U.K. Radiopharmacy Group

The Responsibilities of Chief Pharmacists for the Purchase, Receipt, Storage, Supply and Disposal of Radiopharmaceuticals

Jilly Croasdale and Alison Beaney, on behalf of the UK Radiopharmacy Group and the NHS Pharmaceutical Quality Assurance Committee, Edition 2, February 2017.

Introduction

In most NHS organisations, the purchase of medicines falls under the remit of the Chief Pharmacist (or similar title e.g. Clinical Director of Pharmacy) as the person responsible for the safe use and custody of medicines within that organisation.

EEC Directive 2001/83[1] defines a medicine as 'any substance or combination of substances which may be administered to human beings or animals with a view to making a medical diagnosis or to restoring, correcting or modifying physiological functions in human beings or animals'. Therefore, applying this definition, radiopharmaceuticals are medicines.

Usual practice for procurement of medicines would be for the Pharmacy Department to carry out the purchase, receipt and subsequent storage of medicinal products until prescribed or requested by a ward or department. However, radiopharmaceuticals are often purchased, received and stored outside of pharmacy as:

1. The medicines in this case are radioactive and need to be stored in controlled radiation areas.
2. The products are often purchased for use the same day and are regularly used for manufacture or dispatched before the Pharmacy department is open.
3. The ordering requires specialist knowledge of decay profiles of each isotope.
4. Any disposal requires a particular process.

Purchase arrangements will vary. It may be carried out by the Radiopharmacy, which may or may not be part of the Pharmacy Department, or by the Nuclear Medicine department itself should there not be a Radiopharmacy on site. It is important to remember that even when the ordering and receipt functions are carried out elsewhere, the responsibility for the safe use of the medicines for most hospitals will remain ultimately with the Chief Pharmacist.

This may result in the Chief Pharmacist being responsible for activities outside his or her area of direct managerial control.

It is therefore accepted that, in some circumstances, the day-to-day responsibility for safe and secure handling of radiopharmaceuticals may be devolved (for example to a Radiopharmaceutical Scientist or Nuclear Medicine Consultant). This situation should be formally documented.

In order to provide the Chief Pharmacist with assurance that all devolved activities relating to procurement, storage, manufacture/preparation and use of radiopharmaceuticals are being carried out in compliance with Regulatory requirements and Good Practice guidelines, it is recommended that one or more Technical (Quality) Agreements be put in place as necessary for the specific situation. Agreements should define the responsibilities of all stakeholders, along with the agreed practice of all parties involved in the ordering, purchase, receipt, storage and end-disposal of radiopharmaceuticals. An example of a technical (quality) agreement in relation to the purchase of starting materials for the preparation of radiopharmaceuticals is provided in Appendix A for information.

Responsibilities

Various stakeholders will be involved on a day-to-day basis, and their duties may vary in different departments. In addition to the Chief Pharmacist and the Radiopharmacy or Nuclear Medicine Lead, stakeholders are likely to include the ARSAC Licence holder, the Radiation Protection Advisor (RPA), The Medical Physics Expert (MPE) and the Radioactive Waste Advisor (RWA). It is important that these responsibilities are defined and documented.

Procurement

There are a variety of different arrangements in place across the country, depending on whether radiopharmaceuticals are manufactured / prepared on site or are bought in, whether the Radiopharmacy is part of the Pharmacy department or not, and whether or not they have a Manufacturers' Specials Licence from the Medicines & Healthcare products Regulatory Agency (MHRA). Some of the more common scenarios are described below:

1. Manufacture takes place in a Specials' licensed non-pharmacy run Radiopharmacy department.
2. Preparation takes place in a Section 10 exemption unit run under the supervision of a pharmacist – this may be part of the Pharmacy Department or could be within the Nuclear Medicine department.
3. Nuclear Medicine departments order and receive multi-dose vials from external radiopharmacies and draw up the doses themselves.
4. Radiopharmaceuticals are received from external radiopharmacies or commercial companies (for finished radiopharmaceutical products) and the procurement is done partly by Pharmacy and partly by the Nuclear Medicine department.

Therefore, if ensuring the safe and secure handling of medicines on behalf of the organisation is in the Chief Pharmacist's job description, their responsibilities are as set out below:

- In the case of a non-pharmacy run department with a Specials licence, it is suggested that the Chief Pharmacist would be carrying out their responsibilities by 'outsourcing' to a suitable licence-holder. The Chief Pharmacist should ensure that there is a Quality Agreement, defining standards and responsibilities. The Chief Pharmacist should then monitor standards, for example by receiving a copy of each MHRA report or a letter from the MHRA indicating continuing support for the existing licence (as a minimum requirement), to reassure themselves that there are no major GMP issues.

- In a Section 10 unit, the ultimate responsibility rests with the Chief Pharmacist, whether or not they are line-manager for the supervising pharmacist. (In some cases a pharmacist could be employed directly by Nuclear Medicine, for example.) It is envisaged that the Chief Pharmacist would performance manage – either directly or indirectly – the supervising pharmacist and would be responsible for compliance with standards in documents such as the QA of Aseptic Preparation Services[2], Quality Assurance of Radiopharmaceuticals[3], Guidance Note14[4]. They should also receive the EL(97)52[5], (or equivalent in the Home Countries) audit reports and summaries, and should sign off the action plan produced in response to any external audit.

- In the situation of a Nuclear Medicine Department receiving multi-dose vials from an external supplier, the ultimate responsibility of the Chief Pharmacist cannot be devolved. Thus a written Quality Agreement - should be drawn up with Nuclear Medicine and approved by the Trust Board (or committee with suitably senior responsibility within the organisation) which devolves the management of the function and complies with the necessary requirements of both the MARS 1978 Regulations[6,7,8] and IR(ME) Regulations 2000[9,10] and their subsequent amendments. In addition, the Chief Pharmacist should be satisfied that the Nuclear Medicine Department is carrying out the various processes of these agreed functions to the appropriate standard; ensuring the use of vials is in accordance with its licence – for example that no 'dispensing' occurs in advance and that doses are drawn up immediately prior to administration (the drawing up of the doses is then considered part of the administration process). The recommendations in the 'Safe Drawing up of Radiopharmaceuticals' document[11] should be followed. Some existing facilities provide basic dispensing areas – such as shielding, a tray and an area segregated from high traffic/patients. However, if a new department or upgrade of facilities is planned, a dedicated small bench-top workstation for withdrawal of doses in a separate dispensing area should be included as part of the risk reduction strategy for inadvertent microbial contamination of IV products from multidose vials. (This does not apply to unit dose syringes or vials.)

- Where radiopharmaceuticals are received from external radiopharmacies or from commercial companies (for finished radiopharmaceutical products) and the procurement is undertaken partly by pharmacy and partly by the Nuclear Medicine department, it is important that everyone's responsibilities are clearly defined in a closely monitored technical (quality) agreement. Specifications for purchased products are important and should be current and formally documented. Up-to-date knowledge of the planned patient doses and activity requirements are equally important.

Receipt and Storage

Wherever receipt takes place, there should be suitable arrangements for holding radioactive material and for cold storage, as appropriate. In particular, the organisation should have knowledgeable receipt of radioactive materials – i.e. the delivery should be signed for by someone employed by the organisation. Many organisations now have all their deliveries in working hours so that a member of Radiopharmacy, Pharmacy or Nuclear Medicine staff can take receipt. However, in some cases this is not possible – for example, if a generator is delivered in the early hours of the morning for use that day, and in this case, signed receipt may be carried out by other employed staff – for example, a member of the security team. In this case there should be a procedure in place and security staff should be trained appropriately

The Chief Pharmacist should be aware of the arrangements as they have a responsibility to ensure appropriate storage conditions are in place for all medicines. The Radiation Protection Advisor should be satisfied that the arrangements for receipt of radioactive material are appropriate.

Supply

The Chief Pharmacist should have assurance that the principles of GMP are being upheld. As a minimum, the Chief Pharmacist should be provided with the MHRA inspection report or EL(97)52[5] audit report, along with the associated action plans. There should also be regular reports of progress against the action plans.

Capacity

All Radiopharmacies, whatever their arrangements for purchase and preparation/manufacture, should have a capacity plan. Chief Pharmacists should have oversight of this plan, and should have assurance that performance against it is being monitored and any concerns or deviations are reported.

The Chief Pharmacist is responsible for ensuring that the capacity plan is approved by senior hospital management external to the Radiopharmacy, for example at board level, to enable it to be effective at managing workload in the wider organisational context.

Training and Administration

In all of the above scenarios, Chief Pharmacists should be assured that ARSAC[12] licence holders have in place organisational approved protocols for staff training and administration of non-radioactive medicines administered by healthcare professionals other than medically qualified doctors as an adjunct to a Nuclear Medicine study. These healthcare professionals should be suitably trained, competent and follow agreed procedures for the preparation and the administration process of the medicines involved. Sufficient technical information (e.g. Summary of Product Characteristics SmPCs) should be available at the point of use to allow every medicine to be prepared and administered safely to the patient and to enable instant referral in the case of an adverse reaction or untoward event.

Disposal

Arrangements for disposal should comply both with regulations for disposal of radioactive material and with those for disposal of medicines. Both the Chief Pharmacist and the Radiation Waste Advisor should have oversight of the arrangements.

Identification of Responsibilities

There is a wide variety of arrangements which fall in between the two scenarios mentioned above. For example, the Chief Pharmacist may line manage the Radiopharmacy lead in a Section 10 unit, but the purchase of the starting materials and finished radioactive products could be carried out by the Nuclear Medicine department. Equally, the organisation could have its own Radiopharmacy, but this could be part of Radiology and have no managerial links to Pharmacy. Alternatively, the Pharmacy may purchase some finished products but others may be ordered on a daily basis by Nuclear Medicine.

In these cases, it is important to clarify how the responsibilities are split for different elements of the Radiopharmacy service. It may be useful to take it a step further and identify supporting documentation required. Table 1 gives some examples of how this may be achieved.

Technical (Quality) Agreements

The Technical (Quality) Agreement should have a clear scope and should define and document the responsibilities of all parties. The type of agreement may depend on the local arrangements for Radiopharmacy supply. For example, if the Chief Pharmacist is the line manager of the Radiopharmacy lead, a formal agreement is not considered necessary, but if the entire Radiopharmacy service is outsourced, a Technical (Quality) Agreement (TA) is essential. The template TA provided in Appendix A, includes a table of responsibilities between contract giver and contract acceptor which may form the basis of such a Technical (Quality) Agreement. This is not exhaustive, and it may be necessary to add in specific additional responsibilities – for example, approving clinical requests or making transport arrangements.

Table 1: Some example responsibilities for radiopharmaceuticals, with supporting documentation requirements

Responsibility	Chief Pharmacist	MPE/ RWA	ARSAC licence holder	Radiopharmacy Lead	Comments	Examples of Documentation required
Clinical request for administration \ application of radio-pharmaceutical			x		ARSAC holder to justify medical exposure of radio-isotopes IRMER practitioners are responsible for justifying medical exposure to radiation	IRMER written procedures for radio-isotopes Clinical guidance oversight by ARSAC lead: SOP of pathway
Establish protocols (including doses and process) for each procedure/investigation/treatment	x	x	x	x	Multidisciplinary agreement to set up protocols and procedures for each procedure/investigation/treatment	Diagnostic Reference Levels (DRLs), standard doses, IRMER written procedures, SOPs for treatment pathways, Contingency plans, Risk assessments, Local Rules
Quality Assessment of unlicensed medicine / supplier	x		x	x	Supplier approval is required prior to the purchase of an unlicensed medicine. This includes authenticating licence details and ensuring compliance with GMP.	Radiopharmaceutical Quality Agreement / SOP for purchase of unlicensed radiopharmaceuticals
^{131}I ordering	x				Order signed by pharmacist Pharmacy stores staff receive order.	SOP for ordering and receipt of non-technetium products
Procurement of starting materials for manufacture of Radiopharmaceuticals				x	Supplier approval not required for licensed products on approved list	SOP for ordering licensed starting materials

References

1. Directive 2001/83/EC of the European Parliament and of the Council of 6 November 2001 on the Community code relating to the manufacture of medicinal products.

2. Beaney AM ed. (2016) on behalf of NHS Pharmaceutical Quality Assurance Committee and the Royal Pharmaceutical Society. Quality Assurance of Aseptic Preparation Services. 5th edn. London: Royal Pharmaceutical Society.

3. UK Radiopharmacy Group (UKRG) and NHS Pharmaceutical Quality Assurance Committee (PQAC) (2016). Quality Assurance of Radiopharmaceuticals.Edition 4A. Available at: http://www.bnms.org.uk/images/QA_of_radiopharmaceuticals_Ed_4A_Nov_2016.pdf (accessed 26 February 2016).

4. Medicines and Healthcare products Regulatory Agency (MHRA) (2014). The supply of unlicensed medicinal products ("specials"). MHRA Guidance Note 14. London: Medicines and Healthcare products Regulatory Agency. Available at: https://www.gov.uk/government/publications/supply-unlicensed-medicinal-products-specials (accessed 22 February 2017).

5. NHS Executive (1997). Executive Letter (97) 52: Aseptic Dispensing in NHS Hospitals. London: Department of Health. UK Radiopharmacy Group (UKRG) and NHS Pharmaceutical Quality Assurance Committee (PQAC) (2012). Quality Assurance of Radiopharmaceuticals. Available at: www.bnms.org.uk/images/stories/UKRG/UKRG_QA_Apr-12.pdf (accessed 26 February 2016).

6. The Medicines (Administration of Radioactive Substances) Regulations 1978 (MARS Regulations 1978)

7. The Medicines (Administration of Radioactive Substances) Amendment Regulations 1995

8. The Medicines (Administration of Radioactive Substances) Amendment Regulations 2006

9. Ionising Radiation (Medical Exposure) Regulations 2000 (IRMER)

10. Ionising Radiation (Medical Exposure) (Amendment) Regulations 2016

11. UK Radiopharmacy Group (UKRG) (2012) Safe drawing up of radiopharmaceuticals in nuclear medicine departments http://www.bnms.org.uk/images/stories/UKRG/UKRG_Drawing_up_Feb-12.pdf (accessed 22 February 2017).

12. Administration of Radioactive Substances Advisory Committee (ARSAC) (2014). Notes for guidance on the Clinical Administration of Radiopharmaceuticals and Use of Sealed Radioactive Sources. London: Administration of Radioactive Substances Advisory Committee. March 2006 (Revised 2014).

APPENDIX A: Template for Technical Quality Agreement

TECHNICAL QUALITY AGREEMENT

For the Purchase, Receipt, Storage, Supply and Disposal of Starting Materials used in the Preparation of Radiopharmaceuticals and of Finished Radiopharmaceutical Products

Between

Chief Pharmacist

[Organisation]

And

Radiopharmaceutical (Purchasing) Department

[Organisation]

Validity: This agreement is valid for 24 months after the date of the final signature or earlier if requested by either party

Version:

Reference:

Quality Agreement

For the Purchase, Receipt, Storage, Supply and Disposal of Starting Materials used in the Preparation of Radiopharmaceuticals and of Finished Radiopharmaceutical Products

This Quality Agreement is between:

Chief Pharmacist (CG)

Name:

Organisation:

And

Radiopharmaceutical Purchasing Department (CA):

Name:

Designation:

Department and organisation:

This agreement is effective as of the date of the final signature and shall be reviewed every 2 years or earlier if deemed necessary by either party.

This agreement is executed in duplicate, all of which shall be deemed originals, and all of which shall constitute one and the same agreement binding upon both parties.

Scope

This agreement defines the roles and responsibilities between CG and CA relating to the purchase, receipt, supply, storage and end disposal of finished radiopharmaceuticals products and of starting materials which are to be used to prepare (the following) radiopharmaceuticals:

• Insert list if required

(Note: Unless only a small number of products are procured, it is not advisable to insert a list, which could quickly become out of date)

Accountability and Responsibilities

The following key stakeholders have duties and responsibilities for the purchase, receipt and storage, disposal and administration of radiopharmaceuticals

ARSAC Licence holder

MARS regulations [6,7,8] require the administration of radioisotopes to patients to be under the direction of a clinician holding an ARSAC licence. Under the IRMER legislation, these individuals fulfil the IRMER Practitioner role.

These certificate holders are clinically responsible for the administration of radioactive medicinal products. They will ensure the IRMER referral and operator aspects will be correctly established, in collaboration with other key stakeholders.

The ARSAC licence is bespoke to the site, radiopharmaceutical and clinician. Other Clinicians can operate under a licence following a delegated scheme of work.

The Trust's IRMER written procedures outline the roles and responsibilities of the IRMER Referrer, Practitioner and Operator.

The Chief Pharmacist should be satisfied that the ARSAC licence holder has suitable protocols in place for the use of radiopharmaceuticals, which are in keeping with the terms of the Product Licence and Manufacturers' specifications. If using unlicensed products, or licensed products outside of the terms of the Product Licence, the ARSAC certificate holder should have the approval of the Chief Pharmacist and, if necessary, the Trust Drug and Therapeutics Committee.

Chief Pharmacist

The Director of Pharmacy has overall accountability for the safe use of medicines within …… Trust

Head of Nuclear Medicine / Physics (MPE/RWA)

The Head of Clinical Physics has the responsibilities of delivering the following

- Medical Physics Expert Radio-Isotopes (MPE) (as defined in IRMER, MDGN)
- Radiation Waste Advisor (RWA, as defined in EPR2010)

The MPE is a key signatory on the ARSAC licence process.

Radiation Protection Advisor (RPA)

The RPA has a responsibility to ensure that a suitable Radiation Protection Supervisor (RPS) is appointed for the Radiopharmacy. The RPA's main role is to ensure that the Trust is complaint with IRR99. The RPA shall liaise with the other key stakeholders. They are a key signatory on the ARSAC licence process.

Subject of the Agreement

The Chief Pharmacist has overall accountability for the safe use of medicines within the Trust. Due to the nature of the starting materials, medicinal products used in the manufacture/preparation of radiopharmaceuticals, the activity of purchase, receipt and storage will be performed by the radiopharmacy department instead of within pharmacy.

The Chief Pharmacist (CG) hereby acknowledges that they are relying on the experience and skill of radiopharmacy staff, coupled with compliance with this agreement, to ensure purchase, receipt and storage of starting materials for the preparation of radiopharmaceuticals is carried out in an appropriate manner and in line with current standards and guidelines.

Purchase

The CA is responsible for the purchase of all finished radiopharmaceutical products and starting materials used in the preparation of radiopharmaceuticals. Materials (medicinal products), which possess a UK marketing authorisation shall always be purchased where available. Where such a licensed product is not available, an unlicensed product may be purchased following a successful quality assessment. The following steps should be performed:

1. Inform the Chief Pharmacist and ARSAC certificate holder that an unlicensed medicine requires to be purchased. This notification should be done in writing and a disclaimer should be signed by the ARSAC certificate holder. The ARSAC certificate holder is clinically responsibility for the use of the product in their patients.

2. Medicines used to prepare radiopharmaceuticals should be purchased according to a supplier approval procedure which ensures the product associated with the lowest pharmaceutical quality risk is purchased and that the supplier has the appropriate regulatory status to supply the material e.g. a wholesale dealers authorisation (WDA(H)) or Manufacturer's Specials licence.

   The quality assessment / supplier approval should be performed prior to the purchase of an unlicensed medicine. This may include obtaining certificates or analysis, authenticating licence details and ensuring compliance with GMP.

   The import of a medicine which is licensed within the EU is often the preferred alternative when a UK licensed product is not available. Risk mitigation to ensure the medicine is safe to use may need to be undertaken e.g. products that are not available in English language should be overlabelled and have technical information provided in English.

3. The supplier should have been audited, either by the purchasing party or on behalf of the NHS by the UK Radiopharmacy Group or by the NHS Pharmaceutical Quality Assurance Committee.
   a. Documented assurance of compliance with GMP by the manufacturer should be in place.

4. There should be a system for accessing patient names, if required

Receipt

Batch numbers of all products should be recorded upon receipt

Appropriate checks should be performed to ensure that the correct product has been received, the integrity of the product has been maintained and that there is no reason to believe the medicine has been falsified or tampered with.

Storage and Dispatch

All products / starting materials should be stored and transported in compliance with the manufacturer's recommendations and Good Distribution Practice (GDP) where appropriate. Controlled radiation storage should be used where recommended.

The area in which these medicines are stored should be dedicated for medicinal products only and bioburden shall be kept to a minimum.

Products which do not have a UK marketing authorisation shall be quarantined upon receipt until an appropriate assessment can be made.

All fridges, freezers and ambient storage areas should be monitored, appropriately validated and maintained as necessary. All fridges, freezers and storage areas should be locked and secured. Storage should be in appropriate areas e.g. not adjacent to sinks and not in the same room as sluices.

Staff should be provided with appropriate personal protective equipment (PPE) to undertake their role and be appropriately trained to handle these types of medicines.

Supply and Disposal

All radiopharmaceutical products should be supplied in accordance with the Human Medicines Regulations 2012.

Disposal should comply with the requirements of the Environmental Permitting (England and Wales) Regulations SI 2010

Quality Assurance

Minimum standards for Quality Assurance and Control identified in the QA of Radiopharmaceuticals [3] should be followed.

A suitable pharmaceutical quality system shall be maintained. The Chief Pharmacist shall be notified of all deviations through reporting of trends.

All planned changes shall be assessed using a change control procedure. Outsourcing of any activities should be agreed with the Chief Pharmacist prior to implementation.

Any incident which results in closure of the unit or the allocation of a red or amber risk rating should be reported to the Chief Pharmacist.

All products which do not have a UK marketing authorisation should be subject to an assessment for suitability of use and subsequent approval for use if the assessment is deemed satisfactory.

All documents shall be retained according to current regulatory guidance.

Records should be maintained to allow all components of a specific product to be traced to the recipient.

The CA is responsible for identifying any products which are associated with a recall through national reporting channels. They are responsible for recalling any affected stock and for appropriate segregation of any recalled stock.

The CA shall liaise with other healthcare professionals as deemed appropriate by the level of the recall / risk to patients who may have received a recalled product.

A system to record any complaints and pharmacovigilance events should be maintained. Any complaint or adverse reaction deemed significant should be reported to the Chief Pharmacist in a timely manner (normally within ? hours?).

Internal Audit

Internal audit shall be undertaken according to a pre-defined schedule and any major or critical deficiencies shall be notified to the Chief Pharmacist, with an action plan proposing corrective and preventative actions, in a timely manner (normally within ? hours?)..

External Audit

CA shall feedback the outcome of any external audit, including the relevant action plan to address any deficiencies cited, to CG in a timely manner.

Staffing and Training

All staff involved with assessment, purchase, receipt, storage and handling of radiopharmaceuticals should be trained and confirmed as competent.

All Radiopharmacy staff should be trained and confirmed as competent in all relevant aspects of Radiopharmacy procedures.

All Radiopharmacy staff should be trained in the principles of Good Manufacturing Practice (Current EU GMP)

References

Appendices

Appendix 1 Responsibilities

Appendix 2 Quality Agreement Approval

Appendix 3 Key Contact Persons

Appendix 1

Responsibilities

	CG	CA	Comments
1. Regulatory Processes			
Comply with any and all EU and other local current applicable laws, regulations and guidelines relating to GDP.		✓	
Ensure pharmacovigilance systems are in place to collect, evaluate and collate information concerning all suspected adverse events / reactions.	✓	✓	
Report pharmacovigilance events to CG.		✓	
Ensure competent authorities are notified of all complaints concerning suspected adverse events / reactions / lack of effect according to existing regulations and requirements.	✓	✓	
Report any minor defects to the manufacture and regulatory body as appropriate		✓	

	CG	CA	Comments
2. Purchase			
Purchase sterile materials from bona fide suppliers.		✓	
Assess the quality of starting materials for use		✓	
Ensure all starting materials are TSE/BSE free		✓	
Maintain a supplier qualification programme		✓	
Check that the condition of all containers, closures, seals and labelling of delivered starting materials are satisfactory for use		✓	
Approve materials for use		✓	
Notify CG and the ARSAC certificate holder in writing that an unlicensed medicine is to be purchased, as necessary		✓	
Source a signed disclaimer enabling the purchase of an unlicensed medicine from the ARSAC Certificate Holder as necessary		✓	
Mitigate any risks associated with an unlicensed product e.g. by overlabelling those not labelled in English language		✓	

	CG	CA	Comments
3. Storage /Receipt			
Qualification / Validation of storage sites for materials, as appropriate.		✓	
Store all materials under appropriate conditions as defined by the manufacture and in compliance with GDP requirements.		✓	
Record the batch numbers of all externally sourced products and starting materials received to maintain an audit trail of all products received to patient level		✓	
Provide staff with appropriate PPE to handle the products		✓	
Quarantine all unlicensed medicines on receipt until an assessment has been performed by a competent person		✓	

	CG	CA	Comments
4. Changes			
Maintain a suitable change control system and provide a summary report of all significant changes to CG every 12 months.		✓	
Maintain a suitable unplanned deviation system and provide a summary report of all significant changes to CG every 12 months.		✓	
Provide results of any investigation relating to a major or critical unplanned deviation in written format to CG and in a timely manner.		✓	This investigation should include proposed corrective and preventative actions.
No work should be sub-contracted without the prior written agreement of CG.		✓	

	CG	CA	Comments
5. Documentation			
Ensure that all records of manufacture and distribution are clear, readily available and retained for the period required by current legislation. Records shall ensure the traceability of the origin and destination of Products.		✓	
Ensure written procedures are available to describe all operations that may affect the quality of products.		✓	
Maintain complete and accurate records relating to the ordering, receipt and storage of purchased products.		✓	
Store all documents and records so that they are easily retrievable and stored protected from loss and damage.		✓	
Archive documents according to current regulatory guidance.		✓	
Maintain a record of batch numbers of all starting materials received and supplied, or returned in the event of a recall.		✓	

	CG	CA	Comments
6. Complaints			
Acknowledge any complaints from CG or recipients of starting materials purchased within 24 working hours.		✓	
Inform CG of all quality complaints raised in a timely manner		✓	
Investigate and document any complaint relating to the quality of materials. All corrective and preventative actions should be documented, as appropriate.		✓	
Report back to CG the outcome of any complaints in written format within 20 working days.		✓	

	CG	CA	Comments
7. Recalls			
In the event of a material being recalled, arrange for the collection, re-stocking and segregation of products affected. This also includes products which were manufactured using a recalled starting material.		✓	Should comply with timelines as specified in regulations
Maintain a product recall procedure for use, when necessary, to recall a defective product, and test the procedure at least annually.		✓	This also includes products which were manufactured using a recalled starting material or component.
Advise CG if they have received products which are / contain starting materials which are subject to a MHRA Drug Alert or Recall.		✓	Should comply with timelines as specified in regulations

	CG	CA	Comments
8. Audit			
Provide reasonable access, at agreed pre-determined times, to permit audits of the relevant facilities and documents by CG or the regulatory authorities.		✓	
Undertake the necessary quality audits of CA if deemed necessary	✓		
Undertake the necessary quality audits of subcontractors, as required for assurance of this agreement.		✓	
Conduct internal audit in order to monitor the implementation of and compliance with GDP and GMP (as appropriate).		✓	
Propose necessary corrective measures following internal audit.		✓	
Make available evidence of adherence to internal audit schedules.		✓	
Make available evidence of closure of audits and / or inspections, and the anticipated date of the next audit / inspection.		✓	
Conduct inspections of all subcontractors in order to monitor the implementation of and compliance with GMP and /or GDP.		✓	

	CG	CA	Comments
9. Waste			
Arrange for the safe disposal radiopharmaceutical waste at agreed intervals in accordance with relevant legislation. This will include recalled and returned stock		✓	

	CG	CA	Comments
10. Training			
Adequately train staff involved in roles defined within this agreement as appropriate to their role.	✓	✓	
Ensure staff comply with relevant legislation and NHS requirements concerning both patient and commercial confidentiality e.g. Data Protection Act.	✓	✓	

Appendix 2

Quality Agreement Approval

Agreed on behalf of CG

Name:	Name:
Title: Chief Pharmacist	Title: (Deputy)
Signature: _____	Signature: _____
Date: _____	Date: _____

Agreed on behalf of CA

Name:	Name:
Title: QA/Radiopharmacy (Radiopharmacy Representative)	Title: (Deputy)
Signature: _____	Signature: _____
Date: _____	Date: _____

Appendix 3

Key Contact Persons

CG

Name	Designation	Contact Details	E-mail
	Chief Pharmacist		
	Deputy		

CA

Name	Designation	Contact Details	E-mail
	QA/Radiopharmacy Representative		
	Deputy		