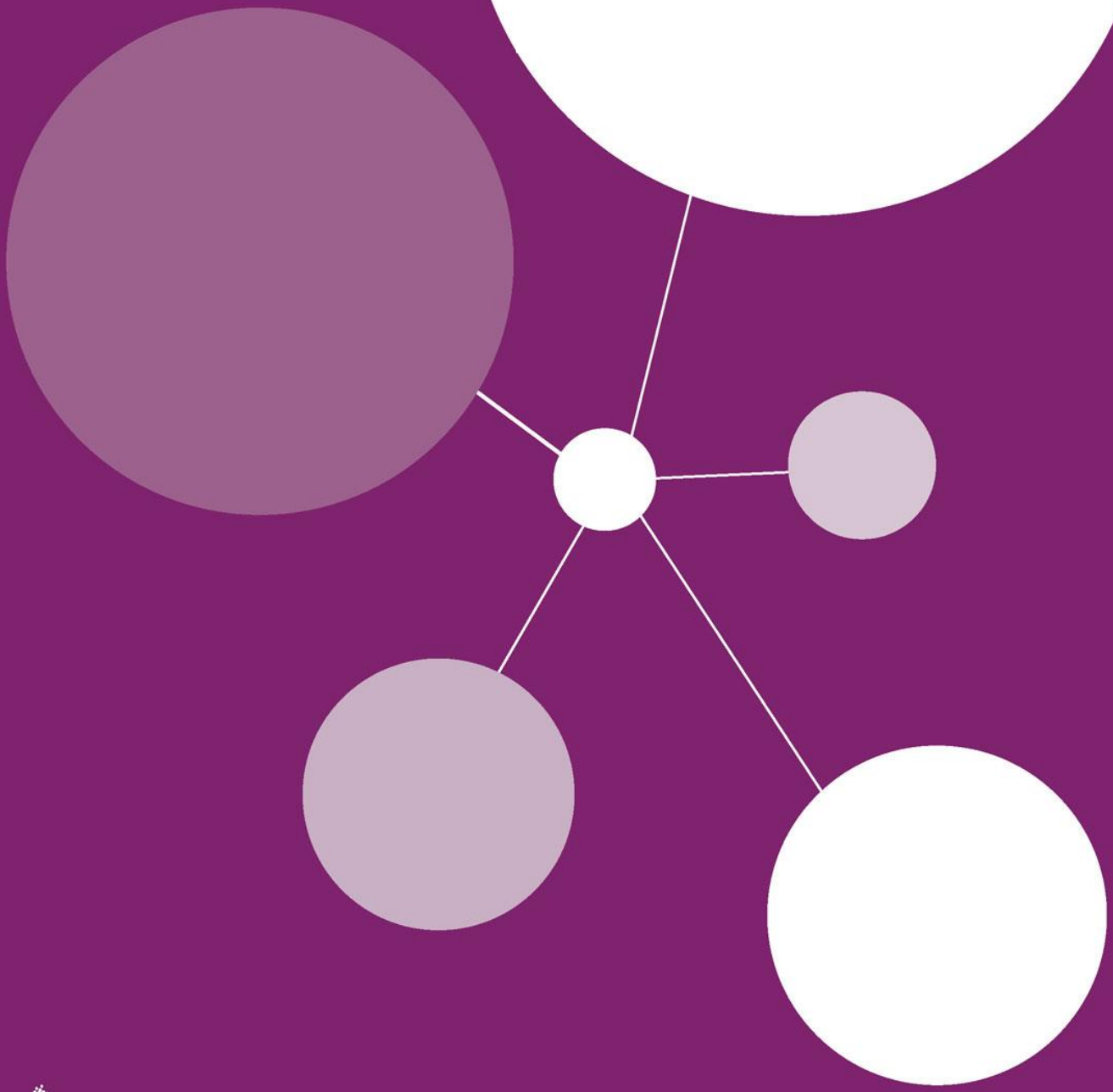
NCRI
National
Cancer
Research
Institute

NCRI Imaging Advisory Group

Annual Report 2015-16



Partners in cancer research

National Cancer Research Institute (NCRI)
Imaging Advisory Group

Annual Report 2015-16

List of Appendices

NCRI Imaging Advisory Group Annual Report 2015-16

1. Introduction

The Imaging Advisory Group was formed as a cross-cutting group to bring together imaging expertise across the clinical specialty groups. The rationale for this was that many of the imaging issues recurring in the development and execution of clinical studies were common to the different tumour types. Although a small number of the CSGs have an imaging subgroup, it was felt there was merit to try to bring some synergy and explore whether or not an overarching group could identify common themes that needed to be addressed and provide advice, particularly to those CSGs where there was not a radiologist on the CSG or where an imaging subgroup did not exist.

One of the aims of the Imaging Advisory Group was to try to ensure imaging was used appropriately in clinical trials, either in the imaging investigations for entry phenotyping or as surrogate endpoints in the development of imaging biomarkers. To fulfil this aim, the Imaging Advisory Group provide a service to all CSGs, irrespective of whether or not there is an imaging subgroup, to provide advice on the type of imaging that might be helpful in a particular trial proposal.

2. Membership of the Advisory Group

The Group was identified from the previous NCRI Biomarkers & Imaging CSG. It aimed to represent different tumour types, different imaging expertise and different geographical areas. The Group has met face-to-face on two occasions and has had two conference calls. As the individuals are working across different tumour areas and different imaging modalities, there is little overlap of the Group at national meetings which makes ad hoc meetings difficult.

3. Progress towards delivery of remit

In order to facilitate the provision of imaging advice, the NCRI Executive set up an effective trials registration mechanism which allowed individual PIs to request support from the Imaging advisory group. The PI submits a brief summary of the trial which is forwarded to the chair. This is then distributed to appropriate members who have a particular expertise that is relevant to that particular research question. As the Imaging Advisory Group is limited to 10 members, the NCRI facilitated the development of a group of 25 imaging experts chosen as they covered a wide range of imaging expertise and all tumour types.

Approximately 10 requests have been made through the NCRI study registration mechanism and these have been sent out to the various members of the extended Advisory Group. The requests have covered many tumour types and are very varied in the type of information being sought. The response has been variable from the Imaging Advisory Group as sometimes the request was outside their expertise. Responses were copied to the NCRI Executive so this system could be audited.

In general, the input of the imaging experts tended to be a one off piece of advice and there have been few invitations for the expert to become a member of that particular study.

An annual workshop was planned but has not been delivered this year. This is mainly due to lack of funding to support this.

4. Links to other groups

The NCRI Imaging Advisory Group links to the Royal College of Radiologists Academic Committee. This committee promotes the development of academic radiologists and research-ready NHS radiologists by interacting with the radiology training programmes and promoting research training and projetcs through the running of the Research Certificate, research sessions at the Annual Scientific meeting, and pump priming funding schemes for imaging research projects.

The Cancer Imaging Centres funded by the EPSRC and CRUK have annual meetings and the imaging advisory group attend these meetings to facilitate their aim of developing multicentre imaging trials. There are on going discussions to meet this aspiration.

The NIHR CRN Imaging Strategy Group led by Professor Stephen Smye has been formed to promote research with new imaging technologies; working with Partners to develop and implement a plan which will drive better delivery of imaging-led and imaging-supported clinical research in the NHS.

The plan will include:

- A review of the NIHR CRN portfolio for imaging-led and imaging-supported studies.
- An assessment of current investment in CRN imaging research infrastructure.
- Working with Partner organisations including industry, Royal Colleges and major research funders to develop capacity to deliver imaging research in the NHS.
- "Horizon scanning" for novel imaging science and technologies which is likely to contribute to future translational clinical research.

The NIHR recognises the need to create additional academic posts in imaging. Discussions have taken place and they are funding an imaging day for academic trainees at the RCR.

5. Additional outcomes of the Advisory Group

There is a need to develop research imaging respositories to facilitate the reuse of trial data including medical images for data mining. The CICs have taken this on but need to include the wider community. There is not a robust mechanism in place to archive images from trials and link them with the meta data from the trial and this needs to be put in place. On going disussions are taking place to deliver this important facility and senior NCRI input would be welcome.

An NIHR Academic training day is being held on 13 July at the Royal College of Radiologists to promote academic radiology, provide a networking opportunity for ACFs and CLs and to give information on future career options.

The Early Diagnosis Subgroup of the Breast CSG and the Imaging Advisory Group are meeting to plan a stratified screening approach for breast cancer. Meetings have been held with the breast screening service and a multidisciplinary meeting will take place in September with the aim of identifying the research gaps and developing research proposals.

A workshop was hosted by the RCR with Microsoft to enable a high level discussion on machine learning. Discussion focussed on the development of useful tools that could be produced from large imaging datasets. The cancer trials datasets were perceived to be of importance in this goal.

6. Future plans for the Advisory Group

The advisory role for clinical phase II/III trials should be continued. The trials registration mechanism appears to work well and should be assessed to determine how often the imaging advice is adopted.

The imaging repository needs to be supported, developed and tested for different imaging modalities (e.g. MRI, CT, PET-CT) and in different tumour types. This can be tested by different clinical trials with different imaging modalities.

The NCRI funded national PET quality assurance service is working well and provides an excellent service. A similar mechanism should be put in place for MRI and CT. This would encourage standardisation of image acquisition sequences allowing more generic image analysis. This is now of particular importance to allow pooling of imaging trial data in the future. This could be mined for imaging biomarkers and machine learning.

Standardisation of imaging protocols is a continuing aspiration – this is of different level of difficulty depending on the imaging modality. This requires to be undertaken at two levels, one is for standard NHS imaging and the other is imaging in research trials.

Appendix 1

Membership of the Imaging Advisory Group

Name	Specialism	Location
Professor Fiona Gilbert (Chair)	Radiologist	Cambridge
Professor Alan Jackson	Radiologist	Manchester
Professor Iain Lyburn	Radiologist	Gloucestershire
Dr Gina Brown	Radiologist	London
Professor Edwin Van Beek	Radiologist	Edinburgh
Dr Kevin Bradley	Radiologist	Oxford
Professor David Buckley	Professor of Medical Physics	Leeds
Professor Nandita de Souza	Radiologist	Surrey
Dr Adam Waldman	Radiologist	London
Mrs Christine Allmark	Consumer	Yorkshire

Imaging Expert Advisory Panel		
Name	**Tumour types**	**Imaging Modality**
Dr David Landau	Lung Cancer	Imaging pertaining to radiotherapy, planning, respiratory Motion, novel imaging techniques (e.g. heterogeneity, fMRI, MRE, novel PET tracers) in translational studies
Professor Harish Poptani	Brain tumors & Head and Neck cancers	MRI and MR spectroscopy
Professor Luc Bidaut	Imaging (all modalities and combinations, alongside their processing, analysis and applications) and associated technology (e.g. the use thereof to detect, diagnose, intervene and monitor). These are especially relevant to cancer, albeit without any specific type or organ as these areas are applicable to most.	
Dr Samantha Mills	Adult Neuro-oncological Brain and CNS (inc. spinal tumours) for primary and metastatic disease	MRI (inc T1 & T2 perfusion, DTI and spectroscopy, oxygen enhanced MRI). CT conventional and advanced (perfusion) imaging expertise
Professor Phil White	CT/MR brain & spine imaging and tumours of neuraxis	
Dr Anthony Maxwell	Breast	mammography (inc. tomosynthesis), ultrasound, MRI and interventional diagnostic and therapeutic techniques
Dr Christina Messiou	Soft Tissue Sarcoma and Myeloma (some other areas in Melanoma)	MRI and CT
Dr Tristan Barrett	Prostate, kidney, bladder	MRI, CT
Dr Stavros Stivaros	Paediatric brain tumour	MRI and CT including genetic tumour predisposition syndromes such as NF1, NF2 and TS, etc.
Professor Margaret Hall-Craggs	Sarcomas and gynaecological tumours.	MRI
Dr Kieran McHugh	Paediatric oncology - Wilms' tumours, neuroblastoma, rhabdomyosarcoma, Ewing's tumours /PNET family	
Dr Richard O'Connor	Ovary, Uterus, Cervix, Lymphoma, Breast, Colorectal, Melanoma,Thyroid, Testes, Lung	CT, U/S, MRI, Nuclear Medicine Interventional radiology
Dr James O'Connor	Lung cancer, Ovarian cancer,Colorectal cancer	MRI, Advanced image analysis, Tumour heterogeneity, Preclinical imaging
Dr Ferdia Gallagher	Work on most tumours but specifically prostate, ovary, breast	MRI, Hyperpolarised imaging and molecular imaging

Dr Dow-Mu Koh	Gastrointestinal and hepatobiliary malignancies; pancreatic cancer, lung cancers and metastatic prostate cancer	Body MRI, especially diffusion-weighted MRI and functional MRI techniques.
Dr Gabriella Baio	Breast cancer, haematological malignancies and prostate cancer	MRI, PET/CT and CT, molecular imaging tracer (PET and MRI compounds).
Dr Steve Gwyther		
Dr Jai Patel		
Dr Thomas Booth	Brain tumours	All imaging modalities
Mr Robert Thurstans (Consumer)		

Appendix 2

Group remit

Following the restructure of the Biomarkers & Imaging Clinical Studies Groups (CSG) two new advisory groups were formed:

- Molecular Biomarkers Advisory Group
- Imaging Advisory Group

This paper outlines the role of the Advisory Groups, how it will function and expectations of the Group members.

Role of the Advisory Groups

The role of the Advisory Group will be to:

- Provide *ad hoc* advice on biomarkers/imaging in late phase clinical trials to CSGs and others. Specifically, members of the advisory group will provide advice for trials involving biomarkers/imaging and conduct peer-reviews of the biomarker/imaging component of trials
- Run an annual educational workshop (max capacity: 80 pax) for the biomarker/imaging community

Advice on Trials/Peer review

Trialists will be required to complete a trials registration form, which will be available on the NCRI website. The NCRI CSGs Administrator will forward the completed form to the Chair, who will essentially act as a "filter" and send the trial query to a relevant member of the Advisory Group. The NCRI restricts advisory group members to 10, but to enable the advisory group to function effectively, the Chair may hold an extended list of experts and redirect queries as necessary.

Format of the workshop

The format and content of the workshop will be planned and decided by advisory group members, and they may wish to include a short closed meeting for the advisory group.

What is expected of advisory group members?

Chair

- Maintain general oversight of the group's advisory activities, redirecting any queries where necessary
- Take minutes and record attendance at teleconferences and annual closed meeting and send to NCRI CSG Administrator
- Provide specialist advice to trialists when requested either directly or through advisory group members
- Prepare and submit annual report
- Plan annual workshop structure and provide details of speakers/extra guests to the Research Project Officer

Members

- Provide specialist advice to trialists when requested
- Assist chair in preparation of annual report
- Assist chair in planning annual workshop format, suggesting topics/speakers/extra guests as necessary.

Members will be asked to step down from the advisory group if:

- They do not provide timely advice to trialists when requested

- They are unavailable for three consecutive meetings (teleconference or annual meeting)

How will success of the advisory group be measured?

A CSG is evaluated yearly using the annual reporting procedure, with more thorough quinquennial review. The advisory group will be required to report on activities in these same timescales, although a more relevant set of metrics as a marker of success will be developed. The metrics for success will be based around:

- The number of trialists seeking and gaining advice from the advisory group
- Involvement of biomarker experts in the trials going forwards – was a one-off piece of advice given or has the involvement been longer-term?
- Others to be agreed following discussion with the advisory groups

Membership rotation and appointment of Members

Rotation

Members are appointed in their own right for three years in the first instance and for a further two years if re-appointed. If all members of a Group are appointed at the same time the Chair should determine in discussion with Group members and the Head of the Clinical Studies Groups, the phasing of membership to ensure continuity within the Group.

Adverts for rotating and new members are placed on the NCRI and NIHR websites, in the winter and summer of each year and circulated to all networks. In addition adverts may be placed in other journals, newspapers and websites subject to the agreement of the Head of the Clinical Studies Groups and availability of funds.

Members due to rotate receive a letter from the Secretariat prior to the advert being placed. Group members receive details of who is due to rotate and when, as part of their meeting papers. Current members due to rotate who have neither submitted an application nor indicated their intention to reapply/not reapply are followed up by the Secretariat.

Appointment

A panel consisting of the following will review applications and appoint accordingly:

- NCRI Clinical Director or nominated Associate Director or ex-Member of NCRI CSG >3 years or ex-CSG Chair of >5 years (To chair the panel)
- Chair of NCRI Advisory Group
- Head of the NCRI Clinical Studies Groups Secretariat

The selection panel meets via teleconference. Applicants are informed of the outcome in writing and successful applicants invited to the next Advisory Group Teleconference.

Attendance of members

The Secretariat keeps records of attendance of all members. Details of attendance at the last three meetings will be routinely presented as part of each set of meeting papers. Members who have failed to attend three consecutive meetings will have their continued membership considered and be asked to leave the Group. The Secretariat will write to such non-attendees. Members who fail to attend two consecutive meetings may be written to by the Secretariat at the discretion of the Chair.

What role will consumers play in the advisory groups?

The role of consumers will be discussed with the advisory groups once they have been established.