The Leeds Teaching Hospitals NHS NHS Trust UNIVERSITY OF LEEDS **S**tandard **O**perating **P**rocedure	Title	**LTHT / UoL Human Tissue Act (HTA) Standard Operating Procedures applying to the Research Licence**				
	Scope	**Details of the procedure for performing risk assessments for the collection and storage of tissues under the LTHT and UoL Human Tissue Authority Research Licence**				
	Version	**V1.0**	Date issued	**02/04/2021**	SOP ID	**LRTB SOP M10**
	Planned Review date			2023		

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IMPORTANT NOTE

All non-essential activities related to the collection and storage of human tissues for research were paused in March 2020 due to the Covid-19 pandemic. Essential activities, such as the collection or release of samples for Covid 19 related research or the maintenance of premises or equipment, continued with the appropriate safeguards in place.

The Leeds Teaching Hospitals Trust (LTHT) and the University of Leeds (UoL) are responsible for developing and updating instructions or advice regarding the continuation or resumption of activities within the Trust and University respectively, based on the instructions or advice issued by the relevant public bodies such as the National Institute for Health Protection, the NHS and/or the government. All staff must follow the latest instructions or advice issued by LTHT and/or UoL, depending on the sector within which they work.

The HTA-related activities detailed in this SOP should only be undertaken if:
- they fall within the scope of permissible work according to current LTHT and/or UoL policy;
- the procedures can be adapted to fully observe the current LTHT and/or UoL infection control policy.

The above principles will apply if other exceptional national or local circumstances arise.

Section A LTHT / UoL Standard Operating Procedure

Performing Risk Assessments

1. General Principles

1.1 Under the Governance and Quality Standard 6 of the HTA code of practice for research, there is a requirement to perform risk assessments for all practices and processes requiring compliance with the HT Act and the HTA's Codes of Practice.

1.2 These are in addition to risk assessments related to health and safety issues.

1.3 Risk assessments should include an evaluation of the level of the risk and, where appropriate, the mitigating actions identified and the level of residual risk remaining.

1.4 Risk assessments must be documented and monitored and made available to staff, who must be made aware of risks during training.

1.5 Risk assessments must be reviewed whenever there is a change in any practice or process, or if an incident has occurred. The actions to mitigate risks must be updated as necessary.

1.6 In the absence of changes in processes and practices or incidents, risk assessments should be reviewed periodically (typically every 1-3 years).

1.7 Part 1 of the risk assessment form (see appendix) provides a matrix for the evaluation and scoring of risk across the tissue collection pathway broken down into consent, sample collection and processing, use, storage, transport, traceability and disposal.

1.8 A separate analysis should be performed for each tissue type collected as there may be differences in the type or level of risk and the mitigating circumstances for each stage. The table can be modified to allow this.

2. Part 1: Performing the Initial Risk Assessment

2.1 The type(s) of tissue under evaluation should be listed in section 1 of the risk assessment form.

2.2 Details of generic risks are listed in section 2 for each stage of the tissue collection pathway and should be assessed and scored.

2.3 Investigators should also consider specific areas of their protocols that could raise a specific risk to compliance and add them to list. They should be scored in the same way as the generic risks.

2.4 If a generic risk is not applicable, this should be stated with an explanation of why this is the case.

2.5 The control measures that are built into the procedure to mitigate against the risk should be listed in the relevant box, together with any monitoring systems in place to ensure the effectiveness of the control measures.

2.6 The scoring system takes into account the likelihood (L) of a risk being the cause of an adverse event and the severity (S) of that adverse event.

2.7 The likelihood of an adverse event is scored after taking into account the preventative measures in place using the following scale:

1	Highly improbable (0-1% chance)
2	Improbable (2-10% chance)
3	Possible (11-33% chance)
4	Likely (34-50%)
5	Almost certain (51-100%)

2.8 The severity of the outcome of the adverse event is scored using the following scale:

1	No distress to individuals or damage to samples or institutional reputation
2	Minor distress to individuals or minor damage to samples (all tissues usable) or institutional reputation
3	Moderate distress to individuals or moderate damage to samples (some tissues lost) or institutional reputation
4	Major distress to individuals or major damage to samples (most tissues lost) or institutional reputation
5	Severe distress to individuals or complete loss of samples or severe damage to institutional reputation

2.9 The risk score is the multiplication of the likelihood score by the severity score.

2.10 The risk scores are classified as follows:

Risk Score (L*S)	**Assessment of Risk**	**Action Required**
1-4	Low	No additional control measures are required
5-12	Medium	Additional control measures should be considered and introduced as far as practical. The reasons for the decision not to introduce them must be explained.
13-25	High	Additional control measures must be introduced.

2.11 Any component falling into the medium or high risk category must be listed in section 3 with details of additional control measures.

2.12 New likelihood and severity scores are inserted after taking into account the additional control measures.

2.13 If a component remains in the high risk category after reassessment, this should be discussed with the Person Designated and the Designated Individual, who will determine whether to allow the activity to proceed.

2.14 This discussion and its outcome must be documented.

2.15 All completed risk assessments must be signed and dated. The date of the next scheduled review should be set. The person responsible for initiating the review must be identified.

3. Part 2: Review of the Risk Assessment

3.1 The person responsible for initiating the review (see 2.14) must identify the assessor who must complete part 2 of the risk assessment form on or before the date of review stated in part 1.

3.2 The details sections must be completed as explained in section 2.

3.3 Each item of the risk assessment should be assessed to determine:

- 3.3.1 If there have been any changes to the original experimental procedures;
- 3.3.2 Whether any additional procedures have been introduced;
- 3.3.3 Whether risks that were not considered in the original risk assessment have come to the attention of the research team through practice of the procedure;
- 3.3.4 Whether there should be any changes to the likelihood or severity of the risk based on the practical experience of the research team.

3.4 If the answer to all four questions is no, this should be stated on the form, which is then signed and dated.

3.5 If the answer to any of those four questions is yes, the details must be entered in the box provided.

3.6 These additions, amendments and/or changes to the level of likelihood or severity of the risk must be added to part 1 of the original risk assessment form, clearly indicating the date the additions or changes were made. It is useful to make any changes in red so that they are clearly identifiable by the staff who need to be made aware of these revisions.

3.7 A risk assessment of the altered or additional procedures must be performed as detailed in section 2 of this SOP.

3.8 Any medium or high risk item must be listed in the “additional control measures required” table in part 2, following the steps detailed in sections 2.10 to 2.14 of this SOP.

3.9 Part 2 of the risk assessment forms must be signed and dated following completion. The date of the next scheduled review should be set. The person responsible for initiating the review must be identified.

4. Risk Assessment Form

Part 1: Risk Assessment Form for Research Tissue Banks, Groups or Studies operating under the Leeds HTA research licence

1. ***Details***

RTB, group or study title		**Type(s) of Tissue**	
Person Designated		**Principal investigator**	
Name of Assessor		**Date of Assessment**	

2. ***Identification of Risk and Scoring Guidelines***

Likelihood of Risk with Controls (L)		**Severity of Impact (S)**	
1	Highly improbable (0-1% chance)	**1**	No distress to individuals or damage to samples or institutional reputation
2	Improbable (2-10% chance)	**2**	Minor distress to individuals or minor damage to samples (all tissues usable) or institutional reputation
3	Possible (11-33% chance)	**3**	Moderate distress to individuals or moderate damage to samples (some tissues lost) or institutional reputation
4	Likely (34-50%)	**4**	Major distress to individuals or major damage to samples (most tissues lost) or institutional reputation
5	Almost certain (51-100%)	**5**	Severe distress to individuals or complete loss of samples or severe damage to institutional reputation

Stage	Item	Potential risk	Consequences if risks realised	Control measures in place (including monitoring of effectiveness)	Likelihood (L 1-5)	Severity (S 1-5)	Risk score (L*S) (1-25)
A Consent	A1	Incomplete consent details	Consent is not valid until all details are complete. If the missing details cannot be completed (e.g. by returning to the donor), samples could not be used for intended research failing to meet the expectations of the donor				
	A2	Samples acquired without consent	Major breach of the Human Tissue (HT) Act with potential legal consequences (loss of licence) for LTHT and University. Distress to donors and families. Reputational damage to staff involved and LTHT/UoL				
	A3	Completed consent form lost	Samples could not be used for research and risk of patient identifiable data being revealed, breaching the Data Protection Act (DPA), 2018				
	A4	Consent obtained using the wrong documentation, e.g. an old version of the forms	Consent may not be valid with loss of samples for intended research purposes, failing the expectations of the donor.				
	A5	Donor anonymisation	Breach of the DPA, 2018 leading to potential legal				

Stage	Item	Potential risk	Consequences if risks realised	Control measures in place (including monitoring of effectiveness)	Likelihood (L 1-5)	Severity (S 1-5)	Risk score (L*S) (1-25)
		compromised and identity known to researchers	penalties. Donor distress. Reputational damage to staff involved and LTHT/UoL				
	A6	Samples supplied to the RTB by external organisations are being stored without consent	Samples could be stored and released for research without any consent, in breach of the HT Act.				
	A7	Work continues after donor withdraws consent	Major breach of the Human Tissue Act with potential legal consequences (loss of licence) for LTHT and University. Distress to donors and families. Reputational damage to staff involved and LTHT/UoL				
B Sample collection and processing	B1	Samples mixed up	Loss of traceability of samples involved therefore unable to retain them for research thereby failing to meet donors' expectations				
	B2	Sample contaminated	Unable to be sure whether contamination would affect results. Unable to retain samples for research thereby failing to meet donors' expectations				
	B3	Samples contain pathogens	Serious impact on staff if infected depending on nature of pathogen				
	B4	Failure of equipment, e.g.	Loss of samples for intended research purposes failing				

Stage	Item	Potential risk	Consequences if risks realised	Control measures in place (including monitoring of effectiveness)	Likelihood (L 1-5)	Severity (S 1-5)	Risk score (L*S) (1-25)
		centrifuge, results in loss of sample	donor expectations leading to donor distress. Reputational damage to LTHT/UoL				
C Sample use	C1	Patients consented but samples released to researchers without the required ethical /governance approvals for project to exempt them from the requirements of the HT Act eg NHS REC project specific approval or approval granted by an NHS REC approved Research Tissue Bank (RTB)	Breach of the HT Act if samples stored in unlicensed premises.				
	C2	Samples used for purposes the donor has not consented to	Major breach of the Human Tissue Act with potential legal consequences (loss of licence) for LTHT and University. Distress to donors and families. Reputational damage to staff involved and LTHT/UoL				
	C3	Samples used for research not	Major breach of the Human Tissue Act with potential legal				

Stage	Item	Potential risk	Consequences if risks realised	Control measures in place (including monitoring of effectiveness)	Likelihood (L 1-5)	Severity (S 1-5)	Risk score (L*S) (1-25)
		covered by the patient information sheet and/or consent form	consequences (loss of licence) for LTHT and University. Distress to donors and families. Reputational damage to staff involved and LTHT/UoL				
	C4	Inappropriate release of identifiable patient information with the samples	Breach of the DPA, 2018 leading to potential legal penalties. Donor distress. Reputational damage to staff involved and LTHT/UoL				
	C5	Tissue handled inappropriately by research team/procedure damages tissue sample	Loss of samples for intended research purposes and as intended by the donor. Donor distress. Reputational damage to LTHT/UoL				
	C6	Failure to document tissue use on storage logs	Breach of the traceability standard with potential legal consequences				
D Sample storage	D1	Incorrect storage conditions used	Loss of samples for intended research purposes and as intended by the donor. Donor distress. Reputational damage to LTHT/UoL				
	D2	Loss of tissue integrity due to critical failure of a piece of storage equipment	Loss of samples for intended research purposes and as intended by the donor. Donor distress. Reputational damage to LTHT/UoL				
	D3	Samples stolen or accessed and used	Loss of samples for intended research purposes and as				

Stage	Item	Potential risk	Consequences if risks realised	Control measures in place (including monitoring of effectiveness)	Likelihood (L 1-5)	Severity (S 1-5)	Risk score (L*S) (1-25)
		accidentally by other researchers	intended by the donor. Donor distress. Reputational damage to LTHT/UoL				
	D4	Major incident (eg fire / flood) affects storage facility	Major loss of samples for intended research purposes and as intended by the donor. Donor distress. Reputational damage to LTHT/UoL				
	D5	Loss of labelling of sample	Loss of samples for intended research purposes and as intended by the donor. Donor distress. Reputational damage to LTHT/UoL				
E Sample transport	E1	Sample fails to arrive in the lab	The sample would be unavailable for research and not used as donor intended				
	E2	Loss of patient confidentiality during transport	Breach of the Data Protection Act leading to potential legal penalties. Donor distress. Reputational damage to staff involved and LTHT/UoL				
	E3	Inappropriate condition of transportation used/ Samples are damaged, e.g. thawed, during transportation with a courier	Samples are lost for research purposes				
	E4	Packaging failure/ Sample leakage during transit	Potential risk of exposure to pathogens. Loss of sample for research				

Stage	Item	Potential risk	Consequences if risks realised	Control measures in place (including monitoring of effectiveness)	Likelihood (L 1-5)	Severity (S 1-5)	Risk score (L*S) (1-25)
F Sample traceability	F1	Sample cannot be located	Breach of the Human Tissue Act with potential legal consequences for LTHT and University. Distress to donors and families. Reputational damage to staff involved and LTHT/UoL				
	F2	Sample identifiers are lost or wrong so no linkage with the consent and clinical data is possible	Breach of the Human Tissue Act with potential legal consequences for LTHT and University. Distress to donors and families. Reputational damage to staff involved and LTHT/UoL				
E Sample disposal	E1	Samples disposed of through incorrect route	Potential risk of accidental exposure to pathogens				
	E2	Accidental disposal of the wrong samples	Waste of donated sample and not used as donor intended and may be rare sample				
	E3	Samples incorrectly recorded as destroyed	Samples unavailable for research studies as unaware they are still stored. (Risk that incorrect samples have been disposed of instead with the same consequences as for “accidental disposal”).				
	E4	Disposal of sample not tracked or	Samples would wrongly appear to be available for research from the records				

Stage	Item	Potential risk	Consequences if risks realised	Control measures in place (including monitoring of effectiveness)	Likelihood (L 1-5)	Severity (S 1-5)	Risk score (L*S) (1-25)
		incorrectly recorded					

Risk Score (L*S)	Assessment of Risk	Action Required
1-4	Low	No additional control measures are required
5-12	Medium	Additional control measures should be considered and introduced as far as practical. The reasons for the decision not to introduce them must be explained.
13-25	High	Additional control measures must be introduced.

3. Additional Control Measures Required

Stage	Potential Risks Identified	Additional Control Measures *(include monitoring of effectiveness)*	New Likelihood (NL 1-5)	New Severity (NS 1-5)	New Score (NL*NS)
Consent	*Insert Medium or High Risk items from section 2 here. If None please state this here*				
Sample collection and processing	*Insert Medium or High Risk items from section 2 here. If None please state this here*				
Sample use	*Insert Medium or High Risk items from section 2 here. If None please state this here*				
Sample storage	*Insert Medium or High Risk items from section 2 here. If None please state this here*				
Sample transport	*Insert Medium or High Risk items from section 2 here. If None please state this here*				
Sample traceability	*Insert Medium or High Risk items from section 2 here. If None please state this here*				
Sample disposal	*Insert Medium or High Risk items from section 2 here. If None please state this here*				

Person responsible for initiating next review		**Date of next review:**	
Assessor	**Signed**	**Date**	
Chief Investigator	**Signed**	**Date**	
Person Designated	**Signed**	**Date**	

Part 2: To be completed before or on date of review listed in original risk assessment

RTB, group or study title		**Type(s) of Tissue**	
Person Designated		**Principal investigator (study)**	
Name of Assessor		**Date of Assessment**	

Have there been any changes or additions to the procedures or control measures used?	**Yes / No**	**Have there been any new risks or changes to the level of risk identified?**	**Yes / No**

If "Yes", please provide details of changes below, expanding the table to include all items that have changed.

Stage	Item	Potential risk	Consequences if risks realised	Control measures in place (including monitoring of effectiveness)	Likelihood (L 1-5)	Severity (S 1-5)	Risk score (L*S) (1-25)

Additional Control Measures Required

Stage	Potential Risks Identified	Additional Control Measures *(include monitoring of effectiveness)*	New Likelihood (NL 1-5)	New Severity (NS 1-5)	New Score (NL*NS)
Consent	*Insert Medium or High Risk items from section 2 here. If None please state this here*				
Sample collection and processing	*Insert Medium or High Risk items from section 2 here. If None please state this here*				
Sample use	*Insert Medium or High Risk items from section 2 here. If None please state this here*				
Sample storage	*Insert Medium or High Risk items from section 2 here. If None please state this here*				
Sample transport	*Insert Medium or High Risk items from section 2 here. If None please state this here*				
Sample traceability	*Insert Medium or High Risk items from section 2 here. If None please state this here*				
Sample disposal	*Insert Medium or High Risk items from section 2 here. If None please state this here*				

Person responsible for initiating next review:		**Date of next review:**	
Chief Investigator	**Signed**	**Date**	
Person Designated	**Signed**	**Date**	

Section B Applicability

1.1 This SOP is relevant to all staff collecting and storing human tissues relevant to the Act. The list of relevant tissues can be found on the Human Tissue Authority website by following the link:
https://www.hta.gov.uk/sites/default/files/migrated_files/List_of_materials_considered_to_be_relevant_material_under_the_Human_Tissue_Act_2004.pdf

1.2 This SOP can also be used as a training tool for new members of staff who have never worked with human tissues before, or who need to follow a new process.

1.3 This SOP has been written to formally establish a consistent procedure for the assessment of risks of a new or ongoing tissue collection/research project failing to comply with the Human Tissue Act (2004) or the associated codes of practice.

1.3 The main aim of this SOP is to ensure that relevant staff, by referencing this document, can easily follow the process of risk assessments.

Section C Background

1.1 Different sample types (blood or other bodily fluids, surgical resections etc) and data are collected from patients and other donors in Leeds for future unspecified research into a wide range of conditions including the investigation of normal cellular functions and their disruption in disease states, whether cancer or non-cancer. The tissue collections resulting from these different research activities are grouped under one research licence granted by the Human Tissue Authority to cover both Leeds Teaching Hospitals NHS Trust and the University of Leeds and referred to as the Leeds Research Tissue Banks. However, not all of these tissues are held within an NHS Research Ethical Committee approved research tissue bank.

1.2 The Leeds Teaching Hospitals NHS Trust is registered as the Licence Holder with the HT Authority, and the principal licensed site ('the hub') is St James's University Hospital. The University of Leeds main campus and Chapel Allerton Hospital are named satellites on the licence.

1.3 The research licence **does not** cover all areas within St James's University Hospital, the University of Leeds main campus or Chapel Allerton Hospital, but only named research groups and premises within those sites. There is a formal Leeds HT Act governance structure as described below.

1.4 The Licence Holder is responsible for appointing a suitable Designated Individual (DI).

1.5 The DI plays a key role in implementing the requirements of the HT Act as the person under whose supervision the licensed activity is authorised to be carried out. The DI has the primary (legal) responsibility under Section 18 of the HT Act to secure that:

1.5.1 suitable practices are used in undertaking the licensed activity;

1.5.2 other persons, such as the Persons Designated (PDs), working under the license are suitable and;

1.5.3 the conditions of the licence are complied with.

1.6 The Persons Designated are charged with adapting the overarching HT Act related SOPs, including this one, into local SOPs to reflect local conditions and research pathways. They are also responsible for the supervision of staff working to HT Act standards (more detail is available in a separate document “Role of the Person Designated).

1.7 The organisational chart for the research licence, with details of key personnel responsible for specific HT Act activities, is routinely updated by the HT Act manager and any changes are submitted to the HT Authority.

1.8 The HT Authority determines the timing and frequency of inspection of an organisation holding a research licence based on a risk assessment. All areas listed in the organisational chart are subject to inspection.

Section D Definitions

The Act	The Human Tissue Act, 2004
DI	Designated Individual as defined by the Human Tissue Authority
HT	The Human Tissue Authority or Act
LTHT	Leeds Teaching Hospitals NHS Trust
PD	Person Designated as defined by the Human Tissue Authority
R&I	Research & Innovation
SOP	Standard Operating Procedure
UoL	University of Leeds

Section E References

Human Tissue Act, 2004

Human tissue Authority, Codes of Practice 2017

Code A: Guiding principles and the fundamental principle of consent
Code E: Research
Code E: Research standards and guidance

Joint Policy for the Storage and Use of Human Tissue – a collaborative document agreed by Leeds Teaching Hospitals NHS Trust

B SOP details and approval process

Author: Patricia Harnden, Designated Individual for the Research Licence

Reviewer:

SOP Pages:

Version No. of replaced SOP: **N/A**

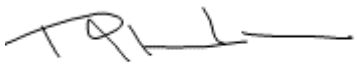
Effective date of replaced SOP: N/A

Review date for updated SOP: Biennially from date of approval or review

Review Date: By:

Review and Approval Process:

Draft	Circulated to	Period of circulation (dates)	Comments received from
Version 0.1	All Persons Designated and key associated staff, HTA Manager, LTHT and UoL Research and Innovation, Medical Achiever leaders	18/01/2021 to 08/02/2021	None received but consultation with PDs during the development of the SOP, which includes sections from several PDs individual SOPs
Version 0.2	N/A		

Version No of the SOP	Name of DI	Date	Signature
1.0	Dr Patricia Harnden Designated Individual LTHT/UoL Human Tissue Act	02/04/2021	

Distribution & Storage:

Distribution to

Persons Designated, LTHT/UoL HTA Research Licence, HTA Research Subgroup

Location of Document

Paper: HTA Manager, Risk Management, The Trust Headquarters, St James's University Hospital

Electronic: https://ris.leeds.ac.uk/research-ethics-and-integrity/other-resources/research-involving-human-tissue/ltht-uol-human-tissue-act-standard-operating-procedures/