th>
<th>Years since installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scanner1</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Scanner2</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Scanner3</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Scanner4</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
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</tr>
<tr>
<td>Scanner5</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Scanner6</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Scanner7</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
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<td>-- Please Select --</td>
</tr>
<tr>
<td>Scanner8</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Scanner9</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Scanner10</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
</tbody>
</table>

8. **Additional information about clinical research MRI scanners (optional).**

9. **What ancillary equipment do you have for your clinical research MRI scanners?**
   Tick any that apply for one or more of the scanners listed above.
   - [ ] Contrast injector
   - [ ] Piped medical air supply
   - [ ] Piped oxygen supply
   - [ ] Piped carbon dioxide supply
   - [ ] Bottled medical air
   - [ ] Bottled oxygen supply
   - [ ] Bottled carbon dioxide supply
   - [ ] Projector and screen
   - Other, please specify

10. **Do you have research agreements with the vendors for your clinical research MRI scanners?**
    - [ ] All
    - [ ] Some
    - [ ] None
11. What kind of MRI physics support do you have for your clinical research MRI scanners?
- Onsite MR physicist
- Externally contracted MR physicist
- Data analysis support
- Vendor clinical scientist
- Other, please specify

12. Do you have sufficient access to your clinical research MRI scanners to allow quality assurance phantom scans to be performed?
- Yes
- No
- Please give details

13. What quality assurance data is acquired and processed for the MRI clinical research scanners at your institution/centre?
- Data obtained with the vendor’s QA procedure, using vendor sequences and phantoms
- Other general metrics e.g. SNR, uniformity, geometry using 3rd-party/in-house phantoms
- Quantitative MR metrics e.g. ADC, T1 using 3rd-party/in-house phantoms
- Other, please specify

14. What MRI phantoms/test objects does your institution/centre have available and how often are they used?
Please fill in as many as are relevant. For extra phantoms and/or usage details or for those not listed please add details in the box below.

<table>
<thead>
<tr>
<th>Phantom</th>
<th>Phantom design</th>
<th>Phantom type</th>
<th>Frequency of use</th>
<th>Coils tested</th>
<th>Age in years (if known)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phantom1</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Phantom2</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Phantom3</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Phantom4</td>
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<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Phantom5</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Phantom6</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Phantom7</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Phantom8</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Phantom9</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
<tr>
<td>Phantom10</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
<td>-- Please Select --</td>
</tr>
</tbody>
</table>

15. Additional information about phantoms (optional).

16. Does your site have documented procedures detailing equipment use, maintenance and quality assurance?
- Vendor documentation
- Site-specific documented procedures/SOPs
17. What quality assurance procedures are carried out when scanner maintenance or an upgrade takes place during a research study?

- Qualitative phantom scan pre/post
- Quantitative phantom scan pre/post
- Qualitative volunteer scan pre/post
- Quantitative volunteer scan pre/post

Other, please specify

18. How are local records - such as acquisition forms and safety forms - completed and stored?

- Print, fill in, store hard copy
- Print, fill in, scan, store electronically
- Record electronically, print, store printed copy
- Record and store electronically

Other, please specify

19. What MRI methods have been used in research studies at your institution/centre?

Only detail methods used over the past 5 years. For extra methods and/or QA details please add details in the box below.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Quality assurance</th>
<th>QA schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arterial Spin Labeling</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>Chemical Exchange</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>Saturation Transfer</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>Diffusion Tensor Imaging</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>Diffusion Weighted Imaging</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>Dynamic Contrast-Enhanced Contrast</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>Dynamic Susceptibility Contrast</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>fMRI/BOLD</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>T1/T2</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>Sodium imaging</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>Oxygen-enhanced</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>Phase contrast</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>Phosphorus spectroscopy</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>Quantitative Susceptibility Mapping</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>T1/R1</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>T2/R2</td>
<td>Not used</td>
<td>Not used</td>
</tr>
<tr>
<td>T2*/R2*</td>
<td>Not used</td>
<td>Not used</td>
</tr>
</tbody>
</table>

20. Additional information about MRI methods (optional).

21. What is the typical pseudo-anonymisation procedure for your research scans?

- On acquisition
- On site, using anonymisation software
22. **How is data typically transferred off site?**

Tick all that apply:

- [ ] Non-encrypted external hard-drive or pen-drive
- [ ] Encrypted external hard-drive or pen-drive
- [ ] XNAT
- [ ] PACS
- [ ] Cloud service
- [ ] Electronic transfer
- [ ] Image Exchange Portal (IEP)
- [ ] DVDs

Please give details

23. **What quality management procedures are in place to oversee the data analysis stage at your institution/centre?**

Tick any that apply:

- [ ] SOPs governing data analysis
- [ ] Data receipt forms
- [ ] Data analysis pro forma lab book records
- [ ] Data quality pro forma lab book records
- [ ] Data processing records
- [ ] Scan protocol deviation checks
- [ ] Scan data quality checks
- [ ] 2nd person reviews of ROIs
- [ ] Data analysis validation checks
- [ ] 2nd person reviews of results
- [ ] Data analysis record checks and final data reviews
- [ ] Data transmission check

Other, please specific

24. **How is data typically analysed at your institution/centre?**

Tick any that apply:

- [ ] Vendor's software
- [ ] Commercial software
- [ ] Spreadsheet
- [ ] Vendor's software with in-house plugin
- [ ] Imaging freeware
- [ ] In-house code

Please give details

25. **Does your institution/centre have a software quality management system or code review procedure in place for in-house software?**

Please indicate which staff group is responsible for maintaining software.

- [ ] Yes
- [ ] No

Please give details
26. **Is there any other information you would like to tell us about your quality assurance and quality control procedures?**

What do you do that everyone else should do? What do you think should be encouraged for imaging biomarker research trials?

NCITA's focus is on supporting cancer research imaging studies. The QA/QC Unit will be developing an MRI Core Lab to facilitate the adoption of cancer MR imaging biomarkers into clinical trials and the NHS.

27. **What activities from an NCITA MRI Core lab would you consider using?**

- [ ] Study set up
- [ ] Protocol development and harmonisation
- [ ] Imaging data review/quality control
- [ ] Implementation of a robust analysis pipeline for quantification
- [ ] Documentation training
- [ ] Imaging biomarker validation and optimisation
- [ ] Access to a Quality Management System
- [ ] Other, please specify

****************************************************************************************************************************************

**PRIVACY NOTICE**

- In addition to your responses with regards to QA/QC on your institution's MRI scanners, we also requested some personal information about you.
  - We ask consent to:
    - retain your name, email address, institution address and your role in that institution
    - contact you to discuss the results of the survey.
  
- We will securely store this data until the end of the study, no later than December 2025.
  
- We respect and trust your privacy. You are free to withdraw at any time without giving a reason and you can request a copy of the information we hold about you.
  
- If you would like to know more about your different rights or the way we use your personal information to ensure we follow the law, please consult the Privacy Notices of the Data Controller ([University of Manchester](https://www.manchester.ac.uk/)) and the Study Sponsor ([NCITA](https://www.ncita.org/)).
  
- If you have any questions or change your mind, please contact the NCITA QA/QC Unit Manager: ncita.qaqc@ucl.ac.uk

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28. **Can NCITA keep on record any details given on page 2?**

- [ ] Yes
- [x] No

29. **Are you happy for NCITA to contact you to discuss the results of the survey?**

   If so, please ensure your details have been completed.

- [ ] Yes
- [ ] No