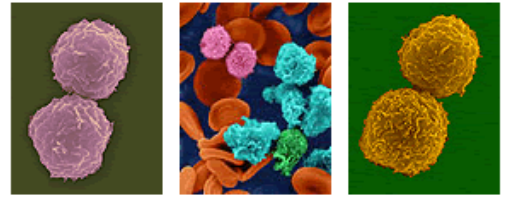




## South African Stem Cell Transplantation Society



### Accreditation of Transplantation Centres in South Africa. Preamble

Accreditation is the means by which a centre can demonstrate that it is performing to a required level of practice in accordance with agreed standards of excellence. Essentially it allows a centre to certify that it operates an effective quality management system.

A quality management system is a mechanism to ensure that procedures are being carried out in line with agreed standards with full participation by all staff members. In a stem cell transplant programme, this ensures that the clinical, collection and laboratory units are all working together to achieve excellent communication, effective common work practices and increased safety for patients. It is a means of rapidly identifying mistakes or mishaps and resolving them avoiding their repetition. It assists in training and clearly identifies the roles and responsibilities of all staff. With a working quality management system in place and adequate resources, the fundamental elements necessary to sustain the programme are continued staff commitment and vigilance.

- JACIE Standards
  - define an infrastructure required for all phases of the safe collection, processing, and administration of haematopoietic cells.
  - require an ongoing assessment of these activities.
  - do not prescribe the use of these therapies.
  - require all clinical, collection and processing facilities to evaluate and report clinical outcomes.

All accredited programmes must have in place a **Quality Management Programme** including quality audits; a system for detecting, evaluating and reporting errors, accidents, and suspected reactions; documentation; review and reporting; and safety. These standards are based on the standards of the Foundation for the Accreditation of Cellular Therapy.

To this end, facilities are required to meet, certain criteria detailed in these **Standards** for centres performing blood and marrow transplantation for the treatment of human disease. These **Standards for Blood and Marrow Progenitor Cell Collection, Processing and Transplantation** apply to all sources of haematopoietic progenitor cells and all phases of collection, processing, and administration of these cells and are considered **the minimum acceptable performance guidelines**. Clinical Programme Directors, Collection Facility Directors and Medical Directors assume responsibility for adopting these principles as fitting to the facility, and where appropriate, for setting more rigorous internal requirements. However it is important to keep in mind that **no standards can guarantee the successful outcome of such therapies**.

The basis for accreditation is **documented compliance** with these Standards. Accreditation is determined by evaluation of the written information provided by the applicant facility and by on-site inspection. Many health insurance plans and managed care organizations rely on FACT accreditation for designating Centers of Excellence.

## **Standards for Blood and Marrow Progenitor Cell Collection, Processing and Transplantation**

The purpose of this document is to establish national standards for all centres in South Africa performing haemopoietic stem cell transplants (HSCT). HSCT is currently performed for patients with malignant and non-malignant haematological conditions, solid organ tumours, inherited metabolic and primary immunodeficiency diseases. The list of current indications will continue to expand.

1.0 The Transplant Centres should ensure that,

- appropriate patients are considered for HSCT based on recognised clinical evidence
- services used meet appropriate levels of quality and safety
- a suitable framework is developed to address capacity issues and changes in practice

### **2.0 General**

2.1 A stem cell transplantation centre consists of designated inpatient and outpatient treatment facilities with doctors, nurses and other relevant personnel experienced in stem cell transplantation and the management of haematological diseases. There shall be a Programme Head and a team of trained personnel, a transplantation ward and access to a competent stem cell laboratory.

2.2 The Clinical Transplant Programme shall have written policies and procedures addressing all appropriate aspects of the transplant including donor and patient evaluation, admission procedures, conditioning regimens and administration of chemotherapeutic agents, infusion of stem cells, blood products and immunosuppressive agents, GVHD prophylaxis and management, nutritional requirements as well as management of neutropaenic sepsis and transplant-related complications. All centres performing HSCT shall seek accreditation.

2.3 A clinical service providing allogeneic transplantation should perform a minimum of 10 new patient procedures per annum with no minimum number for autologous transplants being required if performed within the same unit. A service providing solely an autologous HSCT service should perform a minimum of 5 new patient procedures per annum.

### **3. Facilities:**

3.1 Transplants shall be performed in a designated inpatient unit that minimizes airborne microbial contamination. Autologous-HSCT patients and hospitalized HSCT patients can be nursed in isolation rooms. The minimum requirements are single bedded, private accommodation with en suite sanitary facilities. HEPA filtration and positive pressure or laminar airflow are necessary for allogeneic transplants but are not required for an autologous HSCT service.

3.2 All facilities must be supported by a protocol for environmental hygiene e.g. room cleaning, filter cleaning/replacement schedule. Adherence to this protocol should be audited annually.

3.3 Amenities supporting an allogeneic programme should ideally be able to sustain respiratory therapy support and mobile renal dialysis facilities.

3.4 There shall be a designated outpatient day-care unit. Provisions shall be made for prompt evaluation and treatment of patients with complications on a 24-hours basis. These outpatient and day-case facilities shall be designed to minimise infection risk and facilitate IV drug and

blood product administration. This is usually in the day-care unit during office hours and in the transplant ward or haematology ward after hours.

3.5 A transfusion service of sufficient complexity shall be available to provide CMV appropriate as well as irradiated blood products, where indicated and at all times. In the eventuality that such products are not available alternative blood products should only be used according to a previously agreed protocol.

3.5.1 In the case of an allogeneic HSCT service access should also be made available to HLA DNA – based typing.

3.5.2 A protocol must be in place to support the transfusion of patients who, undergoing allogeneic HSCT, experience, as a result a change in blood group.

3.6A pharmacy shall be available to provide essential medications on a 24-hour basis. Pharmacy input into the transplant team multi disciplinary team (MDT) should come from a designated member of staff who is able to respond in an informed way to the themes pertaining to pharmaceutical management of HSCT patients.

3.7 A radiotherapy service shall be available within the vicinity.

3.8 Supportive services including specialists in the field of radiology, intensive care, neurology, nephrology, respiratory medicine, gastroenterology, cardiology and infectious disease shall be available for consultations.

#### **4.0 Laboratory**

4.1 A stem cell laboratory that is accredited for stem cell harvest, enumeration, processing and cryopreservation shall be available within the vicinity. The stem cell laboratory shall conform to the national standards of stem cell procurement and storage.

4.2 Centres performing allogeneic haemopoietic stem cell transplants shall have access to a HLA-testing laboratory with the capability to carry out DNA-based HLA-typing. This HLA-laboratory shall seek local as well as international accreditation.

4.3 Adequate diagnostic laboratory support with availability of microbiological tests, monitoring of drug levels, chimerism study and histopathology services is essential. The pathologist shall have experience in the histological interpretation of graft-versus-host disease.

#### **5.0 Staff**

5.1 There shall be a Programme Head and a team of trained personnel. The Head of Clinical Transplant Services shall be a clinician who has at least one year specific training in haemopoietic stem cell transplantation. There shall be an agreed deputy both of whom are deemed to have adequate experience for the role.

5.2 The Clinical Programme Director will

- Be responsible for the administrative and clinical functions of the service
- Have oversight of all elements of the clinical programme including quality management, selection and care of patients and donors, cell collection and processing (internal or contracted out)

- Have oversight of all medical care and the proficiency of those delivering that care
- Have oversight of the clinical care delivery by the transplant team MDT.

5.3 The Programme Director shall ensure that these protocols/policies are audited frequently and re-visited at least every 3 years.

5.3.1 As a minimum there must be written policies and protocols regarding,

- Chemotherapy administration and spillage
- Environmental management of the immuno compromised patient
- Clinical and laboratory monitoring of the patient
- Clinical use and management of blood products
- Use of prophylactic anti infection measures and growth factors
- Clinical management of neutropaenic sepsis
- Post discharge precautions

5.4 The adult stem cell transplant centre shall have at least one physician certified in Internal Medicine and accredited in Haematology or Medical Oncology.

5.5 Centres performing paediatric transplants shall have at least one physician certified in Paediatrics and accredited in Haematology/Oncology. All physicians shall be licensed medical practitioners registered with the Health Professional Council of SA with a recognized post-graduate/specialist certification e.g. MMED (or other College of Medicine registration) in Internal Medicine or Paediatrics, and accredited in one of the following medical subspecialties: Haematology, Pediatric Haematology/Oncology, or Medical Oncology.

5.6 The transplant nurses shall be formally trained and experienced in the management of HSCT patients. Training shall include haematology patient care, administration of high dose chemotherapy, growth factor and immunosuppressive medications, management and handling of central venous access, management of infectious complications associated with immunocompromised host, administration of blood products and some degree of intensive care. A minimum nurse : patient ratio of 1 : 2 is recommended.

The nursing team should,

- Be of a size adequate to ensure that staffing levels are safe and appropriate at all times.
- Have a greater nurse to patient ratio in allogeneic HSCT units
- Have enough flexibility to ensure 1:1 nursing where patients are severely ill
- Demonstrate core skills pertaining to IV administration of chemotherapy and other drugs via central lines and management of blood disorders
- Be proficient in cardio-vascular monitoring
- Have an adequate skill mix to ensure that experienced, post graduate qualified nurses are in place on each shift

5.7 The HSCT service must be supported by a sustainable MDT who function both in a virtual and physical manner to identify and deliver the optimum care for the patient. A requirement of a service providing allogeneic transplantation must be immediate access to,

- designated renal expertise and dialysis facilities on site, preferably within the HSCT unit
- accessible HDU/ICU care if not integrated within the HSCT unit

5.8 Mechanical ventilation facilities should be accessible on site and supported by a protocol for the management of patients ventilated off site and away from the HSCT setting. For units providing an autologous transplantation service only the above is desirable but not essential.

5.9 It is essential that the full MDT meet regularly to discuss, the clinical characteristics of patients undergoing HSCT, patients being worked up for HSCT and patients post HSCT under follow up. If patients are being followed up at unit level, where appropriate, these patients should be discussed at the request of the unit level team.

5.10 The program director (in patient / out patient) must identify the following members and supervise the cross cover/deputisation arrangements,

- Lead clinician and deputy who have adequate clinical experience of HSCT (as indicated by JACIE)
- Junior and senior clinicians providing 24hr on-call
- Lead nurse for in and out patient /day case setting
- Microbiologist / Virologist
- Radiologist
- Pharmacist
- Dietician
- Social worker / Psychologist
- Data manager

5.11 Patient discussion at the MDT should be supported by an agreed protocol that as a minimum confirms the decision making process and communication of that decision to the patient and clinical team

5.12 The transplant team shall be proficient in the following procedures.

- i. Identification and selection of haemopoietic stem cell source, including use of donor registries.
- ii. Knowledge in methodology and implications of HLA-typing.

#### 5.11.1 TRANSPLANT RELATED/TRANSPLANT SPECIFIC PROCEDURES

- i. Haemopoietic stem cell product thawing and infusion.
- ii. Handling of central venous access such as Hickman's catheter, mainly in situations of blocked lumen or indications for catheter removal.
- iii. Bone marrow harvest and apheresis procedures.
- iv. Administration of preparative regimen and growth factors.
- v. Management of patients receiving ABO incompatible haemopoietic stem cell products.
- vi. Diagnosis of haemopoietic stem cell engraftment failure.

#### 5.11.2 INFECTIOUS COMPLICATIONS

- i. Management of neutropaenic fever.
- ii. Diagnosis and management of fungal infections.
- iii. Diagnosis and management of CMV infections and other viral infections in the post-transplant setting
- iv. Diagnosis and management of other opportunities infections

#### 5.11.3 REGIMEN RELATED TOXICITIES

- i. Management of regimen related organ toxicities.
- ii. Diagnosis and management of veno-occlusive disease of the liver.
- iii. Management of thrombocytopenia and bleeding.
- iv. Management of thrombotic thrombocytopenic purpura.
- v. Management of haemorrhagic cystitis
- vi. Management of mucositis, pain, nausea and vomiting

#### 5.11.4 POST TRANSPLANT ISSUES

- i. Diagnosis and management of acute and chronic graft versus host disease

(GVHD).

ii. Evaluation of chimerism and management of engraftment failure.

iii. Use of immunosuppressive therapy.

iv. Monitoring of minimal residual disease, indications for donor lymphocytes and management of disease relapse.

v. Diagnosis and management of post-transplant immunodeficiency and reimmunisation post-HSCT.

vi. Diagnosis and management of post-transplant lymphoproliferative disease.

#### 5.11.5 PALLIATIVE CARE

i. Management of terminally ill patients.

5.12 There shall be pre-printed protocols to ensure that preparative regimens are administered safely.

### **6.0 Transplant patient and donor support**

6.1 The centre shall be well-versed in the selection of appropriate patients and selection of preparative regimen. Assessment of patient eligibility shall include medical fitness, medical history, physical examination and psychosocial evaluation.

6.2 Signed informed consent shall be obtained from the patient/legal guardian after a thorough discussion of the HSCT procedure and its risks.

6.3 If the patient's name is to be added to a HSCT registry, informed consent shall be obtained.

6.4 The safety of the donor shall be maintained.

6.5 The donor shall be given the opportunity to ask questions and the right to refuse to donate. Patients who have medical co morbidities shall have detailed counseling and documentation of the rationale for transplant.

6.6 The donor shall be informed about the significant risks and benefits of the procedure, tests performed to protect the health of the donor and recipient, and the rights of the donor to review the results of their tests. Informed consent from the donor shall be obtained.

6.7 Donor medical history, physical examination, psychosocial evaluation and laboratory test results shall be performed and suitability documented before initiation of the recipient's preparative regimen. This includes history of vaccination and blood transfusion. Any abnormal findings shall be informed to the prospective donor with proper documentation and recommendations made for follow-up care.

6.8 The use of a donor not meeting the collection facility's documented donor acceptance criteria shall require documentation of the rationale for his/her selection by the transplant physician and the informed consent of the donor and the recipient (or their parents or respective legal guardians).

6.9 Pregnancy tests for donors of child-bearing potential shall be performed.

6.10 Laboratory tests required for donor selection shall be done by an accredited laboratory and include at least the following:

(i) HLA-A, B, DR typing and other appropriate compatibility tests as indicated

- (ii) ABO group and Rh type
- (iii) Infectious disease screening including: HIV-1, HIV-2, HBV, HCV, CMV, toxoplasmosis and syphilis and, depending on the intended use of products, tests may be carried out for the following infectious diseases: EBV, HAV, VZV and HSV

6.11 Donor screening shall include questions to identify persons at high risk of blood borne virus infections.

6.12 Donor's fitness for marrow collection shall be documented.

6.13 In the case of more than one marrow / stem cell collection from the same donor, the tests listed in 5.9 (iii) shall be repeated prior to each collection if performed more than 30 days from the first collection.

6.14 PBSC donors shall be evaluated with regards to central venous access and the use of growth factors as mobilization therapy.

6.15 A full blood count, including platelet count shall be performed within 72 hours prior to the first PBSC collection and within 24 hours before each subsequent apheresis.

6.16 In accordance to the Human Tissues Act, donors shall not be offered any compensation or any form of reward.

## **7.0 Policies and procedures**

7.1 There shall be pre-printed protocols to ensure that preparative regimens are administered safely.

7.2 The treatment orders shall include patient height and weight, specific dates, daily doses and route of administration of each agent.

7.3 The pharmacist preparing the chemotherapy shall verify the doses against the protocol or standardized regimen listed on the orders. Two persons qualified to administer chemotherapy shall verify the drug and dose in the bag and the identity of the patient before administration.

7.4 The Clinical Transplant Programme shall have a written Quality Management Plan that includes incident reporting of errors, accidents, significant outcome parameters and adverse reactions.

7.5 Regular meetings shall be held for review, documentation, corrective actions and reporting.

7.6 Transplant centres are required to submit data to the SASCeTS and encouraged centres to participate in international registries.

## **8.0 Follow up**

8.1 Immediate follow-up (day 0 – 100) should be conducted at the transplant centre in facilities linked with the HSCT unit itself.

8.2 Where follow up is delivered prior to day 100 at a local unit it should only be done so through agreement between the programme director and the local unit level clinician. If this follow up

arrangement exists it then should be supported by a suitable protocol. Part of the agreed protocol must ensure that,

- The unit level clinician is 'integrated' into the BMT MDT
- Immediate access to the BMT services is ensured
- The unit level facilities are adequate for the management of the patient

8.3 Long term follow up over and beyond day 100 can be performed at unit level but should be supported by a suitable protocol. Communication between the BMT centre and the unit should be considered of a standard adequate for the unit to

- Provide follow up in an appropriate, safe and integrated manner
- Provide emergency interventions as required

## **9.0 Information**

9.1 Data collection must be an integrated part of the BMT service and all MDT personnel should recognise their individual role in collecting adequate data.

9.2 The Programme Director should work with colleagues across RSA to ensure common data items are collected. Key items of data that must be collected and reported on annually include,

- Primary diseases, and phases of diseases transplanted
- Types of transplants performed
- Donor selection
- Length of disease free survival
- All complications in first 100 days (including episodes of infection)
- All deaths within first 100 days
- Long term/delayed side effects
- Patient support including information for patients from units

9.3 Audits require three sets of performance information,

- a) Numbers of patients per type of transplant treated during the calendar year.
- b) Outcome of the procedure per diagnostic group.
- c) Number of patients waiting for BMT identifying primary disease, disease status, time waiting, predicted BMT date, point on clinical pathway ( donor search, bed awaited).

## **10. Clinical Research**

10.1 As many patients as possible should be offered the opportunity to be submitted into recognised clinical trials.

10.2 All research in patient based stem cell transplantation should follow good clinical practice methodologies.