

CURRICULUM

for

Diploma, Managerial Course in Organ Transplantation

in

Collaboration with

University of Health Science, Lahore



TABLE OF CONTENTS

1. PROGRAM RATIONALE



2: PROGRAM MISSION, OUTCOMES AND OBJECTIVES

3: CURRICULUM DESIGN AND ORGANIZATION

4. ASSESSMENT

5. PROGRAM BLUEPRINT

PHOTIA


Kadi Kasi


1. PROGRAM RATIONALE

1.1: Need Assessment

- Punjab Human Organ Transplantation Authority (PHOTA) , Lahore was established under the provision of The Transplantation of Human Organs and Tissues Act 2010 to facilitates the safe & legal retrieval and transplantation of human cells, organs & tissues for therapeutic purposes.
- PHOTA register the hospitals to authorize them to perform transplantation through its Divisional Network
- Sixty hospitals of different specialties have been registered with PHOTA since its inception and approximately registration of 29 hospitals is in process.
- More than three thousand approval have been granted for transplantation of various organs in these registered hospitals
- Organ transplantation is a complex process involving Technical, legal, social and religious aspects and coordination among various stakeholders.
- There is dire need to have properly trained human resource to guide patients of end organ failure in their journey to organ transplantation
- There is a deficiency of Human Resource (HR) in this field and no course/diploma or academic program is available in Pakistan to train the people on this subject.
- The aim of this 12 month course is to equip participating graduates with relevant professional knowledge, skills and ethical values which enable them to apply only for administrative and management level not as a transplantation specialist, they acquired expertise as Human Organ Transplantation coordinators.

1.2: Rationale of the Program

Significant progress and development has been witnessed in the field of organ transplantation in the last few decades rendering it as main treatment for patients suffering from end-stage organ failure. Available data and research suggest that patients have substantial improvement in quality of life following the transplantation making it treatment modality of choice. Misconceptions, prevailing myths and incomplete understanding of process of organ donation and transplantation have remarkable impact on decision of a person to opt for this treatment modality.

This program will help the healthcare professional to provide safe and legal transplant services to their patient and abolishing the exploitation of poor community by privileged segment of society for their benefits

Handwritten signatures and initials in the bottom right corner of the page. There are two distinct signatures, one appearing to be 'Nadi' and another with 'AS' below it.

2: PROGRAM MISSION, OUTCOMES AND OBJECTIVES

2.1: Mission Statement

To develop trained human resource to facilitates the safe & legal retrieval and transplantation of human cells, organs & tissues for therapeutic purposes, ultimately abolishing malpractice and patients exploitation

2.2: General Program Objectives

The aim of this course is to equip participants with relevant professional knowledge, skills and ethical values needed to organize, coordinate and manage the human organ transplantations services in healthcare facilities in a skilled way.

2.3: Program Outcomes

At the end of training in MCOT, a trainee should be able to:

- 2.3.1 Select and match the suitable donor & recipient by proper interpretation of relevant pathological /immunological investigations
- 2.3.2 Explain the transplantation Law/Act/Rules/Guidelines/SOPs to recipient, donors and their relatives
- 2.3.3 Administer the written informed consent to organ recipients, donors, healthcare providers and administrators of transplant centers
- 2.3.4 Prepare a case file of human organ donation & transplantation for submission to relevant regulatory authority
- 2.3.5 Develop and maintain an institutional patient registry of end organ failure in coordination with relevant regulatory authority.
- 2.3.6 Coordinate the process of human organ procurement (cadaveric organ retrieval, preservation, transportation, allocation and transplantation)
- 2.3.7 Identify the potential cadaveric donors by applying brain death criteria
- 2.3.8 Approach the family of deceased to counsel, motivate and request consent for organ donation while addressing the social, cultural, religious facets

- 2.3.9 Develop and implement a quality control system for institutional transplant services
- 2.3.10 Develop a system for prevention, identification and management of untoward incidents and sentinel events
- 2.3.11 Liaise with relevant provincial and central regulatory authorities to maintain valid registration


Kadi Kar

2.4: Alignment of Program Aims with the Program Outcomes

Program Aims	Program Outcomes	
Organization, coordination and management of living organ donation and transplantations	2.3.1	Select and match the suitable donor & recipient by proper interpretation of relevant pathological /immunological investigations
	2.3.2	Explain the transplantation Law/Act/Rules/Guidelines/SOPs to recipient, donors and their relatives
	2.3.3	Prepare a case file of human organ donation & transplantation for submission to relevant regulatory authority
	2.3.4	Administer the written informed consent to organ recipients, donors, healthcare providers and administrators of transplant centers
Organization, coordination and management of cadaveric organ donation and transplantations	2.3.5	Develop and maintain an institutional patient registry of end organ failure in coordination with relevant regulatory authority.
	2.3.6	Coordinate the process of human organ procurement (cadaveric organ retrieval, preservation, transportation, allocation and transplantation)
	2.3.7	Identify the potential cadaveric donors by applying brain death criteria
	2.3.8	Approach the family of deceased to counsel, motivate and request consent for organ donation while addressing the social, cultural, religious facets
Development of a quality control system for institutional transplant services	2.3.9	Develop and implement a quality control system for institutional transplant services
	2.3.10	Develop a system for prevention, identification and management of untoward incidents and sentinel events
	2.3.11	Liaise with relevant provincial and central regulatory authorities to maintain valid registration

[Handwritten Signature]
[Handwritten Name: Nadia Hassan]

3: CURRICULUM DESIGN AND ORGANIZATION

3.1: Title of Degree program

Dip MCOT (Diploma Managerial Course in Organ Transplantation)

3.2: Details of Contact hours/credit hours

Total= 216 Hours

Lectures (face to face) = 40 Hours

Group discussion = 40 Hours

Assignments = 40 Hours

Hospital visits = 30 (3 Hour each)

Court Visit = 02 (03 Hours each)

S#	Modules Title	Interactive Lecture	Group Discussions	Assignments Self-Study	Hospital Visits 4hr/visit
1,	Organ preservation (4 weeks)	1 hour per week for 04 weeks Total = 4 hours	1 hour per week for 04 weeks Total = 4 hours	1 Assignment/Week	4
2,	Donor/recipient selection and matching (8 weeks)	1 hour per week for 08 weeks Total = 8 hours	1 hour per week for 8 weeks Total = 8 hours	1 Assignment/Week	None
3,	Organ donation & transplantation (6 weeks)	1 hour per week for 06 weeks Total = 6 hours	1 hour per week for 6 weeks Total = 6 hours	1 Assignment/Week	6
4,	Organ procurement (4 weeks)	1 hour per week for 04 weeks Total = 4 hours	1 hour per week for 04 weeks Total = 4 hours	1 Assignment/Week	4
5,	Communication skills & medical ethics (6 weeks)	1 hour per week for 06 weeks Total = 6 hours	1 hour per week for 06 weeks Total = 6 hours	1 Assignment/Week	4 Group sessions for interview

Ag
Nadia Khan

6,	Transplantation law & legislations (4 weeks)	1 hour per week for 04 weeks Total = 4 hours	1 hour per week for 04 week Total = 4 hours	1 Assignment/Week	2 relevant court visits
7,	Healthcare quality management (4 weeks)	1 hour per week for 04 weeks Total = 4 hours	1 hour per week for 04 weeks Total = 4 hours	1 Assignment/Week	4
8,	Hospital management (4 weeks)	1 hour per week for 04 weeks Total = 4 hours	1 hour per week for 04 weeks Total = 4 hours	1 Assignment/Week	4

3.3. Program Structure (Degree Plan):

3.3.1: Entry Requirement

- Sixteen Years of education in health and health related fields from HEC recognized institution
- Valid permanent registration with relevant regulatory authority (If applicable)
- Mininum2 years post qualification work experience in healthcare facilities

3.3.2: Training Portfolio (Course Objectives)

- 3.3.2.1 Select and match the suitable donor & recipient by proper interpretation of relevant pathological /immunological investigations (Donor form I,II,III, & Recipient form I, II,III)
- 3.3.2.2 Interpret the transplantation Law/Act/Rules/Guidelines for recipient, donors and their relatives (PHOTA ACT 2012)
- 3.3.2.3 Administer the written informed consent to organ recipients, donors, healthcare providers and administrators of transplant centers (Consent Forms)
- 3.3.2.4 Prepare a case file of human organ donation & transplantation for submission to relevant regulatory authority. (Complete case file available online)
- 3.3.2.5 Develop and maintain an institutional patient registry of end organ failure in coordination with relevant regulatory authority. (Registry performa)


Nadim Khan

- 3.3.2.6 Coordinate the process of human organ procurement (cadaveric organ retrieval, preservation, transportation, allocation and transplantation). (PHOTA GUIDELINES 2021)
- 3.3.2.7 Identify the potential cadaveric donors by applying brain death criteria (PHOTA BRAIN DEATH CRITERIA)
- 3.3.2.8 Approach the family of deceased to counsel, motivate and request consent for organ donation while addressing the social, cultural, religious facets. (PHOTA FORMS 2021)
- 3.3.2.9 Develop and implement a quality control system for institutional transplant services (PHOTA SOPS)
- 3.3.2.10 Develop a system for prevention, identification and management of untoward incidents and sentinel events (PHOTA SOPS)
- 3.3.2.11 Liaise with relevant provincial and central regulatory authorities to maintain valid registration (PHOTA SOPS)
- Note: All the documents are available on line (<https://phota.punjab.gov.pk/>) and can be provided on request.

3.3.3: List of Courses/Modules


Sr.No	Name of Module	Module Learning Outcome
1.	Organ Preservation	Able to preserve the retrieved organ for cadaveric transplantation
2.	Donor /Recipient Selection and Matching	Select and match the suitable donor & recipient by proper interpretation of relevant pathological /immunological investigations
3.	Organ Donation and Transplantation	Prepare a case file of human organ donation & transplantation for submission to relevant regulatory authority
		Motivate an individual for organ donation while addressing social, cultural and religious issues
4.		Develop and maintain an institutional patient registry of end organ failure in coordination with relevant regulatory authority
		Identify the potential cadaveric donors by applying brain death criteria

[Handwritten signatures]

	Organ Procurement	Monitor and maintain the brain dead patients for favorable transplantation outcomes.
		Coordinate the process of human organ procurement (cadaveric organ retrieval, preservation, transportation, allocation and transplantation)
5.	Communication Skills & Medical Ethics	Administer the written informed consent to organ recipients, donors, healthcare providers and administrators of transplant centers
		Approach the family of deceased to counsel, motivate and request consent for organ donation while addressing the social, cultural, religious facets
6.	Transplantation Law & Legislations	Interpret the transplantation Law/Act/Rules/Guidelines for recipient, donors and their relatives
		Liaise with relevant provincial and central regulatory authorities to maintain valid registration
7.	Quality Management (PHOTA SOPs)	Develop and implement a quality control system for institutional transplant service
		Develop a system for prevention, identification and management of untoward incidents and sentinel events
8.	Hospital Management (Organ Transplant Unit Management)	Develop ,implement and maintain Hospital waste management system as per prevailing law
		Develop ,implement and maintain Hospital complaint management system to address patients grievances
		Develop ,implement and maintain proper Medical record documentation to ensure patient safety


Kader Khan

Module/Course Title	Course/Module Objectives		
	Knowledge	Technical Skills	Soft Skills
Organ Preservation	<p>Understand the anatomic and physiological organization of human body</p> <p>Understand Physiological processes in organs after retrieval from the donor</p>	<p>Tagging and preservation of retrieved organ</p>	<p>Team communication and coordination</p>
Donor/Recipient Selection and Matching	<p>Understand and interpret the various laboratory investigation</p>	<p>Selection and matching the suitable donor & recipient</p>	<p>Communication and coordination with donor /recipient and healthcare provider</p>
Organ Donation & Transplantation	<p>Introduction to organ transplantation including history</p> <p>Best international practices in human organ transplantation</p> <p>Organ donor registration methods ,models and practices</p> <p>Global strategies to improve organ donor registration</p> <p>Social ,cultural and religious perspective of organ donation</p>	<p>Preparation a case file for submission to relevant regulatory authority</p> <p>Development of organ donor registry</p>	<p>Motivation of individual for organ donation</p>
Organ Procurement	<p>Understand Concept of Cadaveric organ donation and Brain Death</p> <p>Monitoring of pathophysiological changes in brain dead patients</p> <p>Organ retrieval, organization, preservation and allocation criteria</p>	<p>Develop and maintain an institutional patient registry of end organ failure in coordination with relevant regulatory authority</p> <p>Identify the potential cadaveric donors by applying brain death criteria.</p>	<p>Family approach for Organ Donation</p>

Ag
 Nadeem Hasan

	Organ allocation systems and criteria		
Communication Skills & Medical Ethics	<p>Communication methods and models</p> <p>Communication barriers</p> <p>Strategies to handle difficult conversation</p> <p>Strategies to communicate effectively with individuals from diverse social, cultural and religious backgrounds</p> <p>Strategies to support a family in crisis and grief</p> <p>Medical Ethics and Professionalism</p>	Administration of the written informed consent to organ recipients, donors, healthcare providers and administrators of transplant centers	<p>Breaking bad news</p> <p>Family approach for Organ Donation</p>
Transplantation Law & Legislations	<p>Rationale and need of transplantation regulation/law</p> <p>History and evolution of transplantation law in Pakistan</p> <p>Transplantation of Human Organs & Tissues Act 2010 (Amended Act 2012)</p> <p>Punjab Human Organ Transplantation</p>	<p>Establishment of relationship using legal document</p> <p>Interpret the transplantation Law/Act/Rules/Guidelines for recipient, donors and their relatives</p>	Liaise with relevant provincial and central regulatory authorities
	Authority(PHOTA), Lahore		
Healthcare Quality Management	<p>Basics of Healthcare Quality</p> <p>Healthcare Quality Management activities</p> <p>Measurement/Evaluation of Healthcare Quality Using Input-Output Model</p> <p>Quality Improvement Model</p>	<p>Develop and implement a quality control system for institutional transplant service</p> <p>Develop a system for prevention, identification and management of untoward incidents and</p>	Team Management



Handwritten signature and name: Nadia Nasir

	(PDSA/RCI/FADE/Lean etc.) Quality improvement tools and teams	sentinel events	
Hospital Management	Salient features of Hospital Management Hospitals and its classification Hospital waste management Hospital Pharmacy Service Management Hospital Complaint Management Incident and sentinel event monitoring Medical record documentation Healthcare Risk management	Develop ,implement and maintain Hospital waste management system as per prevailing law Develop ,implement and maintain Hospital complaint management system to address patients grievances Develop ,implement and maintain proper Medical record documentation to ensure patient safety	Team Development and coordination



 Kashi Kasa

MODULE-I	
Organ Preservation	
Module Title	
Contact Hours	
Contents	<ol style="list-style-type: none"> 1. Anatomic organization of human body 2. General and gross anatomy of transplantable organs (Kidney, Liver, Cornea, Bones / Bone Graft. Lungs, Pancreas, Skin, Intestines, Heart etc.) 3. Physiological functions of transplantable organs 4. Physiological processes in organs after retrieval from the donor 5. Preservation of retrieved organ 6. Concept of warm ischemia, defines perfusion techniques, assess the viability of organs
Learning Outcome	Able to preserve the retrieved organ for cadaveric transplantation



 Nadeem Khan

MODULE-II	
Module Title	Donor/Recipient Selection and Matching
Contact Hours	
Contents	<p>Types of graft (Autograft, Allograft, Isugraft , Xenograft ,Orthotropic Graft ,Heterotopic Graft)</p> <ol style="list-style-type: none"> 1. Graft versus host reaction 2. Cells of Immune system 3. Over view of MHC 4. Hypersensitivity reactions and Its Types (I) (II) (III) (IV) 5. Transplant Antigens 6. Graft Rejections and its classification 7. Overview of immune system 8. Complement system and pathway 9. Auto immunity 10. Mixed Lymphocyte reaction 11. Transplant reaction and its types 12. Graft versus host disease 13. Anti HLA antibodies in Transplantation 14. Non-HLA antigen in organ transplantation 15. HLA Typing and types 16. HLA Mismatch and life of transplant 17. Organ specific feature in clinical transplantation 18. Panel Reactive antibodies, its level and significance, Pre and post transplantation 19. Immunoflourscen and luminax assay for antibody detection 20. Tolerance induction strategies
Learning Outcome	Select and match the suitable donor & recipient by proper interpretation of relevant pathological /immunological investigations





MODULE-III	
Module Title	Organ Donation and Transplantation
Contact Hours	4
Contents	<ol style="list-style-type: none"> 1. Introduction to organ transplantation including history & types 2. Best international practices in human organ transplantation. 3. Selection of suitable donor and recipient and their matching (Kidney, Liver, Cornea, Lungs, Pancreas etc) 4. Healthcare facility requirements for safe living and cadaveric organ donations and transplantation (including human resource ,infrastructure and SOPs) 5. Life of transplanted organs/immunosuppression/risks 6. Organ rejection /types. 7. Pre-Operative, Intra-Operative and Post-Operative care of recipient/ donor. 8. Viral infections (HIV ,HBV ,HCV etc.) and transplantation 9. Bacterial infection /TB and transplantation 10. Classes and mechanism of action of different immune suppressive drugs 11. Organ donor registration methods ,models and practices 12. Global strategies to improve organ donor registration 13. Organ Donation –Social ,cultural and religious perspective
Learning outcome	<p>Prepare a case file of human organ donation & transplantation for submission to relevant regulatory authority</p> <p>Motivate a individual for organ donation while addressing social, cultural and religious issues</p>




Nadi Ka


MODULE-IV	
Module Title	Organ Procurement
Contact Hours	3
Contents	<ol style="list-style-type: none"> 1. Concept of Cadaveric organ donation 2. Concept of Brain Death (Definition, Causes, Diagnosis, Confirmatory tests, clinical documentation etc.) 3. Brain death versus coma 4. International Brain death criteria (Adult & Paeds) 5. PHOTA Brain death criteria 6. WHO Guidelines 7. Circulatory death and donation after circulatory death 8. Donor Management and Organ Viability 9. Monitoring of pathophysiological changes in brain dead patients linked with graft survival and transplantation outcomes. 10. Family approach for Organ Donation 11. Organ retrieval, organization, preservation and allocation criteria 12. Organ allocation systems and criteria 13. Ethical issues
Learning Outcome	<ol style="list-style-type: none"> 1. Develop and maintain an institutional patient registry of end organ failure in coordination with relevant regulatory authority 2. Identify the potential cadaveric donors by applying brain death criteria 3. Monitoring and maintenance of pathophysiological changes in brain dead patients for favorable transplantation outcomes. 4. Coordinate the process of human organ procurement (cadaveric organ retrieval, preservation, transportation, allocation and transplantation)



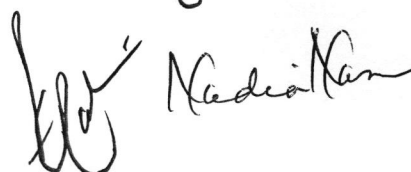
Ag

Nadia Khan

MODULE-V	
Module Title	Communication Skills & Medical Ethics
Contact Hours	3
Contents	<ol style="list-style-type: none"> 1. Bio-Psycho-Social (BPS) Model of Health Care 2. Communication methods and models 3. Communication barriers 4. Delivery of culturally relevant and cultural sensitivity care 5. Skills, tools and strategies to handle difficult conversations 6. Skills, tools and strategies to communicate effectively with individuals from diverse social, cultural and religious backgrounds 7. Skills ,tool and strategies to support a family in crisis and grief 8. Breaking Bad News 9. Medical Ethics and Professionalism 10. Doctor-Patient Relationship 11. Informed Consent and Confidentiality 12. Ethical Dilemmas in a Doctor's Life
Learning Outcome	<ol style="list-style-type: none"> 1. Administer the written informed consent to organ recipients, donors, healthcare providers and administrators of transplant centers 2. Approach the family of deceased to counsel, motivate and request consent for organ donation while addressing the social, cultural, religious facets

AG

 Kadiyan


MODULE-VI	
Transplantation Law & Legislations	
Module Title	
Contact Hours	
Contents	<ol style="list-style-type: none"> 1. Rationale and need of transplantation regulation/law 2. History and evolution of transplantation law in Pakistan 3. Transplantation of Human Organs & Tissues Act 2010 (Amended Act 2012) 4. Punjab Human Organ Transplantation Authority (PHOTA), Lahore 5. Functions of PHOTA 6. Functions and limitation of Evaluation Committee 7. Legal scenarios regarding organ donation and transplantation 8. Comparative Legislations of Different Countries. 9. Islamic Concepts of Transplantation in Lieu of FATAWAS 10. WHO Guidelines regarding organ donation and transplantation 11. Informed consent/Foul play /Duress /Illegal transplantation 12. Establishment of relationship using legal document (CNIC/FRC/Birth Certificate/Marriage Certificate/Death Certificate /Foreign national donor and recipient 13. New Proposed Draft Of The Transplantation Of Human Organs And Tissues Act 2018 & 2019
Learning Outcome	<ol style="list-style-type: none"> 1. Interpret the transplantation Law/Act/Rules/Guidelines for recipient, donors and their relatives 2. Liaise with relevant provincial and central regulatory authorities to maintain valid registration


AG

 Nadia Khan

MODULE-VII	
Module Title	Healthcare Quality Management
Contact Hours	3
Contents	<ol style="list-style-type: none"> 1. Basics of Healthcare Quality 2. Stakeholders of Healthcare Quality 3. Dimensions/Elements in Healthcare Quality 4. Healthcare Quality Management activities (Measurement, Assessment and Improvement) 5. Measurement/Evaluation of Healthcare Quality Using Input-Output Model 6. Quality Improvement Model (PDSA/RCI/FADE/Lean etc.) 7. Quality improvement tool 8. Quality improvement team
Learning Outcome	<ol style="list-style-type: none"> 1. Develop and implement a quality control system for institutional transplant service 2. Develop a system for prevention, identification and management of untoward incidents and sentinel events

MODULE-VIII	
Module Title	Hospital Management
Contact Hours	3
Contents	<ol style="list-style-type: none"> 1. Salient features of Hospital Management 2. Hospitals and its classification 3. Hospital waste management 4. Hospital Pharmacy Services Management 5. Hospital Complaint Management 6. Incident and sentinel event monitoring 7. Medical record documentation 8. Healthcare Risk management 9. Credentialing and Privileging of healthcare provider 10. Patient Safety
Learning Outcome	<ol style="list-style-type: none"> 1. Develop ,implement and maintain Hospital waste management system as per prevailing law 2. Develop ,implement and maintain Hospital complaint management system to address patients grievances 3. Develop ,implement and maintain proper Medical record documentation to ensure patient safety

Note: Faculty should be hired in accordance with Higher Education Commission/Pakistan Medical Commission approved criteria.





4. ASSESSMENT

4.1. Formative Assessment

Every module will have element of formative assessment as per below policy

1. Class Attendance
(Every student maintaining the class attendance of more than 75% will be given 1 mark and no mark will be given if attendance is less than 75%)
2. Presentation
(Students will make power point presentation on assigned topics carrying total marks of 2)
3. Class participation
(Teacher will award 1 to 2 marks for each student depending upon his participation)
4. Class test at the end of each module (25 MCQ only)
(Class test will be of 5 marks)

4.2. Summative Assessment (University Examinations)




	Final Assessment			Internal Assessment	Total
	SAQ	MCQ	OSPE		
Number of item	8	40	8	30	150
Marks for each item	05	01	05		
Total Marks	40	40	40		
Time Allocation	01 hours	40 Minutes	40 Minutes		




Kadri Kar

5. PROGRAM BLUEPRINT

	Modules Title	Contact Hours	Teaching Methodology	Assessment Methodology
1.	Organ Preservation		<ul style="list-style-type: none"> • Interactive lectures • Group discussions • Assignments • Field Visits 	<ul style="list-style-type: none"> • Written Examination (MCQ) • OSPE • Presentation
2.	Donor/Recipient Selection and Matching			
3.	Organ Donation & Transplantation			
4.	Organ Procurement			
5.	Communication Skills & Medical Ethics			
6.	Transplantation Law & Legislations			
7.	Healthcare Quality Management			
8.	Hospital Management			

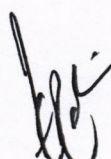





RECOMMENDED/REFERENCE BOOKS

FOR

MANAGERIAL COURSE IN ORGAN TRANSPLANTATION

1. Robbins Basic Pathology by Kumar, Abbas & Ester
2. Rapid Review Pathology by Edward F. Golgen.
3. Guyton and Hall Text Book of Medical Physiology by John. E Hall and Michael E. Hall
4. Basic Immunology by Abul K. Abbas, Andrew H. Lichtman and Shiv Pillai
5. SNELL" s Clinical anatomy by regions
6. Principles of Biomedical Ethics by Tom L. Beauchamp & James F. Childress
7. Kidney Transplantation Principles and Practices by Peter J. Morris & Stuart J. Knechtle
8. Handbook of Behavioral Sciences by Mowadat H. Rana, Roop Z. Rana, Mansoor Mustafa
9. Introduction to Healthcare Quality Management by Patrice Spath
10. Healthcare Quality Handbook - A Professional Resource and Study Guide by Janet A. Brown
11. Q-Solutions -Essential Resources for Healthcare Quality Professionals by Luc R. Pelletier & Christy L. Beaudin
12. The Transplantation of Human Organs and Tissues Act, 2010 (Amended 2012).
13. PHOTA Rules/Regulations 2012
14. PHOTA Procedure Manual 2018.
15. Punjab Healthcare Commission Act 2010
16. Medical Journals. (NEJM)



Kadish Kan