The Royal College of Pathologists of Australasia
ABN 52 000 173 231

Durham Hall 207 Albion Street Surry Hills NSW 2010 Australia
Telephone 61 2 8356 5858 Facsimile 61 2 8356 5828

RCPA
The Royal College of Pathologists of Australasia

Guideline

Subject: **Ethical and Legal Issues in Relation to the Use of Human Tissue in Australia and New Zealand**
Approval Date: April 2018
Review Date: April 2022
Review By: BPPQ
Number: 4 /2003

Contents

Section 1: Introduction

Pathologists understand the importance of meticulous and respectful processes in handling human tissue. These are fundamental to the provision of good pathology practice and by so doing, pathologists make significant contributions to better diagnosis and understanding of disease, potential methods of prevention, and improved therapies.

Society also demands this respect for the human body and its parts. And it is generally agreed that human tissue should not be used at will or abused. However, increasing public concern was raised in the 1980s and 1990s around the world, including in Australia and New Zealand, about many ethical issues in relation to how human tissue was being used. Practices that were questioned include the sale of organs; retention of organs and body parts at post-mortem without adequate consent; the patenting of life-forms; and the commercial exploitation of products derived from patients' or research subjects' altruistic donation of tissue. While expressing anxiety about certain issues, the public has also welcomed advances in medicine and biotechnology made possible by using human tissue in clinical therapy and research.

Pathologists have a significant role in these important endeavours. Pathology examination, archiving and storage of human tissue, often cancer or chronic disease-affected tissue obtained as part of diagnosis and therapy is a common context in which ethical and legal issues arise for pathology services. Aside from material taken for clinical purposes, other sources of human tissue include voluntary donation, and material collected post-mortem. In addition to diagnostic and therapeutic uses of human tissue, pathologists are often involved in distribution of human tissues for a wide range of research, and permissible commercial purposes. All these come with distinct ethical and legal concerns and it is important that pathologists are aware of this complex aspect of handling human tissue.

Purpose of this guideline

This guideline aims to clarify members' responsibilities in relation to the acquisition, storage and supply of human tissue by providing an *overview and introduction* to relevant ethical and legal issues.

The guideline also provides links to other resources for more detailed information. It should be read in conjunction with related RCPA policies and guidelines listed in section 6.

This guideline replaces RCPA 4/2003 *The ethical and legal issues in relation to the use of human tissue and tests results in Australia*.

Section 2: Scope of this guideline

Inclusions

Ethical and legal issues related to the procurement, testing, storage and dissemination of human tissues (also called 'human biospecimens' in some guidelines). This includes selected diagnostic, therapeutic, and non-therapeutic purposes, including research, laboratory Quality Assurance processes, commercial and teaching, as relevant to pathology services.

Human tissues are generally agreed to include:

- Organs and parts of organs
- Cells and tissue
- Sub-cellular structures and cell products
- Blood
- Gametes (sperm and ova)
- Embryos and fetal tissue

These tissues, and how they should be handled are distinct clinically, ethically and legally from body wastes or bodily products that are ordinarily abandoned, such as urine, hair, and faeces amongst others.

Exclusions

It is not possible to address all ethical and legal issues relevant to the use of human tissue in a single policy. Excluded from this policy are ethical and legal issues in relation to:

- **Autopsy practices** – see *National Code of Autopsy Practice* (hosted SA Govt website) www.sahealth.sa.gov.au/wps/wcm/connect/ce458c80495485e786a0f63b73084503/NationalCodeOfEthicalAutopsy-PIGR-1111.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-ce458c80495485e786a0f63b73084503-l-mHwdA

- **Body donation programs and anatomical studies** – see participating Universities institutional policies for Body Donor Programs around Australia. State-based guidelines also exist addressing some ethical and legal requirements for Schools of Anatomy in studying anatomy using cadaveric tissue.

- **Use of tissue for forensic purposes** – see article *Ethical Issues in Conducting Forensic Examinations* http://www.apcj.org/documents/2_3_Ethics_foren.pdf

- **Living and deceased organ and tissue donation and transplantation practices** – see National Health and Medical Research Council's (NHMRC) suite of ethical guidelines relating to living and deceased organ and tissue donation for therapeutic purposes, including consent standards for procurement of organs and tissues. https://www.nhmrc.gov.au/guidelines-publications/e75

- **Stem cell research** – see https://www.nhmrc.gov.au/about/nhmrc-committees/embryo-research-licensing-committee/human-embryos-and-cloning/stem-cells-clon

Section 3: Ethical framework

3.1 General ethical principles and obligations

The Royal College of Pathologists of Australasia's Code of Ethics outlines broad ethical obligations related to professional practice. These are applicable to conduct involving procurement, testing, storage and distribution of human tissue by pathologists.

Principle 1: To practice pathology with the aim of preventing, diagnosing and treating ill health. This includes practicing with scientific rigor as well as with honesty, compassion and respect for human dignity.

Principle 2: **To understand and respect patient autonomy and confidentiality.** This includes when considering the involvement of patients, body parts, human tissue or other biospecimens in research, teaching and quality activities and when collecting, storing and transmitting information related to individual patients and their families.

Principle 3: To protect patients from harm. This includes commitment by each individual to the achievement and maintenance of clinical competence and professional standards; to referring issues beyond their clinical competence, scope of practice or accreditation; and, taking appropriate action when the conduct or lack of competence of others places patients at risk of harm.

Principle 4: To approach the practice of pathology with the aim of meeting patient needs appropriately and fairly. This includes maintaining professional integrity; recognising and eliminating conflicts of interest that interfere with free and independent medical or scientific judgment; treating fellow pathologists, trainees, scientists and other colleagues with respect and practicing in a manner that does not exploit, discriminate against, harass or treat unfairly any individual patient, group of patients, colleague, stakeholder or community.

3.2 Ethical principles and obligations pertaining to use of human tissue

The procurement, testing, storage and use of human tissue raises a myriad of ethical and legal issues[i]. Some are unique to an application or setting. However, the following ethical framework outlines ethical themes that cut across specific practices.

3.2.1 Respect for human lives and the human body

Respect for a person and their body involves giving due scope to their capacity to make their own decisions. For individuals to be treated with dignity, this demands that their autonomous choices be respected in how their tissue is obtained and used. This needs to be done with consent, and this should be informed, voluntary consent when live patients are involved.

Contributing to the patient's optimal treatment is an ethical obligation for pathologists, as it is for other medical specialists. Displaying a high degree of technical skill in handling tissue is one way that pathologists show respect for the patient. Another is by rigorously maintaining processes that ensure accurate documentation, identification and examination of human tissue.

3.2.2 Unique value of a person's tissue

The uniqueness and identifiability of tissue matters. Special respect should be afforded to corpses and large, identifiable pieces of tissue. Genetic material has a special status owing to its ability to identify an individual and their family.

Where the value of a human tissue product derives from a property unique to the individual e.g. particular genetic mutation, then concerns may arise about exploitation.

3.2.3 Proper consent

In general terms, a person's consent to donation and subsequent use of their tissue needs to be i) a voluntary choice and ii) should be based on sufficient information and adequate understanding of both the proposed treatment or research and the implications of participation in it.

There is distinction in consent standards between uses of tissue for research, clinical management, teaching and commercial purposes.

In some circumstances (e.g. in deceased donation or obtaining tissue from children), substitute consent by a lawful representative is required.

In some circumstances (e.g. through authority for autopsy, or prior consent for therapeutic surgery), consent obtained for one purpose is sufficient for subsequent storage and use of tissue for other "medical purposes or scientific purposes" (i.e. slides and blocks).

In some circumstances (e.g. use of tissue in research and commercial use), explicit consent is generally required (unless a Human Research Ethics Committee authorizes waiving of consent).

Patients should be informed when material left over following diagnosis or treatment might be used for research.

Patients may always veto use of their tissue for research or teaching purposes.

3.2.4 Respecting cultural difference in attitudes and expectations in use of human tissue

Cultural differences may impact on the permissibility of provision of some tissues within some religious or cultural sub-groups e.g. foetal tissue. Honouring the individual's values, preferences and beliefs may preclude certain actions as much as permit others.

Indigenous people have 'a unique attachment to their genetic resources since they are a vital part of their spiritual and cultural existence (cosmology)'.[ii] Sensitivities in the handling of tissue from Aboriginal and Torres Strait Islander people may therefore be encountered, including but not limited to genetic testing/research. These should be explored on an individual basis with heightened awareness where the patient is from a traditional community.

3.2.5 Quality and safety - evidence-based standards for processing human tissue

Some pathology samples of tissue are retained to fulfil laboratory accreditation requirements or to meet laboratory standards. These quality assurance processes are essential and ethically justifiable on two grounds: benefit to patients through diagnostic accuracy and avoidance of testing errors, and in avoidance of harm by minimizing risks (of inaccurate test results) to the patient or third parties.

3.2.6 Effectiveness and efficiency in use of human tissue

The principle of effectiveness requires that waste is reduced, that practices that clearly don't work are not used, and that proven measures that are likely to succeed are implemented. These imperatives are underscored across uses of human tissue as tissue is always an absolute, or relatively limited resource. In therapeutic uses such as transplantation, this requires that allocation be based on agreed transparent principles, such as need and anticipated benefit.[iii]

'

3.2.7 Stewardship and property rights

It is often debated who 'owns' tissue removed from patients for diagnosis and treatment. The concept of stewardship or custodianship may be preferable. Custodianship of tissue is inspired by respect for the patient's autonomy and seeks to honor their intention about how that tissue is used. Pathologists, along with other medical specialists, have an obligation to honor and realize the patient's intent. Such custodianship involves the charge and control of excised tissue within legal and/or policy parameters and the pathologist is entrusted to do this.

The issue of proprietorial rights over human tissue remains contentious in Australia and New Zealand. The traditional notion is that body parts, once detached, are res nullius, 'no one's thing'. A person thus does not remain the owner of their tissue once it has been removed for therapeutic reason, testing or donation.

At the same time there are concerns about unfettered ownership of tissue by for-profit organizations such as pharmaceutical or tissue product companies. The principal ethical concern being that a profit imperative would undermine patients' and the wider community's presumption that tissue will be principally used for public benefit and so damage public good will.

3.2.8 Transparency while protecting patient privacy

Transparency, especially in how organs and tissues are procured and allocated in therapeutic contexts, is important for public trust. At the same time, ensuring appropriate confidentiality of patients' information is foundational to ethical therapeutic and research practice. There are challenges in maintaining both transparency and confidentiality through every step of collection, processing, reporting, and storing/biobanking human cells and tissues.

3.2.9 Equitable access, fair allocation, benefit to the community

Tissue donated for therapeutics/research is considered an altruistic 'gift' with a range of ethical implications flowing from that, for example expectation that benefits derived from this gift will be for the community's benefit, rather than predominantly for profit.

Ethical use of human tissue presumes there will be equitable access to direct therapeutic uses of human tissue, for example in transplantation, or to indirect benefits, for example in better disease diagnosis and management arising from biobanking research. This entails a fair distribution of the benefits and burdens in developing those innovations; a process that is public and transparent for allocation of scarce resources; and that furthering the public interest is a guiding principle where non-therapeutic use of tissue, such as in research, is undertaken.

3.2.10 Prohibition on buying or selling human tissues but permissible commercialization practices

It is unethical and unlawful to purchase, offer to purchase or sell organs for transplantation. This is prohibited by statutes around the world. Such trade in human tissue for monetary payment is argued as commodification of the body. This is viewed as unethical because this, arguably, diminishes respect for the human body; opens vulnerable individuals up to exploitation; contravenes the 'spirit' of the altruistic gift of help to another that tissue donation embodies; and may diminish the willingness of others to donate. These might collectively undermine the social capital derived from therapeutics and research reliant on human tissue donation.

Research development and therapeutic use of 'tissue products' derived and modulated from donated tissue is however a permissible commercial use of human tissue. Limiting financial exchange on a cost recovery basis helps address some of the ethical risks identified above.

Section 4: Legal Framework

A challenge is always how to make current law reform relevant to the scientific developments of the future. Nowhere is this more relevant than in relation to regulation of human tissue. A nexus of national and jurisdictional statutes, related regulations, and jurisdictional policies in Australia and New Zealand govern the collection, storage, processing, distribution and clinical use of human tissue. These apply to various parties involved in these processes including patients, clinicians, researchers, clinical pathology staff, Schools of Anatomy, Human Research Ethics Committees and others. These are briefly described below.

Detailed advice about law pertaining to specific tissue-related activity is beyond the scope of this policy. RCPA recommends that members contact their Medical Defence Organisation for legal advice should concerns arise in practice about serious incidents/risk and possible legal ramifications.

Some principles relevant to the law and collection and use of human tissue

4.1.1 Medical practice generally and especially where that involves the procurement and use of human tissue is special because the therapeutic context and therapeutic intent justifies action that would otherwise be an injury e.g. damaging bodily structures in surgery.

4.1.2 Consent considerations are at the heart of law relating to removal of tissue. It is a general legal principle that unconsented interference with bodily integrity is unlawful.

4.1.3 There is a close relationship between the lawfulness of the removal of tissue and the lawfulness of any subsequent use of the tissue.

4.1.4 The traditional view has been that a body is not property and that the donor does not have a property claim on their removed or donated tissue, or tissue products derived from it. This remains contentious.

4.1.5 It is unethical and unlawful to purchase, offer to purchase or sell organs for transplantation, gametes and embryos. The legality of commercial dealings in other tissue is not always clear and is an evolving area.

4.2 Statutory Regulation

4.2.1 Human Tissue Acts

The Australian state-based Human Tissue Acts variously govern the donation and use of tissue from living and deceased persons for therapeutic and non-therapeutic purposes (e.g. research, education, audit, anatomical examination). These statutes deal with the donation of tissue for these purposes and the focus is how the tissue is obtained. They generally do not make provision for their storage, access, transfer to other practitioners or the further use of those samples.

The NZ Human Tissue Act 2008 addresses consent standards underpinning the lawful collection and use of human tissue from deceased people for therapeutic purposes. The Act has provision for a Regulatory Standard Non-therapeutic use of human tissue for the non-therapeutic use of human tissue, as well as standards and requirements for the importation and exportation of human tissue. The standard ensures that where a person, or their family/whānau, has given consent to the use of human tissue for non-therapeutic purposes (for example, research or education), correct processes are followed for collection, storage, use

and return/disposal of tissue.

4.2.2 Privacy legislation

The collection, storage, access to, or use of genetic samples (whether for the purposes of human genetic research or otherwise) relies primarily on the Australian Privacy Act 1988 (Cth). The Privacy Act, and similar state and territory legislation, is intended to protect the personal information of individuals and to give them control over how that information is collected, used and disclosed. This legislation sets out safeguards that organisations must observe in collecting, storing, using and disclosing personal information (including but not limited to genetic information).

4.2.3 Anatomy Acts

These state-based statutes regulate the acquisition and use of deceased bodies for anatomical examinations, teaching in medical schools and (some) research.

4.2.4 Tissue-specific legislation

Sensitive issues around reproduction have received attention. The research and therapeutic use of embryonic and foetal tissue is governed by the Research involving Human Embryos Act 2002 (Cth) and related regulation.

4.2.5 The Coroners Act

These state-based statutes authorize registered medical practitioners to remove parts of the body if this is necessary to ascertain cause of death.

4.3 Non-Statutory Regulation

4.3.1 National Pathology Accreditation Advisory Council (NPAAC) guidelines

Australian pathology laboratory accreditation arrangements efficiently and effectively regulate most pathology services. In Australia, the technical competency of medical and forensic testing is ensured by the accreditation scheme operated by the National Association of Testing Authorities (NATA). NATA is an independent, private, not-for-profit company.

The National Pathology Accreditation Advisory Council guidelines are the standard used by NATA and RCPA. These provide technical guidance but adherence to their standards is also important for maintaining ethical practice. Demonstrating technical competence is part of high quality, ethical service provision (see 3.2.5). Further, the guidelines state that confidentiality of patient information must be a primary consideration in the operation of a pathology service, and that pathology laboratories should have policies and procedures to ensure human tissue samples are treated with due respect.

http://www.health.gov.au/internet/main/publishing.nsf/Content/health-npaac-path-bestpractice

4.3.2 Biologicals Regulatory Framework

In Australia the supply and use of human cell and tissue-based therapeutic goods, or live animal cells, tissues and organs are collectively defined as ‘Biologicals’. This includes stem cells, tissue-based products (bone, skin, ocular, cardiovascular), cell-based products (genetically modified in-vitro cell expansion or depletion, combined cell and tissue products (collagen matrices).

The Framework applies various levels of regulation to products based on the risks associated with their use. The framework has also been designed to be flexible enough to accommodate

emerging technologies. It includes legislation, standards and guidelines, such as the Therapeutic Goods Act 1989 (Cth) in consort with Australian Regulatory Guidelines for Biologicals.

https://www.tga.gov.au/publication/australian-regulatory-guidelines-biologicals-argb

Section 5: Specific Considerations

Pathologists respect human tissue and recognize that ensuring human tissue collection, storage, distribution must be carried out with quality, safety and scientific rigor in mind. The following section identifies some of the associated ethical and legal issues.

Links to other guidelines are included for more detailed information. Note that therapeutic use of human tissue, for example in transplantation is excluded from this policy.

5.1 Use of human tissue for diagnostic purposes

Pathologists are cognisant of the serious adverse implications for patients' care should there be lapses in pathology process, such as lost, poorly labelled, or inadequately transported specimens. An incorrect or incomplete diagnosis offends against the obligation not to harm patients. Vigilance is needed to avoid these outcomes, including measures that assure traceability of the both the sample, and consent and other documentation.

5.1.1 Tissue blocks

Most commonly, human tissue is removed from the body during diagnosis or treatment. Prudence dictates some over-collection and this surplus is ordinarily discarded as clinical waste. However, material may be archived as slides or blocks during diagnosis and therapy for use in research, training, or evaluation of medical or laboratory procedures, such as to fulfil laboratory accreditation requirements or to meet laboratory standards.

These tissue blocks along with attendant documentation forms the pathological archive. This is a cardinal resource. Collectively and for individual patients, careful record keeping relevant to the histopathological archive allows definition of the natural history of disease; permits identification of new disease entities; establishes the efficacy, or sometimes, the failure of treatment; and permits reassessment of management if unexpected features are encountered. There may also be legal reasons for keeping samples, and a laboratory may wish to be able to re-test samples to confirm results at a later stage. This archive is essential in quality control and assurance of clinical and pathology practice.

Pathologists are knowledgeable experts and gatekeepers in guiding clinical colleagues in testing requests. While stocks of tissue blocks may be vast in some institutions, blocks capturing rare conditions and unusual pathology are a scare resource. Pathologists are obligated to use professional discretion in responding to test requests and not 'exhaust the block' in this circumstance.

5.1.2 Request for 'second opinion' on a test result, re-testing, or additional testing

Other medical specialists, pathologists, and less often patients may sometimes request second opinion on test results and/or request retesting of a human tissue sample. Sometimes different tests are warranted to enable full diagnosis or optimal treatment. Such requests can be ethically justifiable on the grounds of promoting patient benefit where there is a need for more comprehensive, or rare testing capabilities than is available locally. Optimizing diagnostic accuracy also reduces potential harms to patients.

The pathologist should consider duty of care obligations to the patient before agreeing to release a specimen for secondary testing at another facility, including that the identity of the

requester is confirmed, the rationale for provision of tissue is clear, and the tissue is not released to unauthorized third parties.

All such requests and surrounding communication should be informed by evidence, seek to maximize health benefits, and focus on the best interests of the patient. See RCPA Policy: *Provision of second opinions with particular reference to morphological examination* (P2/1999)

5.1.3 Genetic testing and personalized medicine

Ethical issues often arise in relation to genetic testing, largely related to the attendant complexities in the shared nature and ownership of genetic information. Testing provides information about the paternity, or potential disease profile of kinfolk, in addition to information about the individual from whom the samples were taken. See RCPA website for *Genetic Testing – Ethical and Legal Issues*. https://www.rcpa.edu.au/Library/Practising-Pathology/RCPA-Genetic-Testing/MAPSIG/ELIssues

'Personalised medicine' is the capacity to predict or alter disease development in an individual using genomics, proteomics or imaging. This may influence decisions about lifestyle choices. Alternately, it may help tailor medical practice, including cancer therapy, by using targeted drugs and treatments based on a detailed understanding of the genetic basis of this patient's disease. Ethical issues include access inequities to this emerging health resource; risk of over-diagnosis of harmless abnormalities and related anxiety; and adverse outcomes for a person interpreting their results where consumer testing and risk profiling has occurred outside a therapeutic relationship, especially where there is no treatment for an identified disease. The Nuffield Centre for Bioethics in the UK has developed materials addressing ethical concerns in personalized medicine. http://nuffieldbioethics.org/project/personalised-healthcare-0

5.2 Use of human tissue for quality assurance purposes

Pathologists manage demands for human tissue samples for use in a range of quality assurance activities – both internal and external to their organisation. The latter includes peer review activities and the Royal College of Pathologists of Australasia's Quality Assurance Programs.

Pathologists participating in peer review processes external to their organisation should be mindful of their custodianship responsibilities, including care in transport and de-identification of human tissue samples.

Most jurisdictions' privacy legislation recognize that quality assurance or clinical audit activities may constitute directly related secondary purposes (for which the tissue was collected) and for which explicit consent may not be required. However, patients probably expect these activities be undertaken with due diligence to maintaining their confidentiality. Maintaining confidentiality of patient information is challenging where the sample contains rare pathology.

5.2.1 Use of small tissue samples without consent in accreditation, or other quality assurance program, quality control program, audit or evaluation (NSW)

Amendments to the NSW Human Tissue Act were made to facilitate the use of tissue samples for carrying out analyses or tests. This commenced on 1 January 2006. These changes allow small tissue samples (size not defined) which have been lawfully removed from living or deceased persons to be used without consent for the purposes of carrying out analyses or tests that are "necessary for the delivery of services", or are "part of a program (including any quality assurance program, quality control program, audit or evaluation) to ensure, or improve, the quality of services carried out at, or by a hospital, a forensic institution, a laboratory, an educational or research institution, or a supplier of blood or blood products".

From: NSW Health Guideline 2006_021: Human Tissue: Requirements of the [NSW] Human Tissue Act 1983 in Relation to Research and Use of Tissue.
http://www1.health.nsw.gov.au/pds/ActivePDSDocuments/GL2006_021.pdf

5.3 Research uses of human tissue

Ethical concerns with the use of human tissue for research are thoroughly addressed in NHMRC National Statement on Ethical Conduct in Human Research (2007) (Updated May 2015). https://www.nhmrc.gov.au/guidelines-publications/e72 [iv]

This authoritative guideline outlines when research (including that using biospecimens) must be reviewed by a Human Research Ethics Committee (HREC) and the ethical considerations related to risk and benefit, proper consent standards and process. It takes the values of respect, research merit and integrity, justice, and beneficence in setting the standards for these matters.

It also includes advice in relation to ethical standards for importation/exportation of human tissue for research, including requirements for HREC approvals. (Chapter 3.4: Human biospecimens in laboratory-based research).

5.3.1 Biobanking

As large repositories of human tissue containing genetic material, biobanks offer the possibility of unprecedented advances in research and resulting therapeutics. However, traditional formulations of consent and confidentiality as a safeguard have needed to be modified, given the way in which biobanks must function. Ethical challenges for proper consent include:

- Informed consent concerns only the individual and does not take account of connected individuals which is fundamental to the power of research using multiple bio banked specimens.
- Biobanking is future oriented, thus consent cannot be informed at the time tissue is obtained.
- Biobanks are a research capability for many, not a single research project.
- Obligations for notifying tissue donors of incidental findings and giving back Individual Genetic Research Results are still subject to debate. The role of pathologists in this aspect of biobanking operations is unresolved.

See NHMRC Biobanks Information Paper (2010) https://www.nhmrc.gov.au/guidelines-publications/e110.

The large, newly established NSW State-wide Biobank has developed a “Consent Toolkit” addressing many of these ethical concerns. http://biobank.health.nsw.gov.au/nsw-health-biobank-consent-toolkit-new/

Aboriginal and Torres Strait Islander people have expressed concerns about the practice that has become known as ‘bioprospecting’— that is, the collection, screening, and use for commercial purposes of indigenous knowledge, and of genetic and biological products taken from Indigenous peoples and from their land. The principles of proper consultation, and consent in relation their participation in research, and their appropriate control on the use of, and benefit sharing from their genetic resources are required. The National Health and Medical Research Council’s Values and Ethics: Guidelines for Ethical Conduct in Aboriginal and Torres Strait Islander Health Research (2003) [v] is the authoritative statement on health research involving Aboriginal and Torres Strait Islander people.
https://www.nhmrc.gov.au/guidelines-publications/e52

5.3.2 Use of foetal tissue in research and therapeutics

These sensitive tissues obtained from death in utero or from spontaneous or induced abortion enjoy special safeguards. See NHMRC Ethical guidelines on the use of assisted reproductive technology in clinical practice and research (2017) https://www.nhmrc.gov.au/guidelines-publications/e79 and relevant legislation. https://www.legislation.gov.au/Details/F2017L01213

See also information about regulation of research using fetal-derived stem cells at: https://www.nhmrc.gov.au/about/nhmrc-committees/embryo-research-licensing-committee/human-embryos-and-cloning/stem-cells-clon

5.4 Use of human tissue for teaching purposes

In the past, and to some degree today, anatomically 'unusual' organs, tissues or body parts have been retained largely on clinician discretion and solely for teaching purposes. In addition, vast collections of anonymous, archival material in slides and blocks have been retained for decades.

Identifiability of the donor for large body parts has ethical significance. Most jurisdictions require donor consent for contemporaneous retention of body parts.

Respectful handling and disposal are always critical, regardless of prevailing consent standard at the time of collection, or the feasibility of re-identifying the patient if that is being contemplated.

5.5 Use of human tissue for commercial purposes

In Australia and New Zealand trade in human tissue is prohibited by state Human Tissue Acts and national guidelines – most recently NHMRC Ethical guidelines for transplantation of organs from deceased donors (2015). https://www.nhmrc.gov.au/_files_nhmrc/file/publications/16113_nhmrc_ethical_guidelines_fot_web_0.pdf

However, development and use of cellular therapies for commercial use is permitted. Cellular therapies include therapeutic applications such as bone screws/putty, collagen products, acellular dermis, as well as non-medical uses such as human collagen for cosmetic uses.

The concept of 'attenuation' is one means of making commercial use ethically permissible. A tissue is "attenuated" when it has undergone some technical process and, in so doing, the donated tissue has lost significance for the patient or their family. There are different attitudes across the community towards human tissue products that often privilege therapeutic over cosmetic products.

Explicit consent is required to use human tissue for commercial purposes.

Cost recovery is permissible provided it is not constructed in a way that covers the cost of the entire business.

The patenting of inventions derived from human tissue is a complex and contentious area. Exclusions in patentability include mere discoveries, immoral inventions, and biological processes.

See NHMRC information paper: *Ethics and the exchange and commercialisation of products derived from human tissue - background and issues* https://www.nhmrc.gov.au/guidelines-publications/e103

Section 6: Related RCPA policies, guidelines and positions statements

The following RCPA policies complement the advice contained in this guideline.

- Biobanking (GL 5/2014) https://www.rcpa.edu.au/getattachment/adb661dd-a262-4ffa-8e2d-53d0196c8874/Biobanking.aspx
- Code of Ethics (P 3/2014) https://www.rcpa.edu.au/getattachment/64dc2d7f-66f0-4c28-a974-8c31a4298687/Code-of-Ethics.aspx
- Genetic Tests that are Marketed Direct to Consumers (PS 2/2013) https://www.rcpa.edu.au/getattachment/2be86825-4c53-4d47-84ec-a2730954b021/Genetic-Tests-that-are-Marketed-Directly-to-Consum.aspx
- Patenting of human genes (PS 3/2011) https://www.rcpa.edu.au/getattachment/e11b2aef-86f6-4540-a62e-8817080998ba/Patenting-of-Human-Genes.aspx
- Provision of second opinions with particular reference to morphological examination (P 2/1999) https://www.rcpa.edu.au/getattachment/fba3a926-d5cd-40ad-8f09-7e21de72cecf/Provision-of-Second-and-Subsequent-Opinions-Histop.aspx
- RCPA genetic testing web page – including ethical and legal issues https://www.rcpa.edu.au/Library/Practising-Pathology/RCPA-Genetic-Testing/MAPSIG/ELIssues
- Return of tissue to patients (P 1/2009) https://www.rcpa.edu.au/getattachment/95606317-f724-4321-9d93-e471cb9185cb/Return-of-Tissue-to-Patients.aspx
- Transfer of specimens between different pathology providers (GL 2/2013) https://www.rcpa.edu.au/getattachment/56127ba6-15d6-4a3d-906d-03eee4ec000b/Transfer-of-Specimens-between-different-Pathology.aspx

Attachment 1 Case Study

Case

A 40-year old male presented to his GP with a pigmented lesion on his forearm and enlarged axillary lymph nodes. Excision by the local surgeon and histopathology revealed malignant melanoma.

The patient was then referred to a tertiary hospital for further management. Three years later, ongoing surveillance demonstrated radiology suggestive of distant metastases. Chemotherapy was commenced based on the initial biopsy results however further ancillary testing was requested on the original specimen as new therapeutic modalities had arisen. That testing could not be performed at the original laboratory. On contacting the original pathology service, the remaining tissue had been used for quality assurance purposes.

Discussion

This case demonstrates the importance of meticulous storage of, and documentation around, tissue samples. The patient has been diagnosed with a condition that has a spectrum of prognostic outcomes from full cure to death. This patient had undergone an intervention that totally excised the primary lesion. Obtaining a second tissue specimen involved difficult to reach metastatic disease, affecting treatment choices and prognosis. Diagnostic certainty is contingent on the original tissue being accurately tested but also sufficient amounts stored in such a manner so as to make it retrievable and prioritized so that it can be recalled for retesting or follow up as needed for the patient.

The pathologist's ethical obligations include conferring benefit to this patient through ensuring diagnostic accuracy. In addition, her obligation is to avoid harm to the patient by minimizing risk attendant in being misdiagnosed with a condition for which under- or over-treatment have serious adverse outcomes. (see section 5.1)

This case also demonstrates a significant departure from expected standards of practice by the pathology provider and probable failure in the legal 'duty of care'.

END NOTES

[i] Nuffield Council on Bioethics, *Human Tissue – Legal and Ethical Issues*, April 1995 http://nuffieldbioethics.org/project/human-tissue

[ii] Australian Law Reform Commission, *Genes and Ingenuity: Gene patenting and human health (ALRC Report 99), 2004*, https://www.alrc.gov.au/publications/3-gene-patents/social-and-ethical-dimensions

[iii] National Health and Medical Research Council (2016) *Ethical Guidelines for organ transportation from deceased donors.* Canberra: National Health and Medical Research Council http://www.donatelife.gov.au/sites/default/files/NHMRC%20Ethical%20Guidelines%20for%20Organ%20Transplantation%20from%20Deceased%20Donors.pdf

[iii] National Health and Medical Research Council, *Values and Ethics: Guidelines for Ethical Conduct in Aboriginal and Torres Strait Islander Health Research (2003).* https://www.alrc.gov.au/sites/default/files/pdfs/publications/ALRC99.pdf

REFERENCES

Dry S, Grody WW, Papagni P. Stuck Between a Scalpel and a Rock, or Molecular Pathology and Legal-Ethical Issues in Use of Tissues for Clinical Care and Research. *Am J Pathol* 2012; 137: 346-355

Grizzle WE, Bell WC, Sexton KC. Issues in collecting, processing, and storing human tissues and associated information to support biomedical research. *Cancer Biomark* 2010; 9 (1-6): 531-549

Jones DG, Gear R, Galvin KA. Stored human tissue: an ethical perspective on the fate of anonymous, archival material. *J Med Ethics* 2003; 29: 343-347

King E & Smith R. 1998. *Human tissue transplantation crime. Trends & Issues in Crime and Criminal Justice* No. 87. Canberra: Australian Institute of Criminology. https://aic.gov.au/publications/tandi/tandi087

Royal College of Pathologists of Australasia, *Code of Ethics* 3/2014 https://www.rcpa.edu.au/Library/College-Policies/Policies/Code-of-Ethics

Ruth M. Warwick RM, Brubaker SA, Biller-Andorno N, Wilson D, Kerridge I, Phil M, Chapman JR. Ethical Issues regarding the Use of Human Tissues and Cells in *Tissue and Cell Use: An Essential Guide*, October 2012

Sekadde-Kigondu C, Higgins T, Bruns DE, Gronowski AM. Ethical considerations in Clinical Chemistry and Laboratory Medicine, International Federation of Clinical Chemistry and Laboratory Medicine, January 2012 http://www.ifcc.org/media/446404/IFCC_TF_Ethics_in_Lab_Medicine.pdf

Tonti-Filippini N, Zeps N. Trade in human tissue. *Medical Journal of Australia* March 2011;194 (5): 263-265.

Widdows H, Cordell S. The Ethics of Biobanking: Key Issues and Controversies. *Health Care Anal* 2011; 19: 207-219

Zeps N, Bledsoe M. Managing the ethical issues of genomic research using pathology specimens, *Clin Biochem Rev* 2015; 36 (1): 21-27