



World Health Organization

Access to Safe and Effective Cells and Tissues for Transplantation

AIDE-MEMOIRE

*for National Health Authorities**

Tissue and cell transplantation represent essential and rapidly developing therapies in modern healthcare. It is the responsibility of national health authorities to ensure that the needs of patients are met with a supply of safe tissues and cells of appropriate and consistent quality. A nationally supported legislative framework which defines consent requirements and supports donation and a regulatory system which authorizes tissue and cell banks are prerequisites to achieving this goal. Donation and transplantation activities should be organized in a transparent way with the provision of adequate information and data to enable the public to make informed choices.

Tissue and cell transplantation carry risks of disease transmission. Viruses (including HIV, hepatitis B and C), bacteria, fungi, parasites and prion agents have been transmitted to tissue and cell recipients causing disease. The safety of tissues and cells for transplantation is assured by the careful selection of donors on the basis of their medical and behavioral history, physical examination and by testing of donor blood samples for transmissible agents. Donations should be procured only from non-remunerated donors from low-risk populations. In addition, whenever possible, validated pathogen inactivation or removal processes should be applied. Transplantation of tissues and cells should only be carried out when there is no option for a safer, equally effective, alternative therapy.

Any organization engaged in the procurement (including donor identification, consent, donor selection testing and tissue or cell retrieval), processing, storage or distribution of tissues and cells for transplantation should implement a comprehensive quality system. The system should cover all aspects of its activities and ensure traceability from the identification of the donor to the transplantation of the product to a recipient. Management commitment and support are essential for the development, implementation and monitoring of a quality system in order to ensure continuous improvement. All staff should understand the importance of quality and their role in achieving it consistently.

Words of advice

- Ensure that the legislative framework supports tissue and cell donation and transplantation
- Identify national or international technical reference documents (standards)
- Create a registry of all organizations that screen/test donors, and/or retrieve, process, store or supply tissues and cells for transplantation
- Confirm the implementation of quality systems in tissue and cell establishments
- Designate an authority to control compliance with standards
- Promote the education of health professionals and the public in support of tissue and cell donation
- Publish information and data on tissue and cell donation and transplantation to ensure transparency
- Promote optimal use of tissues and cells



Checklist

National Oversight

- ☐ Legislative/Regulatory framework
- ☐ Appropriate national/international standards
- ☐ Inspection and authorization of screening, testing, retrieval, processing, storage, distribution, import and export
- ☐ Surveillance and vigilance including transplantation transmitted disease
- ☐ Monitoring and reporting of donation, processing, distribution, import, export and transplantation activity data

Education and Promotion

- ☐ Campaigns to promote unremunerated donation
- ☐ Education of healthcare professionals to ensure optimal use of the national resource of tissue and cell donations

Safety

- ☐ Donor selection, deferral, care and confidentiality
- ☐ Donor screening and testing for infectious disease markers
- ☐ Avoidance of contamination and cross-contamination
- ☐ Monitoring of transplantation-transmitted disease

Quality Systems

- ☐ Clearly defined organizational structures
- ☐ Adequate resources (staff and facilities)
- ☐ Quality Manager in each cell/tissue establishment
- ☐ Comprehensive controlled documentation including Standard Operating Procedures (SOPs)
- ☐ Complete and accurate records to ensure traceability
- ☐ Appropriate, documented staff training and competency assessment

Assessment

- ☐ Validation or full verification of each process run and qualification of equipment
- ☐ Internal and external audits
- ☐ Error management, corrective and preventive action
- ☐ External quality assessment schemes

Clinical Use

- ☐ Traceability
- ☐ Appropriate use
- ☐ Clinical follow-up of transplant recipients

Key elements

National Oversight

National Health Authorities should ensure that there is a legislative framework that enables and supports the donation and transplantation of tissues and cells. It should define the type of consent that is required for living and deceased donors and should specify the particular requirements for potential donors who are vulnerable, ensuring that any potential for exploitation is avoided. It is important that activity taking place in the field of tissue and cell donation and transplantation is published in an easily accessible manner to ensure complete transparency; for example, if commercial companies are permitted to participate in any aspect of the tissue or cell processing or supply this should be openly stated. In this environment, members of the public can make decisions in relation to donation during or after life from an informed position.

National Authorities also have a responsibility to identify the national (or international) standards which should be met in the delivery of these services. They should designate an authority to inspect and authorize organizations participating in the procurement (including donor identification, consent, donor selection testing and tissue or cell retrieval), processing, storage or supply of tissues and cells for transplantation, ensuring that the established standards are complied with in practice including for imported and exported tissues and cells.. Systems for surveillance and vigilance should be in place on a national basis so that early warnings can be acted on and procedural changes introduced to minimize risks to recipients.

Safety

A full donor medical and behavioral history must be obtained, documented and reviewed for each donor to ensure that there is no contraindication to donation. Minimal requirements for donor selection and testing are detailed in WHO's Aide Memoire on "Key Safety Requirements for Essential Minimally Processed Human Cells and Tissues for Transplantation".

For deceased donors, a person who knew the donor well should be interviewed and a physical examination of the body carried out. Information from additional sources, such as the family doctor or an autopsy, if performed, may be required. The following key points should be addressed:

- ☐ Protect privacy and confidentiality of donor information
- ☐ Confirm validity of donor blood sample for testing - ensure it is not diluted by transfusions or infusions
- ☐ Avoid contamination and cross-contamination from retrieval through processing, storage and distribution
- ☐ Monitor adverse reactions in patients to allow corrective and preventive action

Quality Systems

Organizations involved in the procurement (including donor identification, consent, donor selection testing and tissue or cell retrieval), storage, processing or supply of cells and tissues for transplantation should have defined organizational structures which clarify the roles and responsibilities of each individual.

Individuals with responsibility for clinical aspects and for the management of the quality system should be identified. Adequate numbers of appropriately qualified and trained staff, with demonstrated competency, and secure premises suitable for their purpose should be provided.

All steps from donor identification to delivery for transplantation should be documented in Standard Operating Procedures which are authorized, regularly reviewed and available to those who carry out the procedures. Complete and accurate records of all steps in the chain should be maintained, including identification of lots of materials and reagents used.

There should be clear, secure separation between tissues/cells in quarantine and those available for use, with clear labelling of products and specification of transport parameters.

Assessment

Equipment should be qualified before use. Processes should be validated before use or verified for each process run to demonstrate that they achieve the intended result and do not adversely affect the safety or quality of the tissues or cells.

Regular monitoring of critical processing and storage parameters should be carried out and documented.

Internal audits should be conducted at regular intervals to ensure that the quality system is functioning well. These audits should be documented and corrective and preventive actions taken for any defects identified in the systems in place.

Where possible, external audits should also be conducted to demonstrate compliance with relevant national or international standards. Testing laboratories should participate in external quality assessment schemes when available.

Errors and complaints should be documented and investigated. Procedures for product recall should be in place. Regular review of reported errors and complaints will allow continuous system improvement.

Education and Promotion

Systems that promote donation by unremunerated, altruistic donors are safer and avoid the risks of donor or donor family coercion or exploitation. Health authorities should promote the donation of tissues and cells among the public by publicizing general patient needs and ensuring transparency of donation and transplantation activity. Public and Health professionals should be well informed about the options for donation before and after death. Health professionals should be able to answer questions from potential donors or their families

Clinical Use

All tissues and cells carry a risk of disease transmission and should be transplanted only when there is a clear clinical benefit and no safer, equivalent therapy is available. Clinicians should ensure that records are kept that will allow the traceability of every unit of tissues or cells transplanted to its recipients. Tissue and cell recipients should be followed-up to ensure that any unexpected reactions related to the transplant are identified, registered and investigated.

*National Health Authorities are defined as the culmination of authority bestowed to all jurisdictions within a country.

Additional information : Aide Memoire on key safety requirements for essential minimally processed cells and tissues for transplantation World Health Organization - 20 Avenue Appia, CH-1211 Geneva 27, Switzerland.