

هيئة الصحة - أبوظبي
HEALTH AUTHORITY - ABU DHABI



Book 4: Transfer and Transplant of Human Organs

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Book 4: Transfer and Transplant of Human Organs

**Federal Law No. (15) of 1993 Regulating
the Transfer And Transplant of Human
Organs**

**Ministerial Decision No. (566) of 2010
On the Implementing Regulation
of Federal Law No. (15) of 1993
Regulating the Transfer and Transplant
of Human Organs**

**Unified Guide to Organ Transfer and
Transplant in the GCC**



Federal Law No. (15) of 1993
Regulating the Transfer
And Transplant of Human Organs

Federal Law No. (15) of 1993 Regulating the Transfer And Transplant of Human Organs

We, Zayed Bin Sultan Al-Nahyan, President of the State of the United Arab Emirates,

Upon consideration of the Provisional Constitution,

And Federal Law No. (1) of 1972, concerning the Jurisdictions of Ministries and the Powers of Ministers, as amended,

And Federal Law No. (7) of 1975, concerning the Practice of Human Medicine, as amended,

And based upon the proposal of the Minister of Health, the approval of the Cabinet, and the ratification of the Supreme Council of the Federation,

Have promulgated the following Law:

Article 1

Specialized physicians may administer the removal of organs from a living human body or a human cadaver and implant them in the body of another living person, with the intention of treating and saving the life of this person, in accordance with the conditions and measures provided for in this Law.

Article 2

A person may donate an organ or record his intention to make an organ donation, provided that a donor or testator shall have full

legal capacity. The donation or will shall be in the form of a written consent signed by the donor/testator and witnessed by two people with full legal capacity.

Article 3

There shall be no transfer of an organ from a living person, even with his consent, if the organ is the main organ of life, or if its removal will lead to the death of the person or render him unable to perform his duty.

Article 4

The donor shall be advised of all established and potential outcomes resulting from the removal of the donated organ. This shall be done by a specialized medical team following a general examination of the donor.

Article 5

The donor may, prior to the removal of the organ, unconditionally retract his offer to donate at any time. The donor may not retrieve the organ which was removed from him after having donated it in accordance with the law.

Article 6

Organs may be transferred from a human cadaver subject to approval by the next of kin up to the second degree. In case of multiple relatives of the same degree, a majority consent is required. In all cases, the consent shall be in the form of a written declaration under the following conditions:

1. Death shall be verified conclusively by a committee consisting of three trustworthy specialized physicians, of whom one is specialized in neurology. The operating physician shall not be on the committee.
2. The decedent shall not have expressed his will not to have any of his organs removed, by means of a written declaration witnessed by two people with full legal capacity.

Article 7

It shall be prohibited to sell or buy organs by any means, or receive a tangible return therefor. If aware of the same, the specialized physician shall be prohibited from performing the operation.

Article 8

The operations for the removal and transplantation of human organs shall be performed in the medical centres designated by the Ministry of Health for that purpose, in accordance with the conditions and measures specified by decision of the Minister of Health.

Article 9

The Minister of Health shall issue a decision setting out the conditions and specifications that shall be met by the venues where organs are preserved, and regulating their utilization.

Article 10

Without prejudice to any stiffer punishment stipulated under any other laws, anyone who violates this Law is punishable by confinement and a fine of not more than thirty thousand (30,000)

Dirhams, or by either one of these two punishments. In case of repetition within two years from the date of enforcement of the final judgment in respect of the first offence, the double of the punishment shall be applicable.

Article 11

The Minister of the Health shall issue the regulations and decisions necessary for the implementation of this Law.

Article 12

This Law shall be published in the Official Gazette and shall come into force one month after the date of publication.

Zayed Bin Sultan Al Nahyan President of the United Arab Emirates

Issued by Us at the Presidential Palace in Abu Dhabi
On 04 Rabie Ul Awwal 1414 Hijri
Corresponding to: 21 August 1993

**Ministerial Decision No. (566) of 2010
On the Implementing Regulation of
Federal Law No. (15) of 1993
Regulating the Transfer and Transplant
of Human Organs**

Ministerial Decision No. (566) of 2010 On the Implementing Regulation of Federal Law No. (15) of 1993 Regulating the Transfer and Transplant of Human Organs

The Minister of Health,

Upon Consideration of Federal Law No. (1) of 1972, concerning the Jurisdictions of Ministries and the powers of Ministers, as amended,

And Federal Law No. (7) of 1975, concerning the Practice of Human Medicine, as amended,

And Federal Law No. (5) of 1985, concerning the Civil Transactions, as amended,

And Federal Law No. (3) of 1987, concerning the Penal Code, as amended,

And Federal Law No. (11) of 1992, concerning the Civil Procedures, as amended,

And Federal Law No. (15) of 1993, Regulating the Transfer and Transplant of Human Organs

And Federal Law No. (2) of 1996, concerning the Health Facilities,

And Federal Law No. (28) of 2005, concerning the Personal Status,

And Federal Law No. (10) of 2008, concerning the Medical Liability,

And Federal Law No. (13) of 2009, concerning the Establishment of the Federal Health Authority,

And Cabinet Decision No. (33) of 2008, on the Implementing Regulation of Federal Law No. (10) of 2008 concerning the Medical Liability,

And the GCC Council of Health Ministers Decision No. (3) at the 61st conference on 24/5/2006, approving the GCC Unified Manual,

And Ministerial Decision No. (1054) of 2009, forming the National Committee for the Regulation of Transfer and Transplant of Human Organs,

And based upon the approval of the Health Council at its 9th meeting on 22/4/2010,

Has decided:

Chapter I Definitions

Article 1

The following words and expressions shall have the meanings set forth opposite each one, unless the context otherwise requires:

“State” means the United Arab Emirates;

“Ministry” means the Ministry of Health;

“Minister” means the Minister of Health;

“Health Entities” means the local health authorities;

“Concerned Authorities” means any authority directly or indirectly concerned with the procedures required to implement the provisions of Federal Law No. (15) of 1993, regulating the transfer and transplant of human organs and its implementing regulation;

“Law” means Federal Law No. (15) of 1993, regulating the transfer and transplant of human organs and its implementing regulation;

“Death” means the complete departure of life from the body, definitely and authoritatively, according to accurate medical standards, when the heartbeat and breathing have ceased completely and the physicians decide that such cessation is irreversible, or if all functions of the brain have ceased completely and the specialist (expert) physicians decide that such cessation is irreversible, and the brain starts to disintegrate;

“Donation” means the disposal of a body organ (s) without compensation;

“Will” means a person’s disposal of his body organ(s) during his lifetime and after death without compensation;

“Organ” means the group of connected tissues and cells that participate in specific vital functions inside the human body.

“Fully Capacitated” means the person who has completed twenty one lunar years of age, enjoys mental capacity and has not been interdicted.

Chapter II

Conditions and Procedures of Organ Removal

Article 2

1- Specialist physicians may perform operations to remove organs from a living human body or a human cadaver and transplant these

organs into the body of another living person, with the intention of treating and saving the life of this person, in accordance with the conditions and procedures provided for in the Law, its implementing regulation and its procedures.

2-Human dignity must be respected during the removal of the organs and protected from humiliation or deformation. No information related to the donor's body or the human cadaver shall be disclosed unless necessary.

Article 3

1-No organ may be removed from the body of a living person, even with his consent, if the organ is the main organ of life, or if its removal will lead to the death of the person or render him incapable of performing his duty, or if the specialist physicians suspect that the transplant will not be a success.

2-It shall be prohibited to remove the reproductive organs or organs which are carriers of genetic traits, or part thereof, from the body of a living person or a human cadaver and transplant them in the body of another living person.

3-No organ may be removed from a fully or partially incapacitated person (s), and the consent of such person (s) to or the approval of his legal representative (s) of removal thereof shall not be of significance in any way whatsoever, and any act undertaken in this regard shall be rendered null and void.

Article 4

Without prejudice to the physician's obligations provided for in Federal Law No. (10) of 2008 concerning medical liability, the following procedures shall be observed before commencing surgery to remove organs from a living person:

- a-Conducting all the required medical tests and lab analyses and complying with the medical principles provided for in the Procedural Manual - Annex 1, to verify that the donor is in good health, that donating the organ shall not cause him any harm or threaten his life and health and that the removal surgery will be conducted in accordance with acceptable medical principles.
- b-Performing a psychological examination on the donor by specialist physicians to verify that he is acting with free will and that he is psychologically fit to undergo the removal of the donated organ.
- c-After completing the tests and examinations mentioned in Paragraphs a and b, the donor must be notified, in writing and in his own language, of the results of the physical and psychological tests and all the confirmed and potential side effects resulting from the removal of the donated organ, as well as the potential effects on his personal, family and professional life.

Article 5

An Organ may be transferred from a human cadaver in one of the following two cases:

- 1.Issuance of a will within the limits of the Law;
- 2.Obtaining the approval of the next of kin, up to the second degree. In case of multiple relatives of the same degree, a consent of the majority is required, provided that it be in writing in all cases, on two conditions:

- a-That Death shall be verified conclusively by the death verification committee mentioned in Article 6 hereof.
- b-That the decedent shall not have, by virtue of a written declaration witnessed by two Fully Capacitated persons, expressed his will not to have any of his Organs removed, or shall not have, prior to his death, retracted his offer to donate.

Article 6

Death shall, in all cases, be conclusively verified by a committee called the “death verification committee”, in accordance with the procedures defined in Annex (1). This committee shall consist of three trustworthy specialist physicians, of whom one is specialized in neurology. The committee must not include a physician from the team of physicians performing the transplant procedure. A written medical report on the committee’s findings shall be drawn up and signed by all committee members.

Chapter III Donation and Will

Article 7

1. Both the donor and the testator shall be fully capacitated, and the act of making a donation or will shall be devoid of defects of consent.
2. The Donation or Will shall be in writing and witnessed by two Fully Capacitated witnesses.

Article 8

1. The donor may, at any time prior to the removal of an Organ, unconditionally retract his offer to donate; however, he may not retrieve the Organ after its removal.
2. The person, who has the right to approve the removal of an Organ from a human cadaver, may unconditionally change his mind before the removal surgery.
3. The testator may unconditionally change his will before his death.

Chapter IV

Prohibition of Organ Trafficking

Article 9

Trafficking of human organs by any means whatsoever is prohibited, and physicians are prohibited from knowingly performing such Organ transfer operations.

Chapter V

Concluding Provisions

Article 10

- 1.The performing of Organ removal operations is prohibited in any facility other than the medical centres which are licensed by the Ministry for this purpose.
- 2.The Ministry must coordinate with the Health Entities and Concerned Authorities in the State to establish one or more regulatory units to regulate Organ transfer and transplant in the State.
- 3.There shall be approved by a decision of the Minister the procedures and policies established by the national committee for regulating the transfer and transplant of human Organs.

Article 11

Without prejudice to the civil and criminal liabilities, any person who violates the provisions of this Regulation shall be subject to the disciplinary measures provided for in the applicable laws.

Article 12

1.The GCC unified manual for organ transfer and transplant in the GCC countries shall be adopted as the “Organ Transfer and Transplant Manual” in the State.

2.Without prejudice to the provisions of the previous Paragraph, the manual referred to in Paragraph (1) of this Article shall be reconsidered whenever its amendment by cancellation or addition is deemed necessary to keep up with the medical developments in the field of organ transfer and transplant.

Article 13

This Regulation shall be published in the Official Gazette and shall come into force on the date that it is published.

Hanif Hassan Ali
Minister of Health

Issued at the Ministry’s headquarters in Abu Dhabi

On 16 May 2010

Corresponding to: 2 Jumada II, 1431H.

**GULF UNIFIED GUIDE
TO ORGAN TRANSFER AND
TRANSPLANT IN THE GCC STATES**

Health Ministers' Council for GCC States Decision No. (3) dated 26/04/1427 H. Corresponding to 14/5/2006

The Health Ministers for GCC States, pursuant to the powers vested in them, have decided as follows:

First: To approve the Gulf Unified Guide to Organ Transfer and Transplant issued by the GCC Executive Board.

Second: All government and private hospitals and organ transplant centres shall comply with the procedures of the aforementioned Guide as of the date of issuance hereof.

Third: The executive undersecretaries and employees of the GCC Health Ministries shall implement this decision as it applies to them.

Minister of Health – UAE
Minister of Health – Bahrain
Minister of Health – KSA
Minister of Health – Oman
Minister of Health – Qatar
Minister of Health – Kuwait
Minister of Health – Yemen

Definitions

“Council” means the Gulf Cooperation Council.

“Health Ministers’ Council” means the Council of Health Ministers of the GCC states.

“Coordination Center” means the national center concerned with overseeing, monitoring and coordinating the services provided to patients with terminal organ failure, and with organ donation and transplant.

“Donor” means the person who donates an organ or part of an organ to be transplanted in a patient with terminal organ failure.

“Fully Capacitated Person” means a person who has attained at least 18 years of age.

“Death” means irreversible and complete cessation of the heart, breathing or brain.

Introduction

I am pleased to present to you the Gulf Unified Guide to Organ Transfer and Transplant, issued by my colleagues, members of the GCC Committee for Organ Transfer and Transplant, in their efforts to paint a picture of the development and progress witnessed by the GCC states in the field of organ transplant as well as the qualitative and quantitative expansion not only in transplant programs but also in the provision of care to organ failure patients. This Guide explains the technical and administrative procedures and every other matter related to the organ transplant program, including the scientific cause of death and the required conditions for diagnosis, how and who should explain the situation to the family of the deceased, the conditions and method of organ removal, the method of transfer and distribution to hospitals and, consequently, the organs received at the transplant center, the conditions for opening an organ transplant center whether in the public or the private sector, the method for monitoring the organ transplant results in different centers and many other procedures, which we believe have come at the right time, where the circulation of information and cooperation between GCC states on a scientific basis are necessary to guarantee safe performance and upgrade quality of performance.

Best regards

Unified Law for Organ Transfer and Transplant in the GCC States

A regulatory decision is a key reference in the field of organ transfer and transplant. Most of the GCC states initiated legislative instruments in this regard, varying in power between law and bylaws. All these regulations reflected the growing interest in laying down organ transplant procedures and conditions in the GCC states, and the dire need for a unified regulation of organ transfer and transplant in these states.

In response to the above approach, at its second meeting held in Muscat on 25-26/9/1994, the Organ Transplant Committee recommended working towards the unification of all the decisions and laws related to organ transfer and transplant in the GCC states as well as definition and diagnosis of death. The GCC Health Ministers' Council approved the aforementioned recommendation in clause 6 of the Council's Decision No. 3 issued at the 20th session of the 38th conference (Kuwait 11/1/1995).

For the purpose of implementing the decision of the GCC Health Ministers, the Organ Transplant Committee prepared the draft regulatory law (attached) entitled "Unified Draft Law Regulating Human Organ Transfer and Transplant in GCC states", which includes the principal rules governing organ transplant and the main controls for verification of death.

The draft law was submitted at the executive committee's meeting held in June 2004 in Dubai. The committee approved the draft law and recommended that it be presented to the GCC Health Ministers' Council, which, in turn, approved the draft law at its meeting at the 31st session – 61st conference, held on 26/4/1427 H. corresponding to 24/5/2006, by virtue of Decision No. 3

concerning organ transplant, since it included all the legislations of the GCC states and reflected the key points in these legislations.

Article 1

The following expressions, wherever they may appear in the present decision, shall have the following meanings:

“Council” means the Gulf Cooperation Council.

“Health Ministers’ Council” means the council of the Health Ministers of the GCC states.

Article 2

Specialized physicians, authorized in this regard, may remove organs from the body of a living or deceased person and transplant them in the body of another person for treatment or life-saving purposes, in accordance with the conditions and procedures hereunder.

Article 3

Any fully capacitated person may donate, whether during their lifetime or after their death, any of their body organs to treat or save the life of a patient. Donation during the donor’s lifetime shall take place by virtue of a written declaration signed by the donor. As for donation after death, the donor may order such donation during their lifetime, provided that the consent of the donor’s family is obtained after the donor’s death.

Article 4

The removal of an organ from a living donor's body is carried out after the donor undergoes a full medical examination conducted by a specialized medical team and is advised of all established and potential outcomes resulting from the removal of the donated organ.

Article 5

The donor may, at any time prior to the removal of the organ, unconditionally retract his offer to donate. The donor may not recover the removed organ after having donated it in accordance with this law.

Article 6

An organ may not be transferred from the body of a living person, even with his consent, if the organ is essential for life or if the removal of this organ will lead to the death of the donor or render him unable to perform a certain function.

Article 7

An organ may be transferred from a dead person after absolute verification of death by a committee of specialized physicians and after obtaining the written permission of the family of the deceased to donate his organs.

Article 8

Trading in human organs by any means shall be prohibited, and physicians shall not knowingly perform any organ transfer operation thereof, in accordance with the recommendations of

the World Health Organization and the Declaration of Istanbul on Organ Trafficking and Transplant.

Article 9

Organ transfer and transplant operations shall be performed at the specialized medical centers so licensed in the GCC states, in accordance with the conditions and procedures to be issued by a decision of the Health Ministers' Council.

Duties of the Coordination Center for Organ Transplant

The duties of the coordination center for organ transplant will include the following:

1. Coordinating services provided by various health sectors to patients with terminal organ failure, overseeing organ transplant programs and following up the execution of the procedures hereunder for the optimum accomplishment of these programs.
2. Coordinating and following up all death cases – Annex 1, diagnosed at different concerned State hospitals, in order to remove organs from the deceased to be distributed among the organ transplant centers according to the procedures hereunder.
3. Paying close attention to aspects of health information and awareness.
4. Conducting training programs and scientific seminars for persons working in the field of organ transplant.
5. Issuing different scientific publications and exchanging information with international centers to create a common ground for communication in the field of organ transplant.
6. Conducting researches and studies on diseases leading to

terminal organ failure in order to provide patients with better health services.

7. Drawing up specifications related to the establishment of organ transplant centers in health zones of the concerned states and regularly evaluating and assessing these centers as stated hereunder.

8. Collaborating with other coordination centers for organ donation – Annex 2 in GCC states with regard to all the aforementioned duties.

General Procedures for Organ Transplant in the GCC States

The general procedures that all hospitals and organ transplant centers must follow include:

1. To notify all suspected death cases to the coordination centers supervising organ transplant in the GCC states.
2. All hospitals must form internal committees to be responsible for death cases and organ donations, as follows:

a- Notification and Follow-Up Committee: Consisting of a physician and an administrator and/or a coordinator, or their designates, in addition to a medical coordinator – who shall notify the suspected death cases to the coordination center for organ transplant, follow up the regular communication of information, send all the required blood samples to the laboratory to verify the suitability of the organs of the deceased for transplant and coordinate with organ transplant centers at the hospitals in this regard. The duty of this committee will be to follow up all matters related to the death cases and notify thereof and submit its

recommendations towards developing the program of donation after death in its region to the coordination center for organ transplant.

b- Convincing Committee: To be formed by the director of the hospital. This committee shall address the family and relatives of the deceased to obtain their consent to donate the deceased's organs. The committee may consist of counselors who have been given special training in this field.

3. To provide conclusive verification of death through diagnosis according to the points contained in the Death Documentation Form by Brain Function Criteria – Annex 3, and according to the procedures specified in this regard, while making sure, in the case of a deceased woman, that the woman was not pregnant, where if her pregnancy is proven, organ donation shall not be taken into consideration, unless the fetus was deceased. No member of the medical team assuming the preparation and execution of the organ transplant may participate in the diagnosis of the death.

4. To obtain the approval of the legal successors of the deceased to the donation of his organs, whether they are inside or outside the country, in accordance with the consent form for organ donation under Annex 4. If the deceased or family cannot be identified, the approval of the competent official authorities must be obtained before removal of the organs.

5. To coordinate with the coordination center for organ transplant before the removal of any organ from the deceased so as to benefit from all the organs and distribute them according to the priorities guide.

6. To remove the organs at the hospital where the death has taken place and not transfer the case to another hospital unless upon occurrence of a force majeure. The hospital where the death has taken place shall be responsible for issuing the final death certificate.

7. When the death case is established at a hospital and the family approves the organ donation, the organs shall be distributed and transplanted as stated in the procedures guide with respect to each organ.

8. To verify the fulfillment of the following conditions upon transplanting organs from living persons:

- That the living donor is healthy and the donation will not cause harm to the health of the donor or the recipient; no entire organ shall be transferred if the life of the donor depends on that organ.
- That the decision of donation is based on complete conviction and approval without submission to social or material pressure.
- That the donation is supported by a written consent signed by the donor, who may withdraw his offer to donate at any time prior to the surgery.
- That the approved medical examination is carried out according to this Guide and that the donor is notified of all the potential and established consequences resulting from the removal of the donated organ, with the registration of the donor's notification thereof in writing in the donor's clinical file.

9. An organ transplant coordinator shall be assigned at each transplant center to carry out the following tasks:

- To act as a permanent contact with the coordination center for organ transplant.
- To notify the names of suitable transplant candidates at the hospital to the coordination center for organ transplant, to be placed on the national waiting list, and prepare the local waiting list relevant to each center according to the approved priorities guide.
- To coordinate with the coordination center for organ transplant

upon the occurrence of a death case in the respective center's supervision areas in order to offer the assistance needed depending on the case.

- To notify the coordination center in case no suitable transplant candidates are available on the local waiting list. Furthermore, an organ transplant coordinator shall be assigned in every State hospital to gather, regularly update and send the required information related to the transplant candidates (whether candidates for kidney, heart, liver, lung transplant or any other kind of transplant) to the coordination center for organ transplant according to the relevant forms; a representative shall be appointed on behalf of the coordinator in case of the latter's absence.

10. Every hospital and transplant center shall provide the coordination center for organ transplant with a list of their patients suffering from terminal organ failure. The coordination center shall draw up national and local transplant lists for all types of organs according to the priorities guide and provide the organ transplant centers with these lists to act accordingly.

11. Every transplant center shall provide the coordination center for organ transplant with reports and statistics related to the patients who have received an organ transplant whether from living relatives or brain-dead persons (every three months) in accordance with the follow-up forms.

12. All kidney transplant centers shall assume their responsibilities towards the patients in the areas under their supervision according to the approved procedures.

13. The transplant centers shall undergo evaluation every three years. The evaluation shall be carried out by competent committees, each in its area of specialization, pursuant to the standards established by the coordination center for organ transplant.

Procedures Followed by Kidney Transplant Centers to Perform their Obligations towards their Respective Intensive Care Units and Blood Purification (Blood Filtration) Units

1. The kidney transplant centers shall follow up and offer the required technical assistance to the blood purification (blood filtration) units in all the relevant hospitals, including:

- To ensure that every center will act as a consulting body in critical cases and surgical and non-surgical problems related to kidney transplant at blood purification (blood filtration) units.
- To draw up lists of tissue analysis for all suitable candidates with terminal renal failure at these units.
- To determine the suitable kidney transplant candidates at these units and provide the coordination center for organ transplant with their names and test results as per the approved forms.

2. Every kidney transplant center shall train all the employees at their respective intensive care units and provide them with technical supervision to raise their awareness towards detecting and immediately notifying death cases to the coordination center for organ transplant, which will collaborate with the kidney transplant center in the diagnosis, as per the procedures related to death cases and handling these cases and established by the death committee.

3. Every kidney transplant center shall receive information related to the death cases by means of the coordination center for organ transplant; coordination shall be established between the two centers and with the intensive care unit. The center shall carry out the duties and obligations assigned thereto up to the stage of organ removal.

4. Every kidney transplant center shall contribute to clarifying the concept of death and organ transplant at lectures and seminars, to the citizens and residents of the areas under their supervision.

Conditions of Organ Transplant at Private Hospitals

First: A private hospital may perform an organ transplant from a living person pursuant to the controls stated herein.

Second: A private hospital may not benefit from cases of organ donation after death occurring in other hospitals, whether private or government hospitals. It may only benefit from the death cases occurring at the hospital itself. The private hospital shall inform the coordination center for organ transplant about any death case that occurs at the hospital and may not remove any organ before coordinating with the coordination center for organ transplant, which will participate in diagnosing the case by means of a public sector physician. The private hospital shall not receive any financial compensation for the organs donated by the relatives of the deceased to patients with chronic organ failure.

Third: The private hospital shall carry out all the procedures stated in the guide prepared by the GCC Committee for Organ Transfer and Transplant and shall be subject to the same penalties that apply to all other hospitals in case of violation.

Fourth: The patients shall receive organs for transplantation according to the waiting lists, pursuant to the procedures prepared by the GCC Committee for Organ Transfer and Transplant. If the hospital does not have suitable transplant candidates, coordination shall take place with the coordination center for

organ transplant to give the organs to suitable candidates on the national waiting list according to the priorities guide. If the list does not include suitable transplant candidates, the suitable patient shall be located as stated in the priorities guide of each organ.

Kidney Transplant Specifications for Establishing Kidney Transplant Centers

The coordination center for organ transplant has determined, through its competent committees, the specifications associated with the establishment of kidney transplant centers in GCC states. These specifications include the following:

1. The technical team, consisting of:

1/1 Kidney transplant consultant:

A consultant in the field of kidney transplant with at least one year of experience at a recognized kidney transplant center shall be available at the center.

1/2 Kidney disease consultant:

At least one kidney disease consultant with at least one year of experience at a recognized kidney transplant center shall be available at the center.

1/3 Nursing body:

The persons in charge of the nursing staff, regardless of their gender, must have international expertise in giving care to patients during and after kidney transplant surgeries.

1/4 Kidney transplant coordinator:

He must have enough experience to qualify him to carry out the previous obligations and may be a member of the aforementioned technical team.

- 1/5 Nutritionist
- 1/6 Social worker

2. Technical equipment:

- 2/1 The hospital where the kidney transplant center will be established shall contain the following divisions*:
Division of cardiology, division of gastrointestinal diseases (endoscopy available), division of pneumology (endoscopy available), division of radiology, division of hematology, division of pathological autopsy, biochemical analysis laboratory, renal disease and blood purification unit (this unit must preferably contain mobile purification equipment), intensive care unit.
- 2/2 The hospital shall have at least two operating rooms.
- 2/3 At least two recovery rooms shall be available for inpatients after the transplant.

* Or shall have the capacity to provide these services at another hospital.

3. Support medical divisions, including:

- 3/1 Laboratory:
 - Special equipment shall be available to conduct all routine tests needed for the evaluation and assessment of the patients' condition before and after the transplant.
 - Equipment shall be available to carry out the following: tissue analysis, cytotoxic antibody regulation and drug level regulation, including cyclosporine or its agonists.
- 3/2 Radiology:
 - Regular X-ray imaging devices, ultrasonic C-scan photography, radionuclide diagnosis, CT scan.

4. Medication:

The following drugs must be available at all times:

4/1 Immunosuppressive drugs:

- Cyclosporine, azathioprine, prednisolone, mecophenolate mofetil and rapamune or their agonists.

4/2 Drugs used to treat transplant rejection, such as:

- Methylprednisolone, Anti-Lymphocyte Globulin (ALG) or Anti-Thymocyte Globulin (ATG) and monoclonal antibodies (OKT3).

4/3 Liquids used for organ ischemia, such as:

- Urecholine, University of Wisconsin solution or Histidine-Tryptophan-Ketoglutarate solution (HTK).

4/4 Drugs used for treating bacterial, viral, parasitic and fungal infections.

Conditions for Continuity of Kidney Transplant Centers

1. The center shall implement the required specification guides relevant to the establishment of new transplant centers.
2. The center shall conduct at least 10 transplant operations every year.
3. The kidney transplant center shall train the employees and workers at the intensive care units at the respective hospitals and provide technical and consultative supervision over the death cases occurring at the hospitals, in collaboration with the coordination center for organ transplant, provided that the kidney transplant center provides the coordination center with permanent reports regarding these activities.
4. The transplant center shall carry out all its assigned duties towards the citizens and residents, including raising awareness and holding lectures and seminars to explain all matters related to

organ transplant and death. It shall also submit regular reports in this regard to the coordination center for organ transplant.

5. The transplant center shall submit a detailed scientific report every year on the results of the transplants performed at the center to the coordination center for organ transplant, including:

- a- The condition of the patients that have undergone the kidney transplant operation.
- b- The condition of the transplanted kidneys.
- c- Percentage of complications.

6. The transplant centers shall be evaluated every three years by the kidney transplant committee at the coordination center for organ transplant. A permanent committee shall be formed from the kidney transplant committee. This committee shall have the right to visit any kidney transplant center at any time and whenever necessary to examine the work progress at the center.

7. The kidney transplant committee shall meet at the coordination center for organ transplant every year to study all the reports submitted by its permanent committee as well as the reports submitted by the kidney transplant centers and that include the death rate, the percentage of loss of transplanted organs and the health problems resulting from the transplant. If the committee finds that any of these centers is not abiding by the procedures of the Guide or that the success rate of the transplant operations carried out at the center is not satisfactory, the permanent committee generating from the kidney transplant committee shall visit the said center and study the reasons and obstacles hindering proper performance at the center. The center shall be given three months to improve its situation. Then, the kidney transplant committee shall meet again to evaluate the center's performance and shall have the right to make a recommendation

to the Medical Licenses Department at the Ministry of Health to shut down the center, if the center shows no improvement, provided that the committee's decision is taken by the two-third majority and in presence of at least 70% of its members.

8. These conditions shall apply to all transplant centers, those already existing and those to be established in the future.

Procedures of Kidney Transplant from Deceased Donors

Suitable candidates shall undergo kidney transplant from deceased persons according to the following procedures:

1. It must be established that the patients suffer from terminal renal failure.
2. It must be established that the patients do not suffer from another eminent organ disease (including active tuberculosis, active peptic ulcer, cancer or severe or chronic active infections).
3. The result of all the tests conducted on the patient shall be normal (see Annex 5 with respect to nondiabetic patients suffering from terminal renal failure and Annex 6 with respect to diabetic patients).
4. The patient shall be of proper age and weight to undergo transplant.
5. It must be verified that the patients are able to abide by the post-transplant treatment.
6. The patients shall be HIV negative.
7. The result of the Hepatitis B virus test must be negative. If it is positive, a sample shall be taken from the liver to prove that it is normal.
8. Regarding patients with anti-glomerular basement membrane or deoxyribonucleic acid antibodies (DNA) or anti-neutrophil

cytoplasmic antibodies (ANCA), these antibodies should become negative.

9. Regarding the specific procedures related to hepatitis virus infections, the following procedures shall be adopted:

a- Patients with Hepatitis B core antibody (HBcAb) or patients with immunity to the Hepatitis B Virus (HBV) may undergo kidney transplant using kidneys extracted from deceased persons carrying the same antibody.

b- Patients with Hepatitis C core antibody may undergo kidney transplant using kidneys extracted from deceased persons carrying the same antibody.

Conditions of Kidney Donation from Living Donors

1. Kidney donation from living relatives or non-relatives may occur as follows:

a- Donation from living relatives: The donors may be related by blood, by breastfeeding or by marriage (between the husband and wife and their relatives), provided that such relationship is established by means of the competent official authorities.

b- Donation from living non-relatives: Applied according to the conditions and controls of each country (for example: KSA – Annex 7: Controls and Conditions for Organ Donation from Living Non-Relatives).

2. Donation must be based on mutual consent and total conviction, free from pressure.

3. The donor must be in perfect physical and mental health – Annex 8.

4. The donor must not be under 18 or over 60 years of age.

5. The blood groups of the patient and the donor must be compatible.

6. The result of the tissue analysis test between the patient and the donor must be negative.
7. The Hepatitis B virus test must be negative.

Contraindications to Kidney Transplant in all cases

1. If the patient has incurable cancer.
2. If the patient has primary oxalosis (unless the patient undergoes double kidney and liver transplant).
3. If the patient is addicted to drugs or narcotics.
4. If the patient does not continue with the treatment or observe the medical instructions as stated.
5. If the patient suffers from another organ disease such as:
 - a- Liver cirrhosis
 - b- Liver cirrhosis with advanced esophageal varices
 - c- Untreatable fourth-degree heart failure
 - d- terminal respiratory failure limiting the patient's daily performance
 - e- Untreatable widespread vascular disease
 - f- Active hepatitis

Kidney Transplant Priorities Guide

The cases in which kidney transplants are conducted are determined as follows:

First: If the patient's life is in danger due to a problem related to the vascular access, he shall be given absolute priority and shall undergo kidney transplant as soon as a suitable kidney is available, provided that this condition is established by means of

the respective kidney transplant center, which will in turn formally notify the coordination center for organ transplant in this regard. Second: As for the remaining patients, they shall undergo kidney transplant according to the medical priority adopted based on the degree given to each case:

- Whenever the cytotoxic antibody percentage exceeds 50% by 10%, the patient is granted (one degree), and the degree will multiply whenever the increase percentage multiplies.
- If the patient is between 3 and 5 years old, he is given (3 degrees); if the patient is between 6 and 10 years old, he is given (2 degrees); if the patient is between 11 and 45 years old, he is given (1 degree).
- If the patient is treated by purification (filtration), he is given (0.1 degree) for each month he spends under treatment by purification.
- If the patient has already undergone a kidney transplant by donation from living relatives, he is given (2 degrees).
- If the patient's tissues are compatible with the donor's tissues, he is given (one degree) for each tissue compatibility.
- If the patient's blood group is compatible with the donor's blood group, he is given (3 degrees).
- If the patient's age is close to the donor's age, he is given (2 degrees).

After extraction, the kidneys shall be distributed as follows:*

The first kidney shall be transplanted into the suitable patient given priority on the national list established by the coordination center for organ transplant. The patient is brought in to the transplant center where the extraction is taking place, unless the patient is being treated in another transplant center, in which case the kidney will be sent to this center.

The second kidney shall be transplanted into the suitable patient given priority on the local list of the transplant center where the extraction is taking place, according to the priorities guide; if the technical conditions are available in a patient at the hospital that has notified the death case, the kidney shall be transplanted into this patient if possible.

The extracted kidneys shall be transplanted into the patients according to the waiting lists if the suitable patient is available. In case no suitable patient is available anywhere in the State, after consulting and obtaining the approval of the coordination center for organ transplant, these kidneys may be transplanted into other patients, in which case priority shall be given to resident patients then visiting patients. Exchange or transfer of kidneys with sister States may take place in accordance with the agreements concluded between the coordination center for organ transplant and similar institutions therein.

* The suitable candidate is the patient fulfilling the medical conditions and guide specifications.

Heart Transplant

Specifications for Establishing Heart Transplant Centers

The coordination center for organ transplant has determined, through its competent committees, the specifications associated with the establishment of heart transplant centers in GCC states. These specifications include the following:

1. The technical team, consisting of:

1/1 Heart transplant consultants:

A cardiovascular surgery team with adequate experience in open heart surgery shall be available at the center. They shall have conducted a sufficient number of open heart surgeries and have used the pump in at least 200 cases. The members of this team must have had experience in an internationally accredited heart center.

1/2 Intensive care specialist:

An intensive care specialist with experience in post open heart surgery follow-up and preferably with experience in following up heart transplant cases shall be available at the center.

1/3 Cardiology consultants:

Cardiology consultants who are capable of conducting all kinds of heart exams and tests, using regular or advanced techniques, and who have experience in following up cases of patients before and after transplant and in taking the required samples from the heart, shall be available at the center.

1/4 Nursing body:

The persons working in this area must have adequate experience in giving care to patients during and after heart transplant surgeries.

1/5 Organ transplant coordinator:**1/6 Social Worker****1/7 Nutritionist****2. Technical equipment:**

2/1 The hospital where the heart transplant center will be established shall contain the following divisions*:

Division of gastrointestinal diseases, division of radiology, division of hematology, division of pathological autopsy, biochemical analysis laboratory, renal disease and blood purification unit, division of immunology.

2/2 The hospital shall also contain:

- Two operating rooms (at least) fully equipped for open heart surgery.
- Heart assist devices such as the Intra-aortic balloon pump (IABP), the cardiopulmonary bypass machine (artificial heart) and other assist devices, along with the required specialized technicians to operate these devices.
- An intensive care unit fully equipped for open heart surgeries, where the patients may be isolated, if necessary, and a pacemaker may be temporarily or permanently transplanted.

2/3 The following specializations must be available at the hospital:

- A kidney specialist with experience in following up organ transplant cases.
- An immunology specialist with experience in following up heart transplant cases.
- A pulmonologist.
- A physiotherapist concerned in providing patients with respiratory care.
- A specialist in epidemic diseases.
- A medical team to control epidemic diseases at the hospital.
- A pathological autopsy specialist with experience in reading and analyzing samples taken from the heart membranes and muscle.
- A psychiatrist.

3. Support medical divisions, including:

3/1 Laboratory:

- Special equipment shall be available to conduct all routine tests needed for the evaluation of the patients before and after the transplant.

- Special equipment shall be available to carry out the following: tissue analysis, cytotoxic antibody regulation and drug level regulation, including cyclosporine or its agonists, as well as the different immunological tests.

3/2 Radiology:

- Regular X-ray devices, radionuclide diagnosis, CT scan, 2D echo.

4. Medication: The following drugs shall always be available:

4/1 Immunosuppressive drugs:

- Cyclosporine, azathioprine, prednisolone, mecophenolate mofetil and rapamune or their agonists.

4/2 Drugs used to treat transplant rejection, such as:

- Methylprednisolone, Anti-Lymphocyte Globulin (ALG) or Anti-Thymocyte Globulin (ATG) and monoclonal antibodies (OKT3).

4/3 Liquids used for organ ischemia, such as:

- Urecholine, University of Wisconsin solution or Histidine-Tryptophan-Ketoglutarate solution (HTK).

4/4 Drugs used for treating bacterial, viral, parasitic and fungal infections.

Cases of Heart Transplant

The patient must fulfill all or some of the following conditions in order to undergo a heart transplant:

First: He must have a terminal heart failure (the ejection fraction of the heart is less than 20%) and his heart is not responding to medical or surgical treatment.

Second: He must be classified in Class III (difficulty in breathing upon making a simple effort) or in Class IV (difficulty in breathing without any effort) according to the NYHA functional classification.

Third: He must have a non-extractable heart tumor.

Fourth: He cannot be separated from the cardiopulmonary bypass machine (artificial heart) after undergoing any surgical procedure.

Fifth: He is in danger of quick death after an occlusion of the coronary artery (myocardial infarction).

See Annex 9 (Guide of tests that patients with terminal heart failure must undergo prior to heart transplant).

Contraindications to Heart Transplant

First: Absolute Contraindications:

- If the patient has exceeded 55 years of age.
- If the patient has high pulmonary vascular resistance (more than 6 Wood units) in spite of undergoing intensive heart treatment using inotropic drugs and other.
- If the patient has cancer.
- If the arteries surrounding the body are infected.
- If an infection is spread in the body's blood vessels as a result of a collagen disease.
- If the patient suffers from an above-average renal failure as a result of heart failure.
- If the patient suffers from an above-average hepatic failure as a result of heart failure or if this failure is accompanied with a blood coagulation disorder.
- If the patient suffers from another organ disease in its final stage such as (terminal respiratory failure, amyloidosis... etc).
- If the patient is psychologically unstable and may not continue with the treatment or observe the medical instructions as stated.
- If the patient has HIV.
- If the patient is addicted to narcotics including alcohol and drugs.

Second: Relative Contraindications *:

- If the patient has diabetes, especially if it is type 1 diabetes, and needs treatment with insulin.
- If the patient has peptic ulcer.
- If the patient suffers from a pulmonary infarction as a result of pulmonary embolus during the pre-healing stage.
- If the patient is overly obese.
- If the patient has cachexia (physical wasting).
- If the patient's clinical indications reveal a former infection with the Cytomegalovirus, the Epstein – Barr virus, toxoplasmosis, sickle cell disease or thyroid gland disorder.
- If the patient has high and uncontrolled arterial blood pressure.
- If he has an active infection in any of the body systems.

* If the patient's clinical indications reveal a former case of tuberculosis or if the tuberculosis test turns out to be positive but without an active infection, the patient shall be placed under Isoniazid treatment for 12 months.

Heart Transplant Priorities Guide

The coordination center for organ transplant has determined, through its competent committees, the priorities by virtue of which heart transplants are performed, as follows:

1. If the patient is a resident at the hospital and placed under artificial respiration, if he is living on mechanical cardiac-support devices and needs to be provided with inotropic drugs at all times or if separating him from the cardiopulmonary bypass machine (artificial heart) is impossible.
2. If the patient is a resident at the hospital and needs to be provided with inotropic drugs at all times or else he will need

artificial respiration or mechanical cardiac-support devices.

3. If the patient is on the heart transplant waiting list without being a resident at any hospital.

After extraction, the heart shall be distributed as follows:*

a- Every heart transplant center shall prepare a local waiting list to be sent to the coordination center for organ transplant where a local waiting list will be formed according to the priorities guide (see the heart transplant priorities guide). The transplant center may, after notifying the coordination center for organ transplant, change the priority level of the patient if the case so requires.

b- The hospitals shall notify the names of their patients who are in urgent need of heart transplant. These names shall be entered in an urgent waiting list at the coordination center for organ transplant.

c- The hearts shall be distributed to the patients stated on the urgent waiting list, regardless of the turn of the center that will carry out the transplant, for first priority patients shall not follow the turn system in heart distribution and shall be given absolute priority whenever a heart is available for transplant, wherever they may be and at whatever center in the Gulf states.

d- If the urgent list does not contain a suitable candidate for the heart transplant, the heart shall be given to the transplant center whose turn has come, if such center has the suitable candidate. If said center does not have a suitable candidate for the transplant, the heart shall be given to the center that has a suitable candidate. Priority between the patients who do not have first priority shall be given according to blood group compatibility and the waiting period of the patient on the list.

* The suitable candidate is the patient fulfilling the medical conditions and guide specifications.

Lung Transplant

Specifications for Establishing Lung Transplant Centers

The coordination center for organ transplant has determined, through its competent committees, the specifications associated with the establishment of lung transplant centers in the Kingdom. These specifications include the following:

1. The technical team, consisting of:

1/1 Lung transplant consultants:

A team of consultants in thoracic and vascular surgery shall be available at the center. The members of this team shall have had experience in lung transplant at an internationally accredited surgery center and shall have conducted a sufficient number of transplants.

1/2 Intensive care specialist:

An intensive care specialist with sufficient experience in post lung surgery follow-up, and preferably with experience in following up lung transplant cases, shall be available at the center.

1/3 Chest disease consultants:

Chest disease consultants, who are capable of conducting all kinds of lung exams and tests, using regular or advanced techniques, and who have had experience in following up the condition of lung patients before and after the transplant and in taking the required samples from the lung, shall be available at the center.

1/4 Nursing body:

The persons working in this area must have adequate experience in giving care to patients during and after lung transplant surgeries.

1/5 Organ transplant coordinator:

1/6 Social worker

1/7 Nutritionist

2. Technical equipment:

2/1 The hospital where the lung transplant center will be established shall contain the following divisions*:

Division of gastrointestinal diseases, division of radiology, division of hematology, division of pathological anatomy, biochemical analysis laboratory, renal disease and blood purification unit, division of immunology, division of cardiology, division of cardiac surgery.

2/2 The hospital shall also contain:

- An operating room fully equipped for lung surgery.
- An intensive care unit, where patients may be isolated if necessary.

2/3 The following specializations must be available at the hospital:

- A renal disease specialist with experience in following up organ transplant cases.
- An immunology specialist.
- A cardiology specialist.
- A physiotherapist concerned in providing patients with respiratory care.
- A medical team to control epidemic diseases at the hospital.
- A specialist in pathological autopsy with experience in reading and analyzing samples taken from the trachea and lung tissue.
- A psychiatrist to evaluate the patient's psychiatric state before and after the transplant.

3. Support medical divisions, including:

3/1 Laboratory:

- Special equipment shall be available to conduct all routine tests needed for the evaluation of the patients before and after the transplant.

- Equipment shall be available to carry out the following: tissue analysis, cytotoxic antibody regulation and drug level regulation, including cyclosporine or its agonists, as well as the different immunology tests.

3/2 Radiology:

- Lung X-ray machines shall be available to conduct all kinds of regular and advanced tests (thoracic CT scan, scintiscan... etc).

4. Medication:

The following drugs shall be available at all times:

4/1 Immunosuppressive drugs:

- Cyclosporine, azathioprine, prednisolone, mecophenolate mofetil and rapamune or their agonists.

4/2 Drugs used to treat transplant rejection, such as:

- Methylprednisolone, Anti-Lymphocyte Globulin (ALG) or Anti-Thymocyte Globulin (ATG) and monoclonal antibodies (OKT3).

4/3 Liquids used for organ ischemia, such as:

- Urecholine, University of Wisconsin solution or Histidine-Tryptophan-Ketoglutarate solution (HTK).

4/4 Drugs used for treating bacterial, viral, parasitic and fungal infections.

Cases of Lung Transplant

The patient must fulfill all or some of the following conditions in order to undergo lung transplant, such as terminal respiratory failure resulting from:

First: Severe obstructive pulmonary disease of all kinds.

Second: Restrictive lung disease of all kinds.

Third: Severe primary pulmonary hypertension or progressive secondary pulmonary hypertension along with Eisenmenger disease.

Fourth: Suppurative lung disease.

See Annex 10 (Guide of tests that patients with terminal respiratory failure must undergo prior to lung transplant).

Contraindications to Lung Transplant

First: Absolute Contraindications*:

- If the patient suffers from active non-pulmonary infection or active pulmonary infection in case of single lung transplant.
- If the patient has other organ diseases such as renal failure and hepatic failure.
- If the patient's coronary arteries are severely damaged or if he suffers from disorder in the function of the left heart or disorder in the function of the right heart (the ejection fraction of the heart is less than 25%), unless he will be undergoing a double heart and lung transplant.
- If the patient is psychologically unstable and may not continue with the treatment or observe the medical instructions as stated.
- If the patient has a new incurable cancer.
- If there is a possibility that the patient may stay alive for a period varying between 18 – 24 months, his dynamic lung function is within the reasonable limits and he does not always need oxygen.

* The patient's age does not constitute an obstacle in lung transplant provided that his cardiac renal and hepatic functions are in good condition at the time of the transplant.

Second: Relative Contraindications:

- If the patient has been placed under artificial respiration for a long time; however, this is no longer a contraindication to lung transplant at many centers, especially if the patient wishes to undergo the transplant and his cardiac, renal and hepatic functions

are within the reasonable limits.

- If the patient has received high doses of steroid orally or intravenously and over 15 mm of Prednisolone a day; today, it is possible to approve lung transplant for such patients even if it is not possible to take them off steroid treatment before the surgery, because the new techniques in esophagi surgery and fabrication will allow healing after surgery without risking the splitting of the esophagus.
- If the patient has undergone chest surgeries in the past such as pleural biopsy or fixation; however, there is a tendency to conduct lung transplant (one side or double side consecutive) on these patients by cutting the anterior chest through the sternum.
- If the patient has been smoking up to the year preceding his acceptance on the lung transplant waiting list.

After extraction, the lung shall be distributed as follows:*

- a- Every lung transplant center shall prepare a local waiting list to be sent to the coordination center for organ transplant in order to be included in a national waiting list.
- b- The lung transplant centers shall notify the names of their patients who are in urgent need for lung transplant. These names shall be stated on an urgent waiting list at the coordination center for organ transplant.
- c- The lungs shall be distributed to the patients stated on the urgent waiting list at the coordination center for organ transplant, regardless of the turn of the center that will carry out the transplant.
- d- If the urgent list does not contain a suitable candidate for the lung transplant, the lung shall be given to the transplant center whose turn has come, if such center has the suitable candidate. If not, the lung shall be given to the center that has a suitable candidate.

* The suitable candidate is the patient fulfilling the medical conditions and guide specifications and whose chest size is compatible with the chest of the deceased donor as per the approved criteria.

Liver Transplant

Specifications for Establishing Liver Transplant Centers

The coordination center for organ transplant has determined, through its competent committees, the specifications associated with the establishment of liver transplant centers in the GCC states. These specifications include the following:

1. The technical team, consisting of:

1/1 Liver transplant consultants:

- A consultant in the field of liver and biliary tract surgery shall be available at the center. The consultant shall have had at least one year of experience at an internationally accredited liver transplant center.
- A liver disease consultant with at least one year of experience at an internationally accredited liver transplant center.
- A consultant paediatric gastroenterologist with at least one year of experience at an internationally accredited liver transplant center.

1/2 An anesthesiologist with at least six months of experience at an internationally accredited liver transplant center.

1/3 Intensive care consultant

1/4 Nutritionist

1/5 Epidemic disease consultant

1/6 Liver transplant coordinator

1/7 Nursing body:

The persons working in this area, regardless of their gender, shall

have adequate experience in giving care to patients during and after liver transplant surgeries.

2. Technical equipment:

2/1 The hospital where the liver transplant center will be established shall contain the following divisions:

Division of cardiology, division of endoscopy, division of radiology, division of hematology, division of pathological autopsy, biochemical analysis laboratory, renal disease and blood purification unit, intensive care unit, division of immunology, division of pneumology, division of psychiatry, division of physiotherapy, microorganism division (bacteria, parasites, viruses, fungus).

2/2 The hospital shall also contain two operating rooms that are equipped with all the necessities required for liver transplant surgery, particularly the following devices:

Thromboelastogram, blood return device, perfusion pump, veno-venous hemofiltration, blood stop or replacement laser device, blood warming device, along with the competent technicians to operate these devices.

3. Support medical divisions, including:

3/1 Laboratory:

- Special equipment shall be available to conduct all routine tests needed for the evaluation and assessment of the patients' condition before and after the transplant.
- Special equipment shall be available to carry out the following: tissue analysis, cytotoxic antibody regulation and drug level regulation, including cyclosporine or its agonists.

3/2 Radiology:

- The hospital or center shall contain the following: Regular X-ray imaging devices, ultrasonic C-scan photography (Doppler),

radionuclide angiogram, CT scan, cardiac tomography, percutaneous cholecystostomy.

3/3 Endoscopy:

This division shall contain all curative and diagnostic capabilities including pancreascopy and endoscopic retrograde cholecystostomy.

4. Medication:

The following drugs must be available at all times:

4/1 Immunosuppressive drugs:

- Cyclosporine, azathioprine, prednisolone, mecophenolate mofetil and rapamune or their agonists.

4/2 Drugs used to treat transplant rejection, such as:

- Methylprednisolone, Anti-Lymphocyte Globulin (ALG) or Anti-Thymocyte Globulin (ATG) and monoclonal antibodies (OKT3).

4/3 Liquids used for organ ischemia, such as:

- Urecholine, University of Wisconsin solution or Histidine-Tryptophan-Ketoglutarate solution (HTK).

4/4 Drugs used for treating bacterial, viral, parasitic and fungal infections.

Cases of Liver Transplant

The patient must fulfill all or some of the following conditions in order to undergo liver transplant:

First: Acute (sudden) liver failure resulting from:

1. Hepatitis A, B, C, D and CMV or the Epstein – Barr virus..etc
2. Drugs that are toxic for the liver (halothane, disulfiram, acetaminophen...etc)
3. Metabolic liver diseases
4. Wilson's disease

5. Rey's disease
6. Severe hepatic trauma
7. Other diseases

Second: Chronic liver diseases in advanced stages, including:

1. Primary biliary cirrhosis
2. Primary sclerosing cholangitis
3. Biliary tract obstruction
4. Autoimmune hepatitis of unknown etiology
5. Chronic alcoholic cirrhosis
6. Chronic toxic hepatitis resulting from various toxins
7. Chronic viral hepatitis
8. Vascular diseases of the liver (Budd-Chiari Syndrome) or (veno-occlusive disease)

Third: Hereditary metabolic liver diseases, including:

1. Alpha 1-Antitrypsin
2. Wilson's disease
3. Crigler-Najjar Syndrome
4. Glycogen storage disease
5. Protein C deficiency disease
6. Oxalosis

Fourth: Local hepatic tumors, such as:

1. Hepatocellular Carcinoma
2. Other liver cancers
3. Transitional liver cell tumor (carcinoid...)

See Annex 11 (Guide of tests that patients with chronic liver failure must undergo prior to liver transplant).

Contraindications to Liver Transplant

First: Absolute Contraindications:

- If the patient has an active infection outside the biliary system.
- If the patient has any kind of cancer other than liver cancer.
- If the patient is HIV positive.
- If the patient has terminal heart or lung failure.
- If the patient is addicted to alcohol or drugs.

Second: Relative Contraindications:

- If the patient is under 4 weeks or over 65 years of age.
- If the patient has active Hepatitis B.
- If the patient has undergone major abdominal surgery.
- If the patient has a big Hepatocellular Carcinoma (more than 5 cm) or suffers from multifocal cancer (more than 3 lesions).
- If the patient has biliary duct cancer.

Liver Transplant Priorities Guide

The coordination center for organ transplant has determined the priorities by virtue of which liver transplants are conducted, as follows:

- If the patient is at the intensive care unit and placed under artificial respiration (4th degree), which shall have top priority; the patient's degree shall be reevaluated weekly.
- If the patient is at the intensive care unit but not placed under artificial respiration (3rd degree).
- If the patient is an inpatient at the hospital (2nd degree).
- If the patient is at home (1st degree).
- If there is a temporary reason prohibiting the patient from undergoing liver transplant (0 degree), provided that his condition is reevaluated after the reason disappears.

After extraction, the liver shall be distributed as follows:

- a- Every liver transplant center shall prepare a local waiting list to be sent to the coordination center for organ transplant where a national waiting list will be formed according to the priorities guide (see the liver transplant priorities guide).
- b- The liver transplant centers shall notify the names of their patients who are in urgent need for liver transplant. These names shall be entered in an urgent waiting list at the coordination center for organ transplant.
- c- The livers shall be distributed to the patients in need according to the priorities system and based on their waiting period on the waiting list as well as their blood group. The liver transplant center shall be given one hour to reply regarding its readiness for the notified liver transplant.

Conditions of Liver Donation from Living Persons

1. The living donor must be physically healthy and psychologically stable.
2. The donor shall not be under 18 years or over 45 years of age.
3. The blood group of the donor and the recipient shall be compatible.
4. The hepatic functions must be normal, and the Hepatitis B core antibodies (HBcAb) as well as the Hepatitis C antibodies must be negative.
5. The donor shall not be addicted to drugs, medications that may be harmful to the liver or alcohol.

Corneal Transplant

Specifications for Establishing Corneal Transplant Centers

The coordination center for organ transplant has determined, through its competent committees, the specifications associated with the establishment of corneal transplant centers. These specifications include the following:

1. The technical team, consisting of:

1/1 Corneal transplant consultants:

A consultant in the field of corneal transplant shall be available at the center. The consultant shall have had at least one year of experience at an internationally accredited corneal transplant center, provided that he has conducted the surgeries himself during this period with a certificate confirming the same, or he has an experience of at least five years in corneal transplant at an internationally accredited hospital, provided that he submits a certificate of expertise issued by said hospital.

1/2 An anesthesiologist with previous experience in the field of anesthesia for eye surgery shall be available at the center.

1/3 A full-time microorganism specialist at the hospital with a microorganism division shall be available.

1/4 A technician who works at an eye bank with experience in the field of storing the cornea and evaluating the quality and viability of the cornea for transplant shall be available; a corneal transplant consultant may carry out these tasks.

1/5 A corneal transplant coordinator with adequate experience to qualify him to coordinate corneal transplant and storage until it is time for the transplant*.

1/6 Nursing body:

The persons working in this area, regardless of their gender, shall have adequate experience in giving care to patients during and

after corneal transplant surgeries.

* One qualified person may assume the tasks of both the coordinator and the eye bank technician at the same time.

2. Technical equipment:

2/1 Division of Ophthalmology:

It must be well equipped and shall especially contain the following:

- Specific microscopes (split lamp)
- Ophthalmoscope to examine the fundus
- Visual acuity chart
- Corneal topography
- Refractometer
- Tonometry
- The external clinics at the hospital shall contain all the equipment needed to examine eye patients who have undergone or will undergo corneal transplant such as special (forceps, blades, eyelid speculums...etc

2/2 The hospital where the corneal transplant center will be established shall contain fully-equipped operating rooms for such fragile operations such as (operating microscopes, the vitrectomy unit... etc).

Corneal Transplant Priorities Guide

The corneas shall be distributed according to the priorities guide determined by the corneal transplant committee at the coordination center for organ transplant, as follows*:

- First priority: Patient with corneal puncture or patient with disease or damage to the anterior part of the eye, requiring urgent rectification.
- Second priority: One-eyed patient (one seeing eye) suffering from

loss of vision in this eye as a result of a corneal injury.

- Third priority: The cornea shall be transplanted into patients not fulfilling any of the previous priorities according to the order of their names on the local waiting list.

First-priority patients shall have absolute priority upon the availability of any cornea for transplant. This cornea shall be transplanted into the patient classified under this priority in the area where the cornea has been extracted. If no patient classified under this priority is available, the cornea shall be transplanted into a patient of this same priority in any other area in the concerned State.

If no patient classified under the first priority is available in any Gulf State, the cornea shall be transplanted into any of the patients on the local waiting list according to priority. If no patient is available in the same area where the cornea has been extracted, it will be transferred to another State to be transplanted according to the priorities guide.

* See Annex 12 (Guide of tests that corneal transplant candidates must undergo).

* Priority between patients having the same priority level shall be given according to (Arabic text missing).

Standards of Viability of Deceased Donors' Organs for Transplant

First: Common general standards (*)

The organs of a deceased person will be considered as (unviable) for transplant if any of the following conditions exists:

1. If the organ is damaged as a result of the primary injury causing

the death or due to undergoing a state of shock for more than 30 minutes, except in cases of corneal transplant (see standards of corneal transplant).

2. If the deceased has confirmed or suspected cancer, excluding primary brain tumors that have been confirmed through analysis of the samples extracted therefrom and excluding skin cancer (basal cell carcinoma).
3. If the deceased is afflicted with a disease of unknown origin.
4. If the deceased is afflicted with an active and widespread bacterial or viral infection.
5. If the deceased is HIV positive.
6. If the deceased has Hepatitis B or C or is afflicted with Human T-lymphotropic virus (HLTV) (**).
7. If the deceased is afflicted with a neurological disease such as Rey's disease, slow virus diseases such as Creutzfeldt-Jakob Disease, progressive multifocal leukoencephalopathy (PML), rabies or Kawasaki diseases (KD).
8. If the deceased is addicted to drugs.

Second: Specific standards relevant to kidney transplant from deceased persons:

The coordination center for organ transplant shall be consulted in cases of Extended Criteria Donors (ECD):

1. In case the creatinine level in the deceased person remains higher than 2.5 mg/dl in spite of giving him the needed liquids; the coordination center for organ transplant must be consulted before taking any decision regarding the non-viability of the deceased person's organs for donation.

(*) Note: The hospital where the death case has occurred shall coordinate with the coordination center for organ transplant and

to which the intensive care unit belongs to find out whether or not the deceased person's organs are viable for transplant.

(**) Donation of a kidney from the deceased person may be approved if the latter has the Hepatitis B or C antibody, to be transplanted into patients with Hepatitis B immunity or afflicted with Hepatitis C or into patients carrying the same antibody provided that they are not afflicted with an active hepatitis. Decision shall be made (Arabic text missing).

2. In case of advanced chronic renal failure and/or acute and chronic arterial hypertension in the deceased person. Regarding patients with mild diabetes or with non-active Systemic Lupus Erythmatous (SLE), their organs may be viable for donation. The coordination center for organ transplant must be consulted in this regard in order to make the appropriate decision.

3. If the deceased is under 2 years or over 50 years of age or when the age is unknown, the decision shall be taken based on their physiological condition, clinical history and the creatinine level in the blood. In all cases, the coordination center for organ transplant must be consulted.

Third: Specific standards relevant to heart transplant:

The heart of the deceased will be considered as (viable) for transplant except in the following cases:

1. If any of the aforementioned common general standards is applicable.
2. If the deceased is over 40 years old in the case of male donors or 50 years old in the case of female donors; the coordination center for organ transplant must be consulted in all cases (*).
3. If the heart's condition is not normal according to the clinical test, the cardiac enzyme tests, the electrocardiography, the chest X-ray and the ultrasound.

4. If the deceased has an acute chest contusion causing damage to the heart.
 5. If the cold ischemic time (CIT) exceeds 5 hours.
- (*) The heart may be considered as viable for transplant in the contradicting cases provided that its function including the condition of the coronary arteries is examined and proven to be normal.

Fourth: Specific standards relevant to lung transplant:

The lungs of the deceased will be considered as (viable) for transplant except in the following cases:

1. If any of the aforementioned common standards is applicable.
2. If the deceased is over 50 years old in the case of male donors or 55 years old in the case of female donors; the coordination center for organ transplant must be consulted in all cases.
3. If the medical history of the deceased reveals that he has chronic respiratory failure or that he is addicted to smoking, if he has previously undergone a chest surgery, knowing that conducting surgery on one side will not prevent from benefiting from the other side, if he suffers from a bronchial disorder or if he suffers from repeated respiratory infection.
4. If the deceased has a chest contusion causing damage to the lungs, if he has inhaled toxic gases or if he has inhaled gastric secretions.
5. If the lungs' condition is not normal according to the clinical test, the blood gas test after placing the patient under oxygen tension (10%) for five minutes with positive pressure at the end of the respiratory circulation of an average of 5 cmH₂O, as well as the chest X-ray.
6. If the bronchotracheal mucus secretions of the deceased are purulent and the coloring and transplant analyses reveal that they

contain disease-inducing bacteria.

7. If the size of the deceased person's chest is not compatible with the chest of the patient who will undergo the lung transplant.

Fifth: Specific standards relevant to liver transplant (*):

The liver of the deceased will be considered as (viable) for transplant except in the following cases:

1. If any of the aforementioned common general standards is applicable.
2. If the deceased is over 50 years old.
3. If the liver functions of the deceased are not normal.
4. If the deceased is addicted to alcohol, drugs or both.

(*) The coordination center for organ transplant must be consulted in all cases.

Sixth: Specific standards relevant to corneal transplant:

The corneas of the deceased will be considered as (viable) for transplant except in the following cases:

1. If any of the aforementioned common standards is applicable.
2. If the eye has any internal disease such as malignant tumors, active conjunctivitis or any disease in the cornea or iris, or if the eye has previously undergone a surgical procedure, which may have a negative effect on the cornea.
3. If he has rubella.
4. If the period between the stoppage of the heart of the deceased and the extraction of the cornea exceeds 12 hours.

Procedures of Intensive Care for the Deceased

In order to provide intensive care to the deceased and acquire viable organs for transplant, the coordination center for organ transplant believes that the following procedures must be followed:

1. Keep the systolic arterial pressure above 100 mmHg in adults by giving the patient the necessary liquids as required, while keeping the central venous pressure around 12 cmH₂O, and by using vasoconstrictors as required. Dopamine, with or without other vasoconstrictors, is considered the best medicinal choice for optimum results.
2. Keep a urine output of 80 – 100 ml/hour with good balance between liquid intake and total urine output.
3. Keep the blood gases within the normal limits, where the partial pressure of oxygen shall be around 100 mmHg and the partial pressure of carbon dioxide shall be around 35 mmHg.
4. Keep the acid-base balance and the ions in the patient within the normal limits.
5. Since acute diabetes insipidus is common in deceased people, the adequate drugs, such as vasopressin, must be used when necessary, where the urine output shall be between 1.5 – 3 ml/kg/hour.
6. Pay full attention to prevent infection.
7. Keep the body temperature of the deceased within the normal limits by using warming or cooling means.
8. If the deceased has a slow heartbeat (less than 50 beats per minute), isoproterenol may be used as required.
9. Hormone treatment (insulin, thyroxine or cortisol) may be used as required under coordination with the organ transplant staff and the coordination center for organ transplant.

the coordination center for organ transplant.

10. Keep the eyes of the deceased closed and moisturized using the proper medical drops.

* See Annex 13 (Care of the Deceased Diagram)

* These procedures are carried out by the intensive care physician or the attending physician who shall decide on a treatment to achieve the objectives anticipated from the intensive care provided to the brain dead in collaboration with a kidney disease consultant and the organ transplant center.

ANNEXES

Annex 1

Resolution of the Council of the Islamic Fiqh Academy in Saudi Arabia

Resolution No. (5) d3/07/86 concerning resuscitation devices

The Council of the Islamic Fiqh Academy, held at the session of its 3rd conference in Amman, capital of the Hashemite Kingdom of Jordan, from 11 to 16 October 1986,

Upon discussing all the aspects raised on the subject of (resuscitation devices) and hearing the extensive explanation of the competent physicians,

Has resolved as follows:

A person shall be considered as deceased by law, and all the provisions of death approved by law shall be applied as a result thereof, if one of the following signs is detected:

1. If the heart and breathing cease completely and the physicians decide that this cessation is irreversible;
2. If his brain stops functioning completely and starts decomposing and the competent physicians decide that this condition is irreversible;

In which case the resuscitation devices attached to the patient may be removed, even if some of the organs, such as the heart, are still functioning mechanically by means of the attached devices.

Allah knows best..

Annex 2

Text of the Council of Senior Scholars'
Resolution No. 99 dated 6/11/1402 H

The Council has unanimously decided that an organ or part thereof may be transferred from a living Muslim or Dhimmi person to another, if necessary, and if it is decided that there is no danger in removing such organ or part thereof and that the transplant is likely to succeed. The Council has also decided, by virtue of the majority, as follows:

1. An organ or part thereof may be transferred from a deceased person to a Muslim, if necessary, and if it is decided that removing the organ from the donor will not cause trouble and that the transplant into the recipient will be likely to succeed.
2. A living person may donate an organ or part thereof to a Muslim who is in need of such organ.

Council of Senior Scholars

Annex 3

Death Documentation Form

Death Documentation Form by Brain Function

Name :
Age : Sex : Nationality :
Blood Group :
Hospital : Date of Admission:.....

First Exam	Consultant A	Consultant B
I. PRECONDITIONS 1. It is absolutely certain that irremediable brain damage has occurred due to:		
2. More than six hours have passed since the initial onset.		
3. Coma with no spontaneous respiration.		
II. EXCLUSIONS 1. Hypothermia (core temperature < 34°C)		
2. Sedation (blood test or hospital record should indicate absence of significant levels of sedative drugs or muscle relaxants).		
3. Untreated cardiovascular shock.		
4. Significant metabolic or endocrine causes of coma.		
III. CLINICAL ASSESSMENT 1. Lack of response to stimulation (Spinal reflexes excepted).		

First Exam	Consultant A	Consultant B
2. Absence of brain stem reflexes:		
a. Pupils to light		
b. Corneal		
c. Oculocephalic		
d. Oculovestibular (50 ml of ice-cold water at 0°C in adults, 20 ml in children)		
e. Gag		
f. Cough		

First Exam	Date	Time	Name	Signature
Consultant A				
Consultant B				

Confirmatory Test: One of the following tests should be done after the above mentioned criteria are fulfilled:			
EEG	Flat []	Date:	Signature
Absence of brain function evidenced by either: - cerebral angiogram [] - radionuclide angiography [] - Transcranial Doppler	No Flow []	Date:	Signature

Note: Recommended time interval between first and second examinations in various age groups			
* Adults	minimum of 6 hours	** Infants (above 60 days – 1 year)	24 hours
* Children (above one year)	12 hours	** Neonate (7 days – 60 days)	48 hours
* One EEG at end of first exam	** Two separated by the mentioned time interval		

Note: English text is taken from the Arabic file.

Annex 3

Second Exam

Death Documentation Form by Brain Function

Name :

Age : Sex : Nationality :

Blood Group :

Hospital : Date of Admission:

First Exam	Consultant A	Consultant B
I. PRECONDITIONS 1. It is absolutely certain that irremediable brain damage has occurred due to:		
2. More than six hours have passed since the initial onset.		
3. Coma with no spontaneous respiration.		
II. EXCLUSIONS 1. Hypothermia (core temperature < 34°C)		
2. Sedation (blood test or hospital record should indicate absence of significant levels of sedative drugs or muscle relaxants).		
3. Untreated cardiovascular shock.		
4. Significant metabolic or endocrine causes of coma.		
III. CLINICAL ASSESSMENT 1. Lack of response to stimulation (Spinal reflexes excepted).		
2. Absence of brain stem reflexes:		
a. Pupils to light		
b. Corneal		
Oculocephalic		
d. Oculovestibular (50 ml of ice-cold water at 0°C in adults, 20 ml in children)		
e. Gag		
f. Cough		

IV. APNEA TEST (Body temperature $\geq 36.5^{\circ}\text{C}$) Performed as per Saudi Protocol and is compatible with death by brain function criteria.	YES <input type="checkbox"/>
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First Exam	Date	Time	Name	Signature
Consultant A				
Consultant B				
Hospital Director or Deputy				

Seal of the Hospital

Note: English text is taken from the Arabic file.

Annex 4

Consent for Organ Donation

I, the undersigned, Mr./Mrs....., being mentally competent and not acting under coercion, father/mother/wife/husband/ brother/cousin/uncle, give the consent to donate the organs of the deceased, Mr./Mrs., in..... hospital, to any suitable patient(s) as deemed necessary.

I give the right to hospital..... to bury my abovementioned deceased relative.

I would like my abovementioned deceased relative to be transferred to:

Name of Consenter:

Identification Card No.

Issuing date: /..... /..... Place:

Relationship to the deceased:

Address:.....

Work Tel. #: Home Tel. #:

Mobile #:

Signature:

Witnesses:.....

Name:

ID Card #: Signature:

Name:

ID Card #: Signature:

Coordinator:

Assistant Coordinator:

Note: English text is taken from the Arabic file.

Annex 5

Guide to tests that non-diabetic patients with terminal kidney failure must undergo prior to kidney transplant (*)

1. Conduct a complete blood count with comprehensive biochemical tests as well as a sedimentation rate and glucose tests.
2. Analyze a mid-stream urine sample and an end-stream urine sample to detect any bacterial and parasitic infections.
3. Analyze a morning mid-stream urine sample to detect any tuberculosis bacteria.
4. Conduct Hepatitis B and C tests, hepatic function tests, Prothrombin Time tests and Partial Thromboplastin Time tests.
5. Conduct an electrocardiography, a chest X-ray and tuberculosis skin tests.
6. Conduct tests for the cytomegalovirus, HIV, malaria, Schistosomiasis, sickle cell anemia.
7. Conduct a kidneys, ureters and bladder X-ray (KUB) using tincture via retrograde method.
8. Conduct blood group, tissue and cytotoxic antibody analyses.

Annex 6

Guide to tests that diabetic patients with terminal kidney failure must undergo prior to kidney transplant (*)

1. Conduct all the tests stated under Annex 3.
2. Conduct an echocardiography.
3. Conduct a cardiac stress test.
4. Conduct a coronary angiogram.
5. Test the blood vessels in the neck and pelvis using ultrasonic C-scan photography (Doppler).

Annex 7

Controls and Conditions for Organ Donation from Living Non-Relatives in KSA

Donation of organs (kidney, part of a liver) from living persons is divided into two main parts:

1. Indirect donation (without compensation to an unspecified recipient): The identities of the donor and the recipient are known to the institutions overseeing the donation, including the transplant center and the Saudi Center for Organ Transplantation as well as the Ministry of Health that pay the compensation to the donor. However, the donor evaluation committee authorizing the process will only be aware of the identity of the donor with respect to this type of donation.
2. Direct donation (to a specified person): The identity of the donor is known to the recipient so is the identity of the recipient to the donor. Regarding this type of donation, the approval of donors shall be restricted to individuals of the same nationality.
3. Donor donating his kidney in return for financial compensation (placing his kidney for sale): This is not acceptable.

4. The person or patient offering to buy a kidney: This is also not acceptable.

Regulatory mechanism of kidney donation from living persons

1. The transplant shall only take place at a recognized government transplant hospital authorized by the Saudi Center for Organ Transplantation to operate as a kidney transplant center.

2. The donor shall report to the transplant center which will refer him to the transplant evaluation committee following the preliminary medical examination of the donor to verify his viability for donation.

3. Evaluation shall be carried out by means of the donor evaluation committee: the donor by grant or non-relative donor shall appear in person before the donor evaluation committee.

Formation of the committee

Committees shall be formed from the employees of government transplant hospitals at different regions of KSA.

Members of the committee

a- The director of the transplant hospital or his representative.

b- Two consultant physicians who are not competent in the field of kidney or liver transplant.

c- A social worker.

d- A religious expert.

e- A psychiatry consultant.

4. The psychiatry consultant shall conduct a psychiatric evaluation to identify the psychological state of the donor without compensation to an unspecified person and his awareness regarding the donation. The psychological evaluation shall be verified before the evaluation committee by virtue of the signature of the psychiatry consultant.

5. The donor shall be interviewed by the committee at least two times with a two -week interval.
6. The donor shall have the right to retract the donation at any moment prior to the transplant surgery and may not claim to recover the donated organ after removal.
7. Minutes of the donors' evaluation shall be kept at every meeting of the donor evaluation committee; the minutes shall be confidential.
8. In the case of donation to a specified person (direct donation), the evaluation committee shall ensure that the donor is of the same nationality as the recipient to avoid the temptation of money and exclude any suspicion of trading.
9. The decisions of approving or declining the donor's kidney donation shall be verified by virtue of a specific form to be signed by the members of the committee including the chairman of the committee with respect to that case.
10. The committee's approval shall be sent to the Saudi Center for Organ Transplantation.
11. The Saudi Center for Organ Transplantation shall coordinate with the heads of the transplant programs at the transplant centers in order to carry out the transplant following the evaluation of the donor and conduct accurate medical tests to verify that there are no medical contraindications to prevent the donation and that no harm may befall the donor after the donation process.
12. After the donor is approved by the transplant center and passes the medical and psychiatric evaluation, the transplant shall then be approved by the Saudi Center for Organ Transplantation to be notified to the transplant center. No donation from non-relatives may take place without the written approval of the Saudi Center for Organ Transplantation.
13. After completing the transfer of the donated organ, the transplant center shall submit a detailed medical report to the

Saudi Center for Organ Transplantation.

14. The Saudi Center for Organ Transplantation shall submit a report to the Minister of Health stating the completion of the transplant.

15. The Saudi Center for Organ Transplantation shall submit a request to the Minister of Health to claim the compensation specified in the Council of Ministers' resolution for payment to the donor.

16. The compensation shall be paid according to a form prepared by the Saudi Center for Organ Transplantation.

17. A request shall be submitted to His Majesty to award King Abdulaziz Medal – Third Class to the donor (only for Saudi nationals).

18. The Saudi Arabian Airlines will be requested to issue a fee reduction card (only for Saudi nationals).

Annex 8

Guide to tests that living kidney donors must undergo

1. Conduct routine blood tests.
2. Conduct complete kidney function tests.
3. Analyze urine and establish a microbial culture.
4. Regulate protein level and creatinine level in a 24-hour urine collection.
5. Detect the possibility of having schistosome eggs in the urine.
6. Conduct an intravenous pyelogram to visualize the renal pelvis.
7. Conduct renovascular imaging.
8. Conduct complete liver function tests.
9. Conduct Hepatitis B and C tests.
10. Conduct HIV tests.
11. Conduct the cytomegalovirus test.
12. Conduct syphilis tests.

13. Conduct malaria, brucella and schistosoma tests
14. Conduct the sickle cell anemia test.
15. Conduct stool analysis and detect schistosome eggs and other parasites.
16. Conduct a chest X-ray, an electrocardiography and a tuberculosis skin test.
17. Conduct an abdominal echography.
18. Conduct blood group and tissue analyses and verify compatibility between the cells of the donor and the recipient.

Annex 9

Guide to tests that patients with terminal heart failure must undergo prior to heart transplant

1. Conduct a complete blood count with comprehensive biochemical tests as well as a sedimentation rate and glucose tests.
2. Conduct complete kidney function tests.
3. Conduct complete liver function tests.
4. Conduct tests for blood coagulation factors.
5. Regulate complete protein and the albumin/globulin ratio and regulate the immunoglobulins in the blood.
6. Analyze and cultivate a midstream urine sample.
7. Cultivate nasal, pharyngeal, armpit and perineal swabs.
8. Conduct stool analysis to detect parasites.
9. Conduct tests to detect mycoplasma, Q fever, legionella, human metapneumovirus (hMPV), varicella zoster virus (VZV), parainfluenza virus, toxoplasmosis, cytomegalovirus, HIV and syphilis.
10. Conduct Hepatitis B and C tests.
11. Conduct a tuberculosis skin test and sputum culture.
12. Conduct blood group and tissue analyses and regulate

cytotoxic antibodies.

13. Conduct complete tests for lung functions and blood gases, a scintiscan and a chest X-ray.
14. Conduct an abdominal echography.
15. Conduct a complete electrocardiography, an echocardiography, a cardiac catheterization and a coronary angiogram and take pericardium samples.
16. Seek the opinion of a respiratory disorder consultant.
17. Seek the opinion of an epidemic disease consultant.

Annex 10

Guide to tests that patients with terminal respiratory failure must undergo prior to lung transplant

1. Conduct a complete blood count with comprehensive biochemical tests as well as a sedimentation rate and glucose tests.
2. Conduct complete kidney function tests.
3. Conduct complete liver function tests.
4. Conduct tests for blood coagulation factors.
5. Regulate complete protein and the albumin/globulin ratio and regulate the immunoglobulins in the blood.
6. Conduct blood group and tissue analyses and regulate cytotoxic antibodies.
7. Conduct Hepatitis B and C tests.
8. Conduct a complete 12-lead electrocardiogram, an echocardiography, a Doppler test to evaluate the pulmonary tension, a cardiac catheterization and a coronary angiogram for all patients over 40 years old or who have indications of injury to the coronary arteries.
9. Conduct a kidney and liver ultrasound.
10. Conduct tests to detect mycoplasma, Q fever, legionella,

human metapneumovirus (hMPV), varicella zoster virus (VZV), parainfluenza virus, toxoplasmosis, cytomegalovirus, HIV and syphilis.

11. Conduct a tuberculosis skin test and sputum culture (bronchial secretions) including cultures to detect *Aspergillus fumigatus**.
12. Analyze and cultivate a midstream urine sample.
13. Cultivate nasal and pharyngeal swabs.
14. Conduct complete tests for lung functions and blood gases, a chest X-ray (from the front, back and side), a scintiscan for the lung ventilation and a CT scan.
15. Conduct a stress test by asking the patient to walk for six minutes under the control of a pulse oximeter.
16. Conduct a general medical examination with a dentist, an ENT specialist and a gynecologist, in the case of women, and evaluate the psychological and nutritional condition of the patient.
17. Keep 10 cm³ of the patient's blood for when it is needed to test tissue compatibility between the cells of the donor and the recipient.

Annex 11

Guide to tests that patients with terminal liver failure must undergo prior to liver transplant

1. Conduct the tests stated in Annex 5 excluding Item 7.
2. Regulate the iron in the blood, the Total Iron Binding Capacity (TIBC), the ferritin, the complete protein and the albumin.
3. Conduct complete liver function tests.
4. Conduct complete tests to detect hepatitis.
5. Conduct complete lung function tests and blood gas tests.
6. Conduct tests to detect the Epstein – Barr virus, HIV, the Cytomegalovirus, syphilis, sickle cell anemia, malaria and Schistosomiasis

7. Detect tuberculosis bacteria in the urine and the sputum.
8. Detect parasites in the stool and cultivate it.
9. Conduct an upper gastrointestinal endoscopy, an abdominal CT scan for all patients without exception and a lower gastrointestinal test if the patient is over 45 years old.
10. Conduct an ear, nose and throat examination, an eye exam and a teeth inspection.
11. Conduct a genital examination in the case of married female patients and a cervical pap smear if the female patient is over 45 years old.
12. Examine and evaluate the psychological condition of the patient to see whether he will respond to the treatment and follow the medical instructions.
13. Take the all necessary and possible vaccinations in the case of children patients and detect varicella antibodies.

Annex 12

Guide to tests that corneal transplant candidates must undergo

1. Conduct a total eye exam with evaluation of visual acuity to verify that the visual acuity deficit results from a corneal disease.
2. Conduct a bacterial, viral, parasitic and fungal evaluation with regard to the corneal puncture especially if there is doubt of an infection.
3. Conduct all routine blood tests.
4. Conduct all biochemical blood tests.
5. Conduct a chest X-ray and an electrocardiogram.

Annex 13

Care of the Deceased Diagram