Summer Training at
Max Super specialty Hospital, Saket, New Delhi
(April 1–May 31, 2014)

- **A Study on Process Mapping and Improving Efficiency of Domestic Patients for Renal Transplant Procedures**
- **To Study the Level of Infection Prevention and Control in the Transplant Unit**
- **A Proposal for Getting Swap and Cadaveric List of Transplant Cases IT Enabled and Configured into HIS**

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2013-2015

The IIHMR University, Jaipur
2014

CONTENTS:

ACKNOWLEDGEMENT

A summer project is a golden opportunity for learning and self development.

I consider myself very lucky and honoured to have so many wonderful people lead me through the completion of this project.

I consider myself fortunate for having been provided an opportunity to undergo summer training at Max Super Speciality Hospital, Saket, New Delhi and wish to express my indebted gratitude to Mr. Anil Vinayak (Director Sales & Marketing & GM Operations, Saket).

I also wish to extend a special thanks to Dr. Sahar Qureshi (Assistant General Manager, Operations, Saket) who in spite of being extraordinarily busy with her duties, took time out to hear, guide and keep me on the correct path and allowing me to carry out my project work at their esteemed organization during the training.

I take this opportunity to express my profound gratitude and deep regards to my Mentor, Dr. Gaurav Sharma, Program Manager, Renal Sciences & Assistant Medical Superintendent for his guidance, monitoring and constant encouragement throughout the course of this project.

I am obliged to staff members of Institute of Renal Sciences, MSSH, Saket for the valuable information provided by them in their respective fields. I am grateful for their cooperation during the period of my assignment.

Lastly, I thank almighty, my family and friends for their constant encouragement without which this assignment would not be possible.

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APPENDICES

- All forms for transplantation under THOA
- Affidavit formats
- Test list for donor and recipient
- NOC for patients belonging to different states.

TITLE:

A study on process mapping and improving efficiency of domestic patients for renal transplant procedures in Max Super Specialty Hospital,Saket, New Delhi.

EXECUTIVE SUMMARY:

Max Health care is an integral part of Max India Limited.Max healthcare was launched in 2001 with a mission of creating international standards of medical and service excellence through delivery world clad healthcare with a service focus, by creating an institution committed to the highest standard of medical and service excellence, patient care, scientific knowledge and medical education.

I have done my project in Max Super specialty Hospital,Saket,NewDelhi, on the process mapping of domestic patients for renal transplant procedures to evaluate the average turn aroundtime.This study is a snap shot view of whole situation of domestic patients for renal transplantation, in the Department of Renal Sciences, in Max Super Specialty Hospital. It is a small scale descriptive study with a sample size of 20 patients, done by using technique of direct observation of operations, in order to obtain data on processes, on how and why a program works, and on unintended and unanticipated program outcomes(delay).

INTRODUCTION

Max healthcare:

'Patient Centered Care' is the core of everything that Max Healthcare does. Widely acknowledged nationally and internationally for its quality patient care, Max has successfully implemented the "**Medical Excellence Model"** through its clinical team of expert physicians and nurses who work together in an integrated manner, assessing patient needs, ordering tests, planning treatments, scheduling surgeries, monitoring progress and planning or early discharge to home.

Passion: to build trust.

Vision: to deliver world class healthcare with a service focus, by creating an institution committed to the highest standards of medical & service excellence, patient care, scientific knowledge and medical education.

Mission:

- To create exceptional standards of medical&service excellence.
- Care provider of first choice.
- Principal choice for physician
- Ethical practices
- Create international centre of Excellence for selected Super Specialities
- Safety – Patient, customer, staff.

Renal transplantation is a surgical procedure to remove a healthy functioning kidney from a living or brain-dead donor and implant it into a patient with nonfunctioning kidneys. With the tremendous improvements in transplant management most patients with kidney failure can be considered for transplantation.Renal transplantation is being done in Max Super Specialty Hospital,Saket,NewDelhi with an average of 15 transplants per month.

PROCESS FLOW:

PATIENT REPORTS FOR TRANSPLANT TO DEPT OF RENAL SCIENCES RUN BY NEPHROLOGIST/UROLOGIST.

⇩

CLINICAL EXAMINATION & ASSESSMENT

⇩

INVESTIGATION TO ASCERTAIN THE DIAGNOSIS AND NEED FOR TRANSPLANTATION

⇩

IDENTIFICATION OF DONOR & BASIC WORK UP FOR APPROVAL OF DONOR

⇩

AFTER ESTABLISHING RELATIONSHIP FURTHER WORKUP TO SEE IF DONOR IS FIT & APPROPRIATE FOR RENAL TRANSPLANT

⇩ ⇩

LEGAL FORMALITIESMEDICAL INVESTIGATIONS OF DONOR AND PATIENT.
OF DONOR AND PATIENT.

⇩

ALL LEGAL PAPER OF CONSENT &RELATIONSHIP MADE & SENT TO PROGRAM MANAGER FOR APPROVAL AND FOR FIXING COMMITTEE MEETING AFTER THE CLEARANCE OF ALL MEDICAL INVESTIGATIONS

⇩

COMMITTEE MEETING

BACKGROUND:

Kidney transplantation or **renal transplantation** is the organ transplant of a kidney into a patient with end-stage renal disease. Kidney transplantation is typically classified as deceased-donor (formerly known as cadaveric) or living-donor transplantation depending on the source of the donor organ. Living-donor renal transplants are further characterized as genetically related (living-related) or non-related (living-unrelated) transplants, depending on whether a biological relationship exists between the donor and recipient. Exchanges and chains are a novel approach to expand the living donor pool.

The indication for kidney transplantation is end-stage renal disease (ESRD), regardless of the primary cause. This is defined as a glomerular filtration rate <15ml/min/1.73 sq.m. The majority of renal transplant recipients are on dialysis (peritoneal dialysis or hemofiltration) at the time of transplantation. However, individuals with chronic renal failure who have a living donor available may undergo pre-emptive transplantation before dialysis is needed.

Since medication to prevent rejection is so effective, donors do not need to be similar to their recipient. Potential donors are carefully evaluated on medical and psychological grounds. This ensures that the donor is fit for surgery and has no disease which brings undue risk or likelihood of a poor outcome for either the donor or recipient. In general, the donor and recipient should be ABO blood group and cross match compatible. If a potential living donor is incompatible with their recipient, the transplant can be done preceded by plasmapheresis, or the donor could be exchange for a compatible kidney (also k/as swapping). The psychological assessment is to ensure the donor gives informed consent and is not coerced. It is also ensured that a donation has not resulted from a financial transaction.

RESEARCH QUESTION:

- To find out the turnaround time of domestic patients for renal transplant including both medical and legal procedures (before the patient is admitted for surgery) in Max Super Specialty Hospital?
- To know the areas and reasons for delay?
- How can these be improved and reduce patient inconvenience?

OBJECTIVES:

- Process Mapping of domestic renal transplant patients.
- Identification of bottlenecks and areas of delays in the process
- Identification of reasons of delay.
- To suggest on area of improvement.
- To minimize the inconvenience caused to the patients due to this delay.

RATIONALE FOR STUDY:

The aim of this study is to evaluate the average turnaround time (from the time patient walks in till the surgery date) of domestic patients for renal transplant, including both legal and medical procedural aspects.

- Higher TAT is a crucial issue as it has adverse impact on patient satisfaction in a hospital.
- Knowing the causes which lead to increased TAT in Department of Renal Sciences of domestic patients for renal transplant, can help improve efficiency
- Thereby augmenting patient's experience in Max Super Speciality Hospital.

REVIEW OF LITERATURE:

Renal transplantation:

NORMAL KIDNEY FUNCTION

The kidneys are organs whose function is essential to maintain life. Most people are born with two kidneys, located on either side of the spine, behind the abdominal organs and below the rib cage. The kidneys perform several major functions to keep the body healthy.

- Filtration of the blood to remove waste products from normal body functions, passing the waste from the body as urine, and returning water and chemicals back to the body as necessary.
- Regulation of the blood pressure by releasing several hormones.
- Stimulation of production of red blood cells by releasing the hormone erythropoietin.

The normal anatomy of the kidneys involves two kidney bean shaped organs that produce urine. Urine is then carried to the bladder by way of the ureters. The bladder serves as a storehouse for the urine. When the body senses that the bladder is full, the urine is excreted from the bladder through the urethra.

KIDNEY DISEASE

Chronic kidney disease is a major health concern. When the kidneys stop working, renal failure occurs. If this renal failure continues (chronically), end-stage renal disease results, with accumulation of toxic waste products in the body. In this case, either dialysis or transplantation is required and require either dialysis or transplantation to sustain their life

Common Causes of End-Stage Renal Disease

- Diabetes mellitus
- High blood pressure
- Glomerulonephritis
- Polycystic Kidney Disease
- Severe anatomical problems of the urinary tract

Treatments for End-stage Renal Disease

The treatments for end-stage renal disease are hemodialysis, a mechanical process of cleaning the blood of waste products; peritoneal dialysis, in which waste products are removed by passing chemical solutions through the abdominal cavity; and kidney transplantation.

However, while none of these treatments cure end-stage renal disease, a transplant offers the closest thing to a normal life because the transplanted kidney can replace the failed kidneys. However, it also involves a life-long dependence on drugs to keep the new kidney healthy. Some of these drugs can have severe side effects.

Some kidney patients consider a transplant after beginning dialysis; others consider it before starting dialysis. In some circumstances, dialysis patients who also have severe medical problems such as cancer or active infections may not be suitable candidates for a kidney transplant.

KIDNEY TRANSPLANTATION

The Transplant Surgery Program in the quest to discover new treatments for diseases of the kidney and to improve transplantation outcomes.

Kidneys for transplantation come from two different sources: a living donor or a deceased donor.

The Living Donor

Sometimes family members, including brothers, sisters, parents, children (18 years or older), uncles, aunts, cousins, or a spouse or close friend may wish to donate a kidney. That person is called a "living donor." The donor must be in excellent health, well informed about transplantation, and able to give informed consent. Any healthy person can donate a kidney safely.

Deceased Donor

A deceased donor kidney comes from a person who has suffered brain death. The Uniform Anatomical Gift Act allows everyone to consent to organ donation for transplantation at the time of death and allows families to provide such permission as well. After permission for donation is granted, the kidneys are removed and stored until a recipient has been selected.

Living Donor Kidney Transplantation

Living donor kidney transplants are the best option for many patients for several reasons.

- Better long-term results
- No need to wait on the transplant waiting list for a kidney from a deceased donor
- Surgery can be planned at a time convenient for both the donor and recipient
- Lower risks of complications or rejection, and better early function of the transplanted kidney

Any healthy person can donate a kidney. When a living person donates a kidney the remaining kidney will enlarge slightly as it takes over the work of two kidneys. Donors do not need medication or special diets once they recover from surgery. As with any major operation, there is a chance of complications, but kidney donors have the same life expectancy, general health, and kidney function as most other people. The kidney loss does not interfere with a woman's ability to have children.

Potential Barriers to Living Donation

- Age < 18 years unless an emancipated minor
- Uncontrollable hypertension
- History of pulmonary embolism or recurrent thrombosis
- Bleeding disorders

- Uncontrollable psychiatric illness
- Morbid obesity
- Uncontrollable cardiovascular disease
- Chronic lung disease with impairment of oxygenation or ventilation
- History of melanoma
- History of metastatic cancer
- Bilateral or recurrent nephrolithiasis (kidney stones)
- Chronic Kidney Disease (CKD) stage 3 or less
- Proteinuria > 300 mg/d excluding postural proteinuria
- HIV infection

If a person successfully completes a full medical, surgical, and psychosocial evaluation they will undergo the removal of one kidney. The surgery is performed under general anesthesia, uses very small incisions, a thin scope with a camera to view inside of the body, and wand-like instruments to remove the kidney. Compared with the large incision operation used in the past, laparoscopic surgery has greatly improved the donor's recovery process in several ways:

- Decreased need for strong pain medications
- Shorter recovery time in the hospital
- Quicker return to normal activities
- Very low complication rate

The operation takes 2-3 hours. Recovery time in the hospital is typically 1-3 days. Donors often are able to return to work as soon as 2-3 weeks after the procedure.

Occasionally the kidney needs to be removed through an open incision in the flank region. Prior to the use of the laparoscopic technique, this surgery was the standard for the removal of the donated kidney. It involves a 5-7 inch incision on the side, division of muscle and removal of the tip of the twelfth rib. The operation typically lasts 3 hours and the recovery in the hospital averages 4-5 days with time out of work of 6-8 weeks.

Although laparoscopy is increasingly used over open surgery, from time to time, the surgeon may elect to do an open procedure when individual anatomic differences in the donor suggest that this will be a better surgical approach.

The quality and function of the kidneys recovered with either technique work equally well. Regardless of technique all donors will require lifelong monitoring of their overall health, blood pressure and kidney function.

Potential Living Donor

Near related donor or genetically related donor: These include all the genetically related family members like grandparents, parents, siblings, children and grand parents. For this the donor and the recipient needs to provide the relationship proof along with the HLA typing test (*which has to be done in Max Hospital only*.)

Spousal Donor: Spouse can also be the competent donor. A husband can donate his kidney to his wife willingly and vice versa (*provided they are married before the recipient required the*

renal transplantation).They have to provide their marriage certificate for approval of their legal formalities.

Unrelated Donor: These include all those relatives of the patients who are not directly related but are biologically related. It includes paternal and maternal uncles and aunts andcousins (first and second).Since they are not genetically related they have to provide legally accepted documentary proof of their relationships.The relationship the donor has to the recipient has evolved over the years. The chances of rejection are comparatively higher in these cases.

Transplant Evaluation Process

Before the transplant, a set of medical investigations and legal formalities need to be done. A transplant coordinator assesses the tests and procedures for evaluation, and then approves the case for fixing committee meeting.Potential donors are carefully evaluated on medical and psychological grounds. This ensures that the donor is fit for surgery and has no disease which brings undue risk or likelihood of a poor outcome for either the donor or recipient. Regardless of the type of kidney transplant-living donor or deceased donor-special blood tests are needed to find out what type of blood and tissue is present. These test results help to match a donor kidney to the recipient.

MEDICAL INVESTIGATIONS

Blood Type Testing

The first test establishes the blood type. There are four blood types: A, B, AB, and O. Everyone fits into one of these inherited groups. The recipient and donor should have either the same blood type or compatible ones, unless they are participating in a special program that allow donation across blood types. The list below shows compatible types:

- If the recipient blood type is A Donor blood type must be A or O
- If the recipient blood type is B Donor blood type must be B or O
- If the recipient blood type is O Donor blood type must be O
- If the recipient blood type is AB Donor blood type can be A, B, AB, or O

The AB blood type is the easiest to match because that individual accepts all other blood types.

Blood type O is the hardest to match. Although people with blood type O can donate to all types, they can only receive kidneys from blood type O donors. For example, if a patient with blood type O received a kidney from a donor with blood type A, the body would recognize the donor kidney as foreign and destroy it.

Tissue Typing

The second test, which is a blood test for human leukocyte antigens (HLA), is called tissue typing. Antigens are markers found on many cells of the body that distinguish each individual as unique. These markers are inherited from the parents. Both recipients and any potential donors have tissue typing performed during the evaluation process.

To receive a kidney where recipient's markers and the donor's markers all are the same is a "perfect match" kidney. Perfect match transplants have the best chance of working for many years. Most perfect match kidney transplants come from siblings.

Although tissue typing is done despite partial or absent HLA match with some degree of "mismatch" between the recipient and donor.

Crossmatch

Throughout life, the body makes substances called antibodies that act to destroy foreign materials. Individuals may make antibodies each time there is an infection, with pregnancy, have a blood transfusion, or undergo a kidney transplant. If there are antibodies to the donor kidney, the body may destroy the kidney. For this reason, when a donor kidney is available, a test called a crossmatch is done to ensure the recipient does not have pre-formed antibodies to the donor .

The crossmatch is done by mixing the recipient's blood with cells from the donor. If the crossmatch is positive, it means that there are antibodies against the donor. The recipient should not receive this particular kidney unless a special treatment is done before transplantation to reduce the antibody levels. If the crossmatch is negative, it means the recipient does not have antibodies to the donor and that they are eligible to receive this kidney.

Crossmatches are performed several times during preparation for a living donor transplant, and a final crossmatch is performed within 48 hours before this type of transplant.

Serology

Testing is also done for viruses, such as HIV (human immunodeficiency virus), hepatitis, and CMV (cytomegalovirus) to select the proper preventive medications after transplant. These viruses are checked in any potential donor to help prevent spreading disease to the recipient.

Other tests include:

- USG abdomen
- X-ray Chest
- PSA (in males)
- Echocardiography
- DTPA scan

LEGAL FORMALITIES

In Max Hospital all the legal formalities are done as per the rules of Transplantation of Human Organs Act 2014 (THOA). According to it the compatible donor can only be the relative of the recipient, it can be near relative, spouse or genetically not related relatives. Near relatives and spouse can donate the kidney provided they are medically compatible

without the permission of the Government.A genetically not related relative needs the permission from the Government for transplantation approval.

As per THOA, there are different forms for each category of relative, which needs to be duly signed by the recipient and donor, and should get attested by the notary.

FORM 1: in case of near relatives.

FORM 2: in case of spousal donor.

FORM 3: donor other than near relative.

*FORM 4:*medical fitness certificate.

FORM 5:For certification of genetic relationship of living donor with recipient.

*FORM 6:*For spousal living donor*(to be filled by competent authority and AuthorizationCommittee, of the hospital or district or state in case of foreigners)*

*FORM 7:*For organ or tissue pledging*(To be filled by individual of age 18 year or above*

*FORM 8:*For Declaration cum consent*(To be filled by near relative or lawful possessor of brain-stem dead person)*

*FORM 9:*For unclaimed body in a hospital or prison*(To be completed by person in lawful possession of the unclaimed body)*

FORM 10: For certification of brain stem death

*FORM 11:*APPLICATION FOR APPROVAL OF TRANSPLANTATION FROM LIVING DONOR*(To be completed by the proposed recipient and the proposed living donor by the board of medical experts certifying brain-stem death)*

*FORM 17*Certificate of Renewal of Registration(To be given by the appropriated authority on the letter head)

FORM 18:Certificate by the Authorization Committee of Hospital (If Hospital Authorization committee is not available then the Authorization Committee of the district/State) where the Transplantation has to take place(To be issued on the letter head)

FORM 19:Certificate by competent authority [as defined at rule 2(c)] For Indian near relative, other than spouse, cases (In case of spousal donor, Form 6 will be applicable)

FORM 20:Verification certificate in respect of domicile status of recipient or donor [To be issued by tehsildar or any other authorized officer for the purpose (required only for the donor - other than near relative or recipient if they do not belong to the state where transplant hospital identified for operation is located)]

Apart from the forms a set of affidavit has to be made for every transplant case by the recipient, donor and the donor close relative, so as to ensure the donor gives informed consent and is not coerced.

Work-up of living Donor

1- Detailed history and examination. Enquire about family history of renal disease and diabetes. Ask for sensitivity to iodine. Ensure blood pressure recording are made regularly.
2- Psychiatry and gynecology clearance (in female).
3- Undertake following investigations
   a- Hematology: Hb. WBC, platelets, fibrinogen and clotting screening

   b- Biochemistry: Serum creatinine, blood urea, blood sugar, uric acid, Na,K,Ca,P, LFT,cholesterol and triglyceride,

   c-Urine: Mid-stream urine for routine & microscopy with culture,

   d- Serology: ABO typing, HLA typing, Hep B, Hep C, CMV,HIV, Sr. PSA (in male) Serum for cross match and mixed lymphocyte culture

   e- ECG, ECHO- cardiology clearance (if required)

4- Radiology: Chest X-ray, CT angiography.
5- DTPA renal scan to assess global and differential GFR

Pre-operative work-up of Recipient

History and examinations: Enquire any recent infection and date of last dialysis. Enquire about urine output. Detail enquiry of any voiding dysfunction. If diabetic insulin doses, Record peripheral pulses and presence of bruits. Go for Doppler study for femoral and iliac vessel if dialysis done through femoral vessel in past. Details of drug intake, history of previous blood transfusion.

Investigations:

1- Hematology: Hb, WBC, Platelets
2- Biochemistry: Urea, creatinine and electrolyte, LFT, blood sugar, triglycerides and cholesterol
3- Serology: Cross match two unit of blood
4- HLA typing and cross match within a week preferably with 72 hrs of renal transplantation
5- Virology; Hep B, Hep C, CMV,HSV,HIV,VZV
6- Bacteriology: Throat swab, Skin and nose swab
7- Radiology: X-ray chest, MCU if voiding dysfunction, USG abd
8- ECG, Echo-cardiogram to assess ejection fraction

9- Cardiac and anesthetist consultation before transplantation.

Counseling of patient

Transplant co-coordinator should spend time with patients. Explain whole procedure. Term rejection may come may in post operative period it does not mean kidney is not working. Some time kidney may go into sleep(Acute tubular necrosis). It is not a panic situation and such kidney will recover in 2-3 weeks time. She/he should discuss about immuno-supression and approximate cost incurred in maintenance immuno-supression.

COMMITTEE MEETING:

Depending on the case the committee meeting is fixed by the transplant coordinator. There are two types of committee meeting, internal and external.

Internal committee: This is done for the cases in which the donor is either a near relative orspouse. Members of the meeting are

External committee: This isdone for the cases in which the donor is not genetically related nor spouse. The members of this committee are

Paying for organs is illegal and a serious offence, hence the authorities also seek to ensure that a donation has not resulted from a financial transaction.

METHODOLOGY:

Type of study:

- Qualitative study
- Descriptive study
- Cross sectional study

Variables:

- Dependent variables:

1. Number of visits by patient
2. Starting date of medical investigation
3. Date of Report collection
4. Legal proceedings

- Independent variables: number of Patients undergoing renal transplantation.

Study time line: 5 weeks.

Study area: Max Super Specialty Hospital

Study population: Domestic patients and donors undergoing renal transplant in Max Super Specialty Hospital

Inclusion criteria: Domestic patients from all states of Indian nationality undergoing renal transplant in Max Hospital, Saket.

Exclusion criteria: All International patient patients.

Sampling:

- Sampling procedure- Accidental non probability sampling.
- Sample size- 20

Data collection:

- Technique: Direct observation of operations
- Tool: Written descriptions of observations.
- Data entry: manually
- Data type: primary
- Data source: Max Super Specialty Hospital,Saket,NewDelhi.

ANALYSIS:

Laboratory Tests TAT				
S.No.	**Time**	**Stage I**	**Stage II**	**Stage III**
1	15 min - 30min	ECG	S.Cholestrol/TG/LDL	Psychiatry Clearance
				PAC clearance
2	2 hours	RFT		
		LFT		
		TSH/iPTH		
		Urine - R		
		- M		
		PT/INR		
		APTT		
		Glucose - Fasting/Routine		
		Urine R/E		
3	3 hours	CBC	Ca/Phos./Alk. Phosp./uric acid	
		ESR	PSA (in males)	
		HIV/HbsAg/Anti HCV		
4	4 hours	Blood Group		
		Anti A/B Titres		
5	>4 hours-24 hours	CMV IgG, IgM	Echocardiography	Iron/TIBC/Ferritin
		Anti Hbs Antibody Titres	Gynae Clearance	CT Renal Angiography
	(1 day)	HbA1c		
		24 hours urine protein		
		USG Abdomen		
		X-ray chest		
		DTPA scan		
6	48 hours	Urine C/S		HLA Cross match
	(2 days)			

7	72 hours			HLA Typing	
	(3 days)				
8	96 hours	HCV RNA PCR		Varicella Zoster - IgG	
	(4 days)				- IgM
				EBV – IgG	
				- IgM	
total time		4 days	1 day	4 days	

S.no.	Steps	No. of days for each step
1.	Approval for renal transplantation	1
2.	Medical formalities with report collection(including all three stages)	6
3.	Legal formalities	3
4.	Approval by transplant coordinator	1
5.	Internal meeting	1
6.	Total time	12

DISCUSSION:

- Medical investigation is not followed stage wise by the patients.

The patients are not properly informed about all the stages of medical tests, the order in which test has to be done. This is mainly due to the improper communication between the patient and the healthcare information facilitators (mainly doctor's secretaries). Many a times patient has been told to get the selected test of all three stages done at once, because of which they get confused regarding rest of the investigations and hence consumes more time to get all the test completed as per the list. Because of getting few of costly test of stage 2 and stage 3 completed prior to the completion of entire stage 1 and they incur heavy monetary losses when the donor is rejected. And again with a new donor they have to undergo the same procedure all over again.

Hence all the medical investigations should be segregated based on time and priority to avoid this delay.

- Sometimes the delay to proceed to next step occurs because of patients unavailability.

This is because the patients either don't know when he needs to show up or because of some patient side delay. Working on patient side is not in the hands of the health care facilitators but on our side we can streamline the complete scheduling and inform the patient before with exact date and time regarding when and what for patient has to come next.

- Legal formalities are one of the major reasons of delay. Incomplete information and understanding of the legal formalities is the cause of this delay. Because of lack of proper understanding the patients makes small mistakes in the legal papers and he has get them made once again, which leads to delay in completion of legal file.also the legal formalities has to be done in the court/notary office outside the hospital, which also increases the time taken for the completion of legal file.

For this delay, the information providers should first make the patient understand the complete legal formalities properly with the main areas of mistakes, so that patient remains carefully while getting these done. Information providers should show them a dummy legal file so that patients know what, hoe and in what manner he should get his legal file completed.

- There is no proper schedule of the meetings because of which the patient has to wait even though his legal and medical formalities have been completed. Patient wastes time, energy & money for asking about the date and time of the meeting. This prolongs the turnaround time and also increases the patient dissatisfaction level.

For this delay, there should be a proper and fixed time for the meetings and patients should be informed about this schedule during the initial phase of their medical and legal formalities. This will not only save the time wasted for waiting for meeting schedule but will also act as a deadline for the patients & make them active towards getting everything complete on time. This will indirectly work on the delay from patient's side.

Also, there should be more and fixed number of cases per meeting.

- Hence, to work on this delay, coordination between the patient and the facilitators should be improved, making a clear understanding of the legal formalities and medical investigation and all other necessary information, thereby reducing the overall turnaround time.

ETHICAL CONSIDERATIONS:

- Clearance from competent committee of hospital.
- Informed consent of doctors and nurses and regulatory bodies of hospitals.
- Confidentiality and privacy will be maintained.
- Autonomy: respect the right and dignity of the respondents.
- Beneficiaries towards welfare of the people.

AREAS OF IMPROVEMENT:

- ✓ Medical investigations should be segregated based on time and priority.
- ✓ Streamline scheduling
- ✓ Legal formalities should be made clear to recipient so that small mistakes which take long time for improvement could be avoided.
- ✓ Meeting should be conducted frequently with more no. of cases per meeting.
- ✓ There should be proper and fixed schedule for meeting.
- ✓ Improve Coordination
- ✓ Complete process (including medical and legal procedures) should be made clear to the patient in the beginning only.

WORK PLAN:

Weeks / Activity	FIRST	SECOND	THIRD	FOURTH	FIFTH
Initial discussions					

Review of literature					
Preparation of guidelines &tool					
Data collection					
Analysis					
Draft report					
Final report					

ANNEXURES

FORM 1

For organ or tissue donation from identified living near related donor

(to be completed by him or her)

(See rules 3 and 5(3) (a))

My full name (proposed donor)
is……
and this is my photograph

Photograph of the Donor
(Attested by Notary Public
across the photo after affixing)

My permanent home address
is……..
……Tel:
……..

My present address for correspondence is
……
…..
……..……....
……Tel:…….....
Date of birth ……..…… (day/month/year)

I enclose copies of the following documents: (attach attested photocopy of at least two of following relevant documents to indicate your near relationship):

□ Ration/Consumer Card number and Date of issue and place:……
and/or
□ Voter's I-Card number, date of issue, Assembly constituency……
and/or
□ Passport number and country of issue……
and/or
□ Driving License number, Date of issue, licensing authority……..
and/or
□ Permanent Account Number (PAN)……..
and/or
□ AADHAAR No. …….
and/or
□ Any other valid proof of identity and address reflecting near relationship
……

I authorise removal for therapeutic purposes and consent to donate my ……
(Name of organ/tissue) to my relative …….. (Specify son/daughter/father/mother/ brother/sister/grandfather/grand-mother/grand-son/grand-daughter), whose particulars are as follows and name is……. and who was born on……..
…… (day/month/year):

Photograph of the Recipient
(Attested by Notary Public

across the photo after affixing)

The copies of following documents of recipient are enclosed (attach attested photocopy of at least two relevant documents to indicate your near relationship):

□ Ration/Consumer Card number and Date of issue and place:……..
and/ or
□ Voter's I-Card number, date of issue, Assembly constituency……..
and/or
□ Passport number and country of issue…….

and/ or
□ Driving License number, Date of issue, licensing authority……..

and/or

□ Permanent Account Number (PAN)
……

and/or

□ AADHAAR No (Issued by Unique Identification Authority of India).
and/or
□ *Any* other valid proof of identity and address reflecting near relationship
……
…..

I solemnly affirm and declare that:

Sections 2, 9 and 19 of The Transplantation of Human Organs Act, 1994 have been explained to me and I confirm that:

1. I understand the nature of criminal offences referred to in the sections.
2. No payment as referred to in the sections of the Act has been made to me or will be made to me or any other person.
3. I am giving the consent and authorisation to remove my …….. (name of organ/tissue) of my own free will without any undue pressure, inducement, influence or allurement.
4. I have been given a full explanation of the nature of the medical procedure involved and the risks involved for me in the removal of my …….. (name of organ)/tissue). That explanation was given by …… (name of registered medical practitioner).
5. I understand the nature of that medical procedure and of the risks to me as explained by that practitioner.
6. I understand that I may withdraw my consent to the removal of that organ at any time before the operation takes place.
7. I state that particulars filled by me in the form are true and correct to the best of my knowledge and belief and nothing material has been concealed by me.

…….. ……
……
Date Signature of the prospective donor

(Full Name)

Note: To be sworn before Notary Public, who while attesting shall ensure that the person/persons swearing the affidavit(s) signs(s) on the Notary Register, as well.

FORM 2

For organ or tissue donation by living spousal donor

(To be completed by him/her)

(See rules 3, 5(3) (a) and 5(3) (d))

My full name (proposed donor) is
…….....
and this is my photograph

Photograph of the Donor
(Attested by Notary Public across the photo after affixing)

My permanent home address
is……..
…… Tel:
……

My present address for correspondence is
…….....
……. Tel:
……

Date of birth ……..…….(day/month/year)

I authorize removal for therapeutic purposes and consent to donate my ……. (Name of organ) to my husband/wife…….. ……. whose particulars are as follows and full name is……. ……. and who was born on
…… (Day/month/year):

Photograph of the Recipient
(Attested by Notary Public
across the photo after affixing)

I enclose copies of the following documents **(attach attested photocopy of at least two of following relevant documents to indicate the spousal relationship):**

□ Ration/Consumer Card number and Date of issue and place:……
and/or
□ Voter's Identity-Card number, date of issue, Assembly constituency……
and/or
□ Passport number and country of issue……
and/or
□ Driving License number, Date of issue, licensing authority……..
and/or
□ Permanent Account Number (PAN)
…….....
and/or
□ AADHAAR No. (Issued by Unique Identification Authority of India)
……..
and/or

□ Any other proof of identity and address establishing spousal relationship
……
..

I submit the following as evidence of being married to the recipient:-

(a) A certified copy of a marriage certificate
OR
(b) An affidavit of a 'near relative' confirming the status of marriage to be sworn before Class-I Magistrate/Notary
Public.

(c) Family photographs

(d) Letter from Head of Gram Panchayat / Tehsildar / Block Development Officer/Member of Legislative

Assembly/Member of Legislative Council (MLC)/Member of Parliament with seal certifying factum and status
of marriage.

OR

(e) Other credible evidence

I solemnly affirm and declare that sections 2, 9 and 19 of the Transplantation of Human Organs Act, 1994 (42 of 1994), have been explained to me and I confirm that

1. I understand the nature of criminal offences referred to in the sections.

2. No payment of money or money's worth as referred to in the Sections of the Act has been made to me or will be made to me or any other person.

3. I am giving the authorisation to remove my …….. (Organ) and consent to donate the same, of my own free will without any undue pressure, inducement, influence or allurement.

4. I have been given a full explanation of the nature of the medical procedure involved and the risks involved for me in the removal of my …….. (organ). That explanation was given by …… (name of registered medical practitioner).

5. I understand the nature of that medical procedure and of the risks to me as explained by that practitioner.

6. I understand that I may withdraw my consent to the removal of that organ at any time before the operation takes place.

7. I state that particulars filled by me in the form are true and correct to to the best of my knowledge and nothing material has been concealed by me.

…….. ……
Signature of the prospective donor Date Date
(Full Name)

Note: To be sworn before Notary Public, who while attesting shall ensure that the person/persons swearing the affidavit(s) signs(s) on the Notary Register, as well

FORM 3

For organ or tissue donation by other than near relative living donor

(To be completed by him/her)

(See rules 3, 5(3) (a) and 5(3) (e))

My full name is …….
and this is my photograph

Photograph of the Donor
(Attested by Notary Public
across the photo after affixing)

My permanent home address is
…… Tel:
……..
……
…..

My present address for correspondence is ……...
…….
……..
Tel:…….....

Date of birth ……..……. (day/month/year)

I enclose copies of the following documents: (attach attested photocopy of at least two of following relevant documents to prove your identity):

□ Ration/Consumer Card number and Date of issue and place:……
(Photocopy attached)

and/or

□ Voter's I-Card number, date of issue, Assembly constituency……
(Photocopy attached)

and/or

□ Passport number and country of issue……
(Photocopy attached)

and/or

□ Driving Licence number, Date of issue, licensing authority…….
(Photocopy attached)

and/or

□ PAN…….....
.....
□ AADHAAR No……

and/or

□ Other proof of identity and address
……

Details of last three years income and vocation of donor (enclose documentary evidence)
……
……
……

I authorize removal for therapeutic purposes and consent to donate my…….
(Name of organ/tissue) to a person whose full name is ……. and who was born on…… (day/month/year) and whose particulars are as follows:

Photograph of the Recipient
(Attested by Notary Public across the Photo after affixing)

(attach attested photocopy of at least two relevant documents to prove identity of recipient)

□ Ration/Consumer Card number and Date of issue and place:……
(Photocopy attached)

and/or

□ Voter's I-Card number, date of issue, Assembly constituency……
(Photocopy attached)

and/or

□ Passport number and country of issue……
(Photocopy attached)

and/or

□ Driving Licence number, Date of issue, licensing authority…….
(Photocopy attached)

and/or

□ PAN…….....
.....

and/or

□ AADHAAR No.
……

and/or

□ Other proof of identity and address ……

I solemnly affirm and declare that sections 2, 9 and 19 of the Transplantation of Human Organs Act, 1994 (42 of 1994), have been explained to me and I confirm that

1. I understand the nature of criminal offences referred to in the Sections.

2. No payment of money or money's worth as referred to in the Sections of the Act has been made to me or will be made to me or any other person.

3. I am giving the consent and authorisation to remove my …….. (name of organ/tissue) of my own free will without any undue pressure, inducement, influence or allurement.

4. I have been given a full explanation of the nature of the medical procedure involved and the risks involved for me in the removal of my …….. name of organ/tissue). That explanation was given by…… (name of registered medical practitioner).

5. I understand the nature of that medical procedure and of the risks to me as explained by the practitioner.

6. I understand that I may withdraw my consent to the removal of that organ at any time before the operation takes place.

7. I state that particulars filled by me in the form are true and correct to the best of my knowledge and nothing material has been concealed by me.

…….. ……
…….
Signature of the prospective donor Date Date
(Full Name)

Note: To be sworn before Notary Public, who while attesting shall ensure that the person/persons swearing the affidavit(s) signs(s) on the Notary Register as well.

FORM 4

For certification of medical fitness of living donor

(To be given by the Registered Medical Practitioner)

[See proviso to rule 5(3)(b)]

I, Dr…….. possessing qualification of …….. registered as

medical practitioner at serial no. …….. by the……
Medical

Council, certify that I have examined Shri/ Smt. / Km. ……. S/o, D/o, W/o
Shri

…… aged …… who has given informed consent for donation of his/her

…….. (Name of the organ) to Shri/Smt./Km …….. who is a

'near relative' of the donor/other than near relative of the donor and has been approved by the competent

authority or Authorisation Committee (as the case may be) and it is certified that the said donor is in

proper state of health, not mentally challenged * and is medically fit to be subjected to the procedure of

organ or tissue removal.

Place: …… ……
……

Signature of Doctor
Seal

Date: …….

Photograph of the Donor
(Attested by doctor)

Photograph of the recipient
(Attested by the doctor)

The signatures and seal should partially appear on photograph and document without disfiguring the face in photograph

* In case of doubt for mentally challenged status of the donor, the Registered Medical Practitioner may get the donor examined by psychiatrist.

FORM 5

For certification of genetic relationship of living donor with recipient

(To be filled by the head of Pathology Laboratory certifying relationship)

[See rules 5(3)(c) and 18(3)]

I, Dr. /Mr. /Mr/Miss. …….. working as ……. at

…….. and possessing qualification of …… certify that Shri/ Smt./

Km…….. S/o, D/o, W/o
Shri/Smt……..…

aged …….…. the donor and Shri/ Smt. ……..…….…… S/o, D/o, W/o

Shri/Smt……..…… aged …… the prospective recipient of the organ to be donated

by the said donor are related to each other as brother/sister/mother/father/son/daughter, grandmother,

grandfather, grandson and granddaughter as per their statement. The fact of this relationship has been

established / not established by the results of the tests for DNA profiling. The results of the tests are

attached.

Signature

(To be signed by the Head of the

Laboratory)

Seal

Place ……

Date ……..

FORM 6

For spousal living donor

(to be filled by competent authority and AuthorisationCommittee,of the hospital or district or state in case of foreigners)*

[See rule 18(2)]

I, Dr./Mr./Mrs/Miss. ……..possessing qualification of ……
registered as medical practitioner at serial No. ……by the ……..Medical Council, certify that:-

Mr…….S/o……aged…… ……..

resident of …….and Mrs……D/o,

W/o……aged……..resident
of……..

…….. are related to each other as spouse according to the

statement given by them and their statement has been confirmed by means of following evidence before

effecting the organ removal from the body of the said Shri/Smt/…….
(Applicable only in the cases where considered necessary).

OR

In case the Clinical condition of Shri/Smt……. mentioned above is such that

recording of his/her statement is not practicable, reliance will be placed on the documentary evidence(s).

(mention documentary
evidence(s)here).....

a. Marriage certificate indicate date of marriage

b. Marriage photographs

c. Date when transplantation was advised by the hospital (to be compared with duration of marriage):

d. Number and age of children and their birth certificates

e. Any other document
Signature of competent authority/Authorisation committee in case of foreigners along with Seal/Stamp*

Place ……

Date …….
*Director or Medical Superintendent or In Charge of the hospital or the internal committee of the hospital formed for the purpose.as defined under the rules of Transplantation of Human Organ Act, 1994(42 of 1994).

FORM 7

For organ or tissue pledging

(To be filled by individual of age 18 year or above)

[See rule 5(4) (a)]

ORGAN(S) AND TISSUE(S) DONOR FORM

(To be filled in triplicate)

Registration Number (To be allotted by Organ Donor Registry)…….

I……S/o,D/o,W/o……aged……
…

……and date of birth …….resident
of…….....

……in the presence of persons

mentioned below hereby unequivocally authorise the removal of following organ(s) and/or tissue(s), from

my body after being declared brain stem dead by the board of medical experts and consent to donate the

same for therapeutic purposes.

Please tick as applicable

(Following tissues can also be donated after brain stem death as well as cardiac death)

Heart	Corneas/Eye Balls
Lungs	Skin
Kidneys	Bones
Liver	Heart Valves
Pancreas	Blood Vessels
Any Other Organ (Pl. specify) _____	Any other Tissue (Pl. specify) _____
All Organs	All Tissues

My blood group is (if known)……

Signature of Pledger.....

Address for correspondence……

Telephone No.……

Email: ……

Dated:……..

(Note: In case of online registration of pledge, one copy of the pledge will be retained by pledger, one by the institution where pledge is made and a hard copy signed by pledger and two witnesses shall be sent to the nodal networking organisation.)

(Signature of Witness 1)

1.Shri/Smt./Km……S/o,D/o,W/o……
……aged…….resident of..... Telephone No..... …… Email:.....

(Signature of Witness 2)

2.Shri/Smt./Km……S/o,D/o,W/o…… ……aged…….resident of …… Telephone No.....Email:..... ……is a near relative to the donor as ……

Dated…….

Place ……..

Note: (i) Organ donation is a family decision. Therefore, it is important that you discuss your decision with family members and loved ones so that it will be easier for them to follow through with your wishes.

(ii) One copy of the pledge form/pledge card to be with respective networking organisation, one copy to be retained by institution where the pledge is made and one copy to be handed over to the pledger.

(iii) The person making the pledge has the option to withdraw the pledge.

FORM 8

For Declaration cum consent

(To be filled by near relative or lawful possessor of brain-stem dead person)

[See rules 5(1)(b), 5(4)(b) and 5(4)(d)]

DECLARATION AND CONSENT FORM

I……S/o,D/o,W/o…… aged…….resident of ……in the presence of persons mentioned below, hereby declare that:

1. I have been informed that my relative (specify relation).....
S/o,D/o,W/o……aged…….has been declared brain-stem dead /dead.

2. To the best of my knowledge (Strike off whichever is not applicable):

a. He/She. (Name of the deceased)..... had / had not, authorised before his/her death, the removal of..... (Name of organ/tissue/both) of his/her body after his/her death for therapeutic purpose. The documentary proof of such authorisation is enclosed/not available

b. He/She. (Name of the deceased)..... had not revoked the authority as at No. 2 (a) above (If applicable).

c. There are reasons to believe that no near relative of the said deceased person has objection to any of his/her organs/tissue being used for therapeutic purposes.

3. I have been informed that in the absence of such authorisation, I have the option to either authorise or decline donation of organ/tissue/both including eye/cornea of..... (Name of the deceased) for therapeutic purposes. I also understand that if corneas/eyes are not found suitable for therapeutic purpose, then may be used for education/research.

4. I hereby authorise / do not authorize removal of his/her body organ(s) and/or tissue(s), namely *(Any organ and tissue/ Kidney /Liver /Heart /Lungs /Intestine /Cornea /Skin /Bone /Heart Valves /Any other; please specify)*…….. for therapeutic purposes. I also give permission for drawing of a bloodsample for serology testing and am willing to share social/behavioural and medical history to facilitate properscreening of the donor for safe transplantation of the organs/ tissues.

Date…….

Signature of near relative /person in lawful possession of the dead body, and address for correspondence*.

Place …….. Telephone No.……..Email: ……

* in case of the minor the declaration shall be signed by one of the parent of the minor or any near relative authorized by the parent. In case the near relative or person in lawful possession of the body refuses to sign this form, the same shall be recorded in writing by the Registered Medical Practitioner on this Form.

(Signature of Witness 1)

1.Shri/Smt./Km.……S/o,D/o,W/o…… ……aged…….resident of.....
Telephone No.....Email: .....

(Signature of Witness 2)

2.Shri/Smt./Km……S/o,D/o,W/o……
……aged…….resident of
…….
Telephone
No.....Email:.....

FORM 9

For unclaimed body in a hospital or prison

(To be completed by person in lawful possession of the unclaimed body)

[see rule 5(1)(b)]

I……S/o,D/o,W/o……

aged…….resident of ……having lawful possession of

the dead body of
Shri/Smt./Km……

S/o,D/o,W/o…… aged…….resident of……...

…….and having known that no person has come forward to claim

the body of the deceased after 48 hours of death and there being no reason to believe that any person is

likely to come to claim the body I hereby, authorise removal of his/her body organ(s) and/or tissue(s),

namely……..for therapeutic purposes.

Signature, Name, designation and Stamp of person in lawful possession of the dead body.

Dated…….Place……..

Address for correspondence…….....
…….....
.....

Telephone No.....Email.....

(Signature of Witness 1)

1.Shri/Smt./Km……S/o,D/o,W/o……
……

aged…….resident of.....

Telephone No.....Email .....

(Signature of Witness 2)

2.Shri/Smt./Km……S/o,D/o,W/o……
……

aged…….resident of …… Telephone No.....

Email …….

FORM 10

For certification of brain stem death

(To be filled by the board of medical experts certifying brain-stem death)

[See rules 5(4)(c) and 5(4)(d)]

We, the following members of the Board of medical experts after careful personal examination hereby certifythat
Shri/Smt./Km…….
aged about …… son of /wife of / daughter of …….
Resident of
……
….
is dead on account of permanent and irreversible cessation of all functions of the brain-stem. The tests carried out by us and the findings therein are recorded in the brain-stem death Certificate annexed hereto.

Dated…… …….. Signature……..

1. R.M.P.-Incharge of the Hospital In which brain-stem death has occurred.
2. R.M.P. nominated from the panel of Names sent by the hospitals and approved by the Appropriate Authority.

3. Neurologist/Neuro-Surgeon
4. R.M.P. treating the aforesaid deceased person

(where Neurologist/Neurosurgeon is not available, any Surgeon or Physician and Anaesthetist or Intensivist, nominated by Medical Administrator Incharge from the panel of names sent by the hospital and approved by the Appropriate Authority shall be included)

BRAIN-STEM DEATH CERTIFICATE

(A) PATIENT DETAILS……

1. Name of the patient:
Mr./Ms…….
S.O./D.O./W.O.
Mr./Ms…….
Sex……..Age……

2. Home Address:
…….

…….

…….

3. Hospital Patient Registration Number (CR No.):
…….

4. Name and Address of next of kin or
person…….
responsible for the patient
……..
(if none exists, this must be specified)
……..

……..

……..

5. Has the patient or next of kin agreed
……

to any donation of organ and/or tissue?
……

6. Is this a Medico-legal Case? Yes….....No….....

(B) PRE-CONDITIONS:

1. Diagnosis: Did the patient suffer from any illness or accident that led to irreversible brain damage? Specify details…….
……
……
……
……
…

Date and time of accident/onset of illness……

Date and onset of non-reversible coma…….....

2. Findings of Board of Medical Experts:

First Medical Examination Second Medical Examination

(1) The following reversible causes of coma have been excluded:

Intoxication (Alcohol)

Depressant Drugs

Relaxants (Neuromuscular blocking agents)

Primary Hypothermia

Hypovolaemic shock

Metabolic or endocrine disorders

Tests for absence of brain-stem functions

(2) Coma

(3) Cessation of spontaneous breathing

(4) Pupillary size

(5) Pupillary light reflexes

(6) Doll's head eye movements

(7) Corneal reflexes (Both sizes)

(8) Motor response in any cranial nerve distribution, any responses to stimulation of face, limb or trunk.

(9) Gag reflex

(10) Cough (Tracheal)

(11) Eye movements on caloric testing bilaterally.

(12) Apnoea tests as specified.

(13) Were any respiratory movements seen?
……
…..
Date and time of first testing:
……..
Date and time of second testing:
……

This is to certify that the patient has been carefully examined twice after an interval of about six
hours and on the basis of findings recorded above,

Mr./Ms…….is declared brain-stem dead.

Date:

Signatures of members of Brain Stem Death (BSD) Certifying Board as under:

1. Medical Administrator Incharge of the hospital
2. Authorised specialist.
3. Neurologist/Neuro-Surgeon
4. Medical Officer treating the Patient.

Note.

I. Where Neurologist/Neurosurgeon is not available, then any Surgeon or Physician and Anaesthetist or
Intensivist, nominated by Medical Administrator Incharge of the hospital shall be the member of the board of medical experts for brain-stem death certification.

II. The minimum time interval between the first and second testing will be six hours in adults. In case of children 6 to 12 years of age, 1 to 5 years of age and infants, the time interval shall increase depending on the opinion of the above BSD experts.

III. No.2 and No.3 will be co-opted by the Administrator Incharge of the hospital from the Panel of experts
(Nominated by the hospital and approved by the Appropriate Authority).

FORM 11

APPLICATION FOR APPROVAL OF TRANSPLANTATION FROM LIVING DONOR

(To be completed by the proposed recipient and the proposed living donor)

[See rules 5(3) (d), 5(3)(e) and 10]

To be self attested across the affixed photograph without disfiguring face

Photograph of the Donor

To be self attested across the affixed photograph without disfiguring face

Photograph of the recipient

Whereas I …….……..…….. S/o, D/o, W/o, Shri/Smt. ……..…..…... aged ……. residing at……...
……... have been advised by my doctor ……. that I am suffering from…….
…… and may be benefited by transplantation of……..
……... into my body.

And whereas I ……. S/o, D/o, W/o, Shri/Smt.
……... aged …… residing at……
…….. by the following reason(s):-

a) by virtue of being a near relative i.e. ……

b) by reason of affection/attachment/other special reason as explained below :-
…….
…..
…….
…..
…….
…..

I would therefore like to donate my (name of the organ) ……... to Shri/Smt. ……

We ……. ……. and ……. …….
(Donor) (Recipient)

hereby apply to competent authority / Authorisation Committee for permission for such transplantation to be carried out.

We solemnly affirm that the above decision has been taken without any undue pressure, inducement, influence or allurement and that all possible consequences and options of organ transplantation have been explained to us.

Instructions for the applicants:-

1. Form 11 must be submitted along with the completed Form 1 or Form 2 or Form 3 as may be applicable.

2. The applicable Form i.e. Form 1 or Form 2 or Form 3 as the case may be, should be accompanied with all documents mentioned in the applicable form and all relevant queries set out in the applicable form must be adequately answered.

3. Completed Form 5 must be submitted along with the laboratory report.

4. The doctor's advice recommending transplantation must be enclosed with the application.

5. In addition to above, in case the proposed transplant is between unrelated persons, appropriate evidence of vocation and income of the donor as well as the recipient for the last three years must be enclosed with this application. It is clarified that the evidence of income does not necessarily mean the proof of income tax returns, keeping in view that the applicant(s) in a given case may not be filing income tax returns.

6. The application shall be accepted for consideration by the competent authority / Authorisation Committee only if it is complete in all respects and any omission of the documents or the information required in the forms mentioned above, shall render the application incomplete.

7. When the donor is unrelated and the donor and/or recipient belong to a State/Union Territory other than the State/Union Territory, where the transplant is intended to take place, then the Tehsildar or the officer authorised for the purpose of the domicile state of the donor or recipient as the case may be, would provide the verification certificate of domicile of donor/recipient as the case may be as per Form 20. The approval for transplantation would be considered by the authorisation committee of the State/District/hospital (as the case may be) where the transplantation is intended to be done. Such verification Certificate will not be required for near relatives including cases involving swapping of organs (permissible between near relatives only).

We have read and understood the above instructions.

Signature of the Prospective Donor

Signature of Prospective Recipient

Address for correspondence:

Address for correspondence:

Date:

Date:

Place:

Place:

FORM 17

Certificate of Renewal of Registration

(To be given by the appropriated authority on the letter head)

[See rule 25(2)]

This is with reference to the application dated…….. from…… (Name of the hospital/tissue bank) for renewal of certificate of registration for performing organ(s)/tissue(s) retrieval/transplantation/banking under the Transplantation of Human Organs Act, 1994 (42 of 1994).

After having considered the facilities and standards of the above-said hospital/tissue bank, the Appropriate Authority hereby renews the certificate of registration of the said hospital/tissue bank for a period of five years.

This renewal is being given with the current facilities and staff shown in the present application form. Any

reduction in the staff and/or facility must be brought to the notice of the undersigned.

Place…… Signature of Appropriate Authority…….

Date…….. Seal……

FORM 18

Certificate *by the Authorisation Committee of Hospital (If Hospital Authorisation committee is not available then the Authorisation Committee of the district/State) where the transplantation has to take place*
(To be issued on the letter head)

[See rules 16 and 23]

.

This is to certify that as per application in form-10 for transplantation of _____(Name of

Organ/tissue) from living donor, other than near relative/ swap donation cases/ all foreigner under the

Transplantation of Human Organs Act, 1994 (42 of 1994) *submitted on…….. by the donor*

and recipient, whose details and photographs are given below, along with their identifications and

verification documents, the case was considered after the personal interview of donor and recipient (if

medically fit to be interviewed) and their relatives as applicable by the Authorisation Committee in the

meeting held on ……dated……..

Details of Recipient	*Details of Donor*
Name……..	*Name:……..*
Age……..	*Age ……..*
Sex ……	*Sex ……..*
Father / Husband Name ……	*Father / Husband name……..*
…… ……..	
Adddress: Address:	
…….. ……..	
…… ……..	
Hospital Reg. No ……...	*Hospital Reg. No……*

Relation of donor with Recipient ……

Recipient *Donor*

(Photo of recipient and donor must be signed and stamped across the photo after affixing)

Permission is granted, as to the best of knowledge of the members of the committee, donation is out of

love and affection and there is no financial transaction between recipient and donor and there is no

pressure on / coercion of the donor.

Permission is withheld pending submission of the following documents……...

*……
…..*

Permission is not granted for the following reasons……..

*……
…..*

(Member) (Member) (Member) (Member)

Name and Designation Name and Designation Name and Designation Name and Designation

(Member) (Member) (Sign of Chairman with stamp)

*Health Secretary DHS or Nominee Name and Designation
Or Nominee Name and Designation*

Date and place……..

** In case of SWAP transplants, details are to be annexed*

FORM 19

Certificate by competent authority [as defined at rule 2(c)] For Indian near relative, other than spouse,
cases (In case of spousal donor, Form 6 will be applicable)

[See rule 5(3)(c)]

(Format for the decision of Competent Authority)

This is to certify that as per application in Form-11 for transplantation of_____(Name

of Organ or Tissue) from living donor who is a near relative of the recipient under the Transplantation of

Human Organs Act, 1994(42 of 1994), submitted on……. by the donor and recipient,

whose details and photographs are given below, along with their identifications and verifications

documents, the case was considered after the personal interview of donor and recipient (if medically fit to

be interviewed) by the competent authority in the meeting held on ……

Details of Recipient

Details of Donor

Name……..
Name:……

Age…….

Age …….

Sex ……

Sex …….

Father or Husband Name ……..
name…….....
…… ……
……

Father or Husband

Adddress:

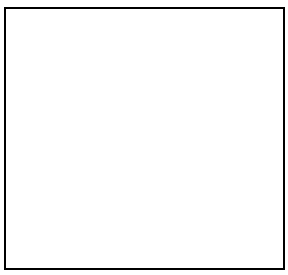
Address:

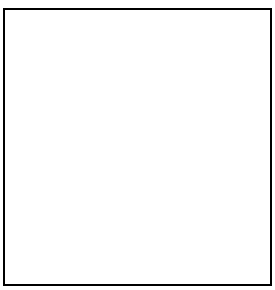
…… …
……..
…… …
……..
…….. …
……..

Hospital Reg. No …….. …..
No……

Hospital Reg.

Relation of donor with Recipient
……





Recipient

Donor

(Photo of recipient and donor must be signed and stamped across the photo after affixing)

Permission is granted, as to the best of knowledge of the members of the committee, donation is out of

their being near relative and there is no financial transaction between recipient and donor and there is no

pressure on / coercion of the donor.

Permission is withheld pending submission of following documents……

……..

Permission is not granted for the following reasons……

……..

……..

(Signature and stamp of competent authority)

Date and place…….

FORM 20

Verification certificate *in respect of domicile status of recipient or donor*
[To be issued ***by tehsildar or any other authorised officer*** *for the purpose (required only for the donor - other than near relative or recipient if they do not belong to the state where transplant hospital identified for operation is located)]*

[See rule 14]

Part I (To be filled by applicant donor or recipient separately in triplicate)

In reference to application for verification of domicile status for donation of _____(Name

of organ/Tissue) from living donor (other than near relative) or recipient under Transplantation of Human

Organ Act, 1994 (42 of 1994), submitted on (date)……. by the applicant donor or

recipient,with following details and photograph , along with his or her identification and domicile status for

verification

Details of Applicant Recipient or Donor

Name……

Age……..

Sex …….

Father or Husband Name ……
……..

Address:
……..
……
……

Hospital Reg. No ……
……

(Recent Photo of Applicant must be signed by him or her across the photo after affixing it)

The detail of my donor or recipient are as under and I have enclosed his or her self-signed recent photograph :

Name……

Age……

Sex ……

Father or Husband Name ……..

Address:
……..
……

Hospital Reg. No ……

Signature of Applicant
Enclosure : Self signed copy of the donor or recipient for the applicant (to be enclosed)

Part II (To be filled by the certificate issuing authority):

The above request has been examined and it is certified that the domicile status of the applicant donor or

recipient mentioned as above has been verified as under:

Name …… ……..Son or Daughter or Wife of ……

resident of village or ward ……..,……,Tehsil or Taluka……...District…….State

or UT……..

and found correct or incorrect
……
……

Date …… Place …… Authorised Signatory

Reference No

Name and Designation

Office Stamp

2. The authorised signatory will hand over this verification certificate to the applicant or his or her

representative for submission to the Chairperson of the Authorisation Committee of the hospital or district

or state (as the case may be), where transplantation has to take place.

3. The authorised signatory shall keep one copy of the above verification certificate for his records and

send a copy to the Secretary, Health and Family Welfare of the State Government (Attention Appropriate

authority for organ transplant) for information.

4. In case of any suspicion of organ trading, the authorised signatory mentioned above or Appropriate

Authority of the state may inform police for making enquiry and taking necessary action as per the

Transplantation of Human Organs Act, 1994 (42 of 1994).

FORM 21

Certificate of relationship between donor and recipient in case of foreigners

(To be issued by the Embassy concerned)

[See rule 20(a)]

The embassy of _____(Name of Country) in India, is in receipt of an

application received
from_____(Name of

Organ donor and recipient) on _____(Date) recommended by_____(Name

of Government Department of country of origin) for facilitation of donation of_____(Name

of Organ or Tissue) from living donor _____(Name of donor) to the recipient

_____(Name of recipient) for therapeutic purposes under the Transplantation

of Human Organ Act, 1994(42 of 1994). The details of donor and recipient and photographs are as given

below.

Details of Recipient	Details of Donor
Name…….	Name:…….
Age…….	Age …….
Sex ……	Sex …….
Father or Husband Name ……. . name…….	Father or Husband
…… ……	…….
Adddress:	Address:
…… ……	……..
…… ……	……..
…….. ……	……..

Recipient

Donor

(Photo of recipient and donor must be signed and stamped across the photo after affixing)

1, This is to certify that relationship between donor and Recipient is……

2. The authenticity of following enclosed identification and verification documents is certified

a._____
___

b._____
___

_____
___

'No objection certificate' is granted, as to the best of my knowledge, the donor is donating out of love and

affection or affection and attachment towards the recipient, and there is no financial transaction between

recipient and donor and there is no pressure on or coercion of the donor.

(Signature of Senior Embassy Official)
Date:

Place:
Name:…….

Designation:……...

FORWARDING LETTER

To,

The Chairman
Authorization Committee for THO
Max Super Speciality Hospital
Saket

New Delhi-110017

Dear Sir,

I am forwarding herewith a file to Authorization Committee for Transplantation of Human Organ. The patient _____ is suffering from …….and needs transplant of kidney.

1. Mr./Mrs./Ms _____is a donor and close relation of the patient as established by the documentary proofs required by the Committee.

2. The donor is related to recipient as_____ on the basis of documentary proofs.

I have seen the file personally. The file contains _____ pages and all the pages are numbered. The first page in the file is the Checklist and second is Authorization Committee form and the subsequent pages are as per the checklist.

Hope the Committee will find the file in order.

(Consultant)

Photo
Attested by
Notary

Rs 10 stamp paper

Recipient Affidavit

I _____, age-__ /sex, s/o, w/o _____, R/o _____ ,do hereby solemnly affirm and declare as under:

That, my both kidneys have been damaged and are not functioning for the last _____ month/year and I am on regular dialysis since then. I am undergoing medical treatment at Max Hospital Saket.

That I have been advised kidney transplantation forthwith.

That in the existing circumstances _____ who is my_____ due to closeness and out of his/her love and affection has offered to donate his/her one kidney to me, without any coercion or pressure from any of my family members or any other person.

That I am, seriously ill and my health is deteriorating day by day and I am undergoing dialysis for last _____year. Under these circumstances, the DGHS Govt. of India is requested to kindly grant me permission for accepting kidney from the donor mentioned above for transplantation of the kidney in my body. A joint application from the donor and the recipient(deponent) complete in all respects on prescribed form is also attached herewith.

(deponent)

VERIFICATION

I, the above named deponent, do hereby solemnly affirm and declare that the above statement given is true and correct to best of my knowledge and belief and nothing has been concealed there from.

(deponent)

Photo

Attested by

Notary

Rs 10 stamp paper

PATIENT'S AFFIDAVIT

I _____, age- /sex, s/o,d/o,w/o _____
r/o_____ ,do hereby solemnly affirm and declare as under:

That, my both kidneys have been damaged and are not functioning for the last ___ years and I am on regular dialysis since then. I am undergoing medical treatment at Max Hospital Saket.

That I have been advised kidney transplantation forthwith.

That I am appearing in front of authorization committee for first time.

(deponent)

VERIFICATION

I, the above named deponent, do hereby solemnly affirm and declare that the above statement given is true and correct to best of my knowledge and belief and nothing has been concealed there from.

(deponent)

Photo
Attested by
Notary

Rs 10 stamp paper

RELATED DONOR

I _____, age- /sex, s/o,d/o,w/o _____
r/o_____

, do hereby solemnly affirm and declare as under:

That_____ s/o,d/o,w/o _____ is suffering from ESRD and is undergoing regular dialysis since _____ years.

That Iam donating my one kidney to save the life of my _____ namely without any coercion or pressure either from my family members or any other person.

That I authorize for removal of one of my kidney and this authority/consent has been given by me out of my free will without undue pressure, inducement, influence, allurement and the purpose of the above donation and all possible complications, side-effects, consequences, options have been explained to me and well understood by me before giving any authority/consent.

(deponent)

VERIFICATION

I, the above named deponent, do hereby solemnly affirm and declare that the above statement given is true and correct to best of my knowledge and belief and nothing has been concealed there from.

(deponent)

Photo
Attested by
Notary

Rs 10 stamp paper

DONOR CLOSE RELATIVE

I,_____ s/o,d/o,w/o _____r/o_____
-_____do hereby solemnly affirm and declare as under:

That _____ s/o,d/o,w/o _____ is suffering from ESRD and is undergoing regular dialysis since _____ years and requires kidney transplant.

That I have no objection in my _____ namely _____ donating one kidney to his/her_____ namely_____
.

(deponent)

VERIFICATION

I, the above named deponent, do hereby solemnly affirm and declare that the above statement given is true and correct to best of my knowledge and belief and nothing has been concealed there from.

(deponent)

DECLARATION BY THE DOCTOR

(In case of unrelated donor)

I, Dr……., do hereby certify that I have examined the patient **Mr. …… ……..**who is suffering from CKD-V with …….
And need kidney transplantation surgery which is the only cure for his disease.

The prospective donor is ……**……..**who is being sent to Authorization Committee for approval for donating the organ.

However I have screened all the close relatives that is- spouse parents, brother, sisters and children (whichever applicable) and found them unfit on the following grounds, the documentary evidence of which is/are also annexed:

S No.	Name	Relationship with the recipient	Age & Sex	Blood group	Reason for rejection	Annex
1.						
2.						
3.						
4						
5						
6						
7						
8						
9						

BLOOD GROUP OF THE PATIENT: ……..

Signature/Name with seal(Surgeon) Signature/Name with seal(Physician)

LETTER FOR ISSUE OF N.O.C. UNDER THOA

Date:

To,
The Chairman
State Authorization Committee for Organ Transplantation
(name of the state's mandal)

Sub: Issuance of N.O.C under Transplantation of Human Organs Act

Dear Sir/Madam,

Mr./Mrs./Ms……s/o, d/o, w/o, Mr./ Mrs./……..
R/o…….. is undergoing treatment at Max Super Speciality Hospital, Saket, New-Delhi for ESRD.He/She needs kidney transplantation as curative procedure. His/Her…….Mr./ Mrs./Ms.
……..wants to donate his/her one kidney to Mr./Mrs./Ms…… to save his/her life.

As per Transplantation of Human Organ Act, 1994 a patient requires "No Objection Certificate" from State Authorization Committee of their native state. Therefore, we would request you to issue "No Objection Certificate" under the said Transplantation of Human Organ Act, 1994 to carry out the renal transplant surgery at Max Super Speciality Hospital, Saket, New-Delhi 110017. Please consider their case and help them accordingly.

Thanking You
Yours truly,

RECIPIENT CHECK LIST

Stage – I

1. Blood Group	
2. CBC,ESR, RFT	
3. USG abdomen	
4. Urine – R/M	
5. Urine C/S	
6. PT/INR	
7. APTT	
8. Dialysis Serology Panel	
9. SGOT, SGPT, S. Bil, S.Prot/Alb	
10. ECG	
11. X Ray Chest	
12. HCV-RNA (Qualitative) 13. Sugar- F-PP, HbA1c	

Stage – II

1. Echo Cardiography / Stress Echo Cardiologists Clearance	

Stage – III

1. S.TSH, iPTH, Calcium, Phosphorus, S.iron / ferittin / TIBC /S.Cholesterol,	

Triglycerides, LDL	
2. CMV – IgG IgM	
3. EBV – IgG (optional) IgM	
4. Varicella Zoster – IgG (optional) IgM	
4. HLA Typing and Cross match	
5. PAC Clearance	
6. Urology Clearance	

DONOR CHECK LIST

Stage – I

1. Blood Group	
2. CBC	
3. BUN	
4. S.Creatinine	
5. S – Na+	
K+	
6. TSH	
7. SGOT, SGPT, S.Bil, Sugar – R+F, HbA1c	
8. Urine – R/E	
9. 24 hrs Urine Protein or Urine spot P/C ratio	
10. PT/INR	
11. APTT	
12. CMV-IgG -IgM	
13. Dialysis Serology Panel	
14. USG abdomen	
15. DTPA scan	
16. ECG	
17. X Ray chest	

Stage – II

1. S.Cholesterol, Urine C/S, S.Prot/Alb, Uric acid, PSA (in males)	
2. Calcium, Phosporus, Alk. phos.	
3. Echo Cardiography	
4. Gynae Clearance	
5. HLA Typing/ Cross Match	

Stage – III

1. CT Renal Angio	
2. Psychiatry Clearance	
3. PAC & Urology Clearance	

REQUEST FORM –HLA TYPING ( ) / CROSS MATCHING ( )

(Please take prior appointment contact: +911140633645)

Patient Details:

Name: ----------

S/O, W/O, H/O:----------

Age/Sex:----------

Max ID:----------

Contact No:----------

Address: ----------

Blood Group:---------- **Patient's Photograph**

(Attested by Doctor)

<u>Donor Details:</u>

Name: ----------

S/O,W/O,H/O:----------

Age/Sex:----------

Max ID:----------

Contact No:----------

Address: ----------

Blood Group:---------- **Donor's Photograph**

(Attested by Doctor)

Relation of Patient with Donor (s):----------

Consent (We confirm above said relationship)

---------- **----------**

Sign/Right Thumb **Sign/Right Thumb**

Impression (Patient) **Impression (Donor)**

CLINICAL DETAILS OF PATIENT:

No. of Dialysis / Last Dialysis:

Details of Blood Transfusion:

Any Medication (e.g. Immunosuppressant's):

S.No	Condition	Comments (Yes/No)
1.	Hepatitis B	
2.	Hepatitis C	
3.	HIV	
4.	Diabetes	

FAMILY TREE (PEDIGREE):

SEAL & SIGNATURE OF REFERRING DOCTOR

PROJECT

A STUDY ON

INFECTION PREVENTION & CONTROL

IN

TRANSPLANT UNIT.

Study started on 12th May 2014

Under the guidance of DR.GAURAV SHARMA

Submitted By: -

Dr. Sonam Mittal

PGDHM-18

IIHMR University

Jaipur, Rajasthan

TITLE:

To study the level of infection prevention and control in the transplant unit of Max Super specialty Hospital, Saket, New Delhi.

INTRODUCTION:

The initial successful kidney transplantation in humans, the field of renal transplantation has made significant progress. Patient survival and graft survival have improved tremendously. Our armamentarium of immunosuppressive drugs and antimicrobial agents has expanded, as our understanding of their effects and proper utilization. Enhanced surgical techniques also improved the overall survival of kidney recipients. However, infectious complications remain a major cause of morbidity and mortality in this patient population. In this study, there is an overview of infections in kidney transplant recipients as per guidelines followed by Max Super Specialty Hospital.

Since the kidney patients are immune-compromised due to the immunosuppressant drugs that are required to decrease risk of rejection, they become more susceptible to infections, hence need to be isolated from others.

The source of infection can be divided into three groups: de novo infections which may arise from organisms colonizing the recipient or from a nosocomial origin, reactivation of latent infections present in the recipient or transmitted with the donor allograft, or contamination of the allograft during the procurement or preservation process. De novo infections occur mostly in the first month and these include UTI, line sepsis, wound infections, and pneumonia. These can be caused by organisms colonizing the recipient‟s skin and/or mucous membranes or by organisms acquired from the hospital environment and which are often resistant to antimicrobial agents. Reactivation of latent infections in the recipient accounts for a number of infections. This includes CMV, tuberculosis, and histoplasmosis. Transmission of infectious agents from the donor occurs, and these may be latent chronic infections or active asymptomatic infections that are transmitted with the allograft. In the setting of immunosuppressant these infections tend to become disseminated and carry a high mortality rate.

RATIONALE OF THE STUDY

Infection control precautions should be tailored to prevent transmission of viruses and pathogenic bacteria within renal transplant patients and settings. In addition to Standard Precautions, more stringent precautions are recommended for renal units because the patient becomes immunocompromised and also there is increased risk of contamination with blood and pathogenic microorganisms.

OBJECTIVE

To assess the level of infection prevention and control in the transplant unit of Max Super specialty Hospital, Saket, New Delhi.

KEY OBSERVATIONS:

HAND HYGIENE PRACTICES

Hand Hygiene Practices

*Antiseptic hand washin*g: Washing hands with soap and water, or other detergents containing an antiseptic agent.

Antiseptic hand rubbing (or hand rubbing): Applying an antiseptic hand rub to reduce or inhibit the growth of microorganisms without the need for an exogenous source of water and requiring no rinsing or drying with towels or other devices.

Hand antisepsis / decontamination / degerming: Reducing or inhibiting the growth of microorganisms by the application of an antiseptic handrub or by performing an antiseptic Handwash.

Handwashing: Washing hands with plain or antimicrobial soap and water.

Hand cleansing: Action of performing hand hygiene for the purpose of physically or mechanically removing dirt, organic material, and/or microorganisms.

Hand disinfection is extensively used as a term in some parts of the world and can refer to antiseptic Handwash, antiseptic handrubbing, hand antisepsis/decontamination / degerming, handwashing with an antimicrobial soap and water, hygienic hand antisepsis, or hygienic handrub. Since disinfection refers normally to the decontamination of inanimate surfaces and objects, this term is not used in these Guidelines.

Surgical hand antisepsis/surgical hand preparation/ presurgical hand preparation: Antiseptic Handwash or antiseptic handrub performed preoperatively by the surgical team to eliminate transient flora and reduce resident skin flora. Such antiseptics often have persistent antimicrobial activity.

Surgical hand scrubs/presurgical scrub: refer to surgical hand preparation with antimicrobial soap and water.

Surgical handrub: refers to surgical hand preparation with a waterless, alcohol-based handrub.

INDICATIONS FOR HAND-HYGIENE:

A. Wash hands with soap and water when visibly dirty or visibly soiled with blood or other body fluids or after using toilet.

B. If exposure to potential spore-forming pathogens is strongly suspected or proven, hand washing with soap and water is preferred means.

C. Use an alcohol based hand rub as the preferred means for routine hand antisepsis in all other clinical situations described in items D(a) to D(e) listed below if hands are not visibly soiled.

If alcohol based hand rub is not obtainable, wash hands with soap and water.

D. Perform hand hygiene:

a) Before and after touching the patient.

b) Before handling an invasive device for patient care, regardless of whether or not gloves are used

c) After contact with body fluids or excretions, mucous membranes, non- intact skin, or wound dressings.

d) If moving from a contaminated body site during care of the same patient.

e) After contact with inanimate surfaces and objects (including medical equipments) in the immediate vicinity of the patient after removing sterile or non sterile gloves.

E. Before handling medications or preparing food perform hand hygiene using an alcohol based hand rub or wash hands with either plain or anti microbial soap and water.

F. Soap and alcohol based hand rub should not be used concomitantly

The concept of "Your Five Moments for Hand Hygiene"

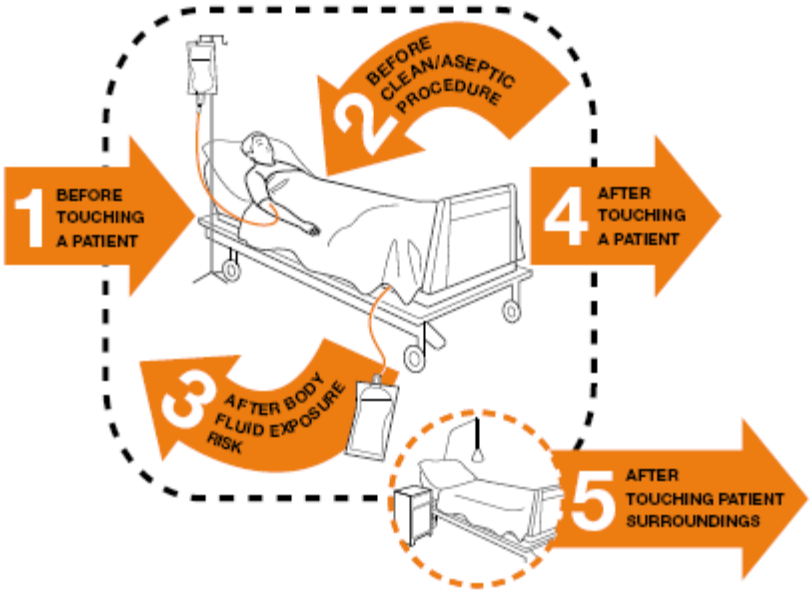
The "Your five moments for hand hygiene" concept proposes to merge the hand hygiene indications recommended by the WHO guidelines on Hand Hygiene on Health Care, into five moments when hand hygiene in required.

The concept attempts to go beyond the long list of health care actions and situations requiring hand hygiene but it helps focus on essential moments embedded within the care sequence that are essential for hand hygiene.

The concept made it easier to understand the moments when there is a risk of germ transmission via the hands to memorize them and to assimilate them into healthcare activities.

The “Your five moments for hand hygiene” are:

1. Before touching a patient.
2. Before clean/aseptic procedure.
3. After body fluid exposure risk
4. After touching a patient
5. After touching a patient surrounding



THE TERMINAL CLEANING OF THE ISOLATION ROOMS

Introduction

The term “Isolation” is the use of infection prevention and control precautions aimed at controlling and preventing the spread of infection. Protective Isolation (reverse barrier nursing) is done where the patient requires protection i.e. they are immunocompromised (as these are particularly vulnerable to infection).

It is equally important to ensure that following the end of isolation, the room is made as clean, and therefore as safe as possible for the next patient requiring care in that room. Due to the variety of specialties across the sites, there may be slight differences regarding the terminal cleaning of rooms following cessation of isolation nursing.

Prior to Room Cleaning: a thorough clean to remove all dirt and dust is not sufficient for rooms in transplant unit since these are isolation rooms. The cleaning of an isolation room should only take place once the patient has vacated the room and possessions have been removed. Staff involved in cleaning the room must wear a disposable apron and gloves. If appropriate, windows should be opened to facilitate through drying of all surfaces and to reduce the smell of hypochlorite solutions. The room may be used for other patients when all surfaces are clean and dry, and the smell of hypochlorite solution (if used) has gone. Leaving

rooms for a period of time is unnecessary since most infections are not spread by an airborne route and bacteria do not survive in significant numbers on surfaces that have been cleaned thoroughly.

Guidelines For Terminal Cleaning:

Wall washing

It is not usually necessary to wash walls routinely following cessation of isolation nursing. However, individual advice should be sought from a member of the Infection Control Team.

Curtains Should be removed prior to cleaning of the room and sent to the laundry via the appropriate route. Clean curtains should be hung on completion of room cleaning.

General Equipment All general equipment (e.g. bed frame, cot sides, locker, bed table, windowsills) and the floor should be cleaned thoroughly with either detergent and water or a solution containing 1000 ppm available Chlorine. Horizontal surfaces, ledges, window frames and curtain tracks, taps, door handles, light switches etc constitute the general equipment and should be cleaned by domestic staff. Bathroom and toilet facilities should be cleaned as above. Shower curtains should be removed for laundering. Rooms may be „double washed" i.e. washed as above and then with detergent and water so that any chlorine residue is removed and the room may be used immediately for another patient.

Clinical Equipment Cleaning alone is an adequate method of decontamination of a wide range of equipment, and cleaning with detergent and water physically removes contamination and many micro-organisms. Equipment should be cleaned safely with detergent and water, and dried thoroughly. Special care should be taken with electrical items, use a damp cloth only. Staff should refer to the Manufacturers" instructions for specialist equipment.

Disposable items must be discarded. If necessary, contact the Infection Control Team for advice on specific items.

All autoclave items should be sealed in the appropriate bags for transfer to CSSD.

Non-clinical Equipment Items such as flower vases should be cleaned with water and detergent then dried thoroughly. Cutlery and crockery should be returned to the kitchen for machine washing.

Mattresses, pillows and beds: Mattresses and pillows should be inspected for signs of damage and tears prior to cleaning which will allow micro-organisms to penetrate the waterproof cover. The outer cover is damaged it must be removed and the pillow sent to the laundry. Those pillows which cannot be laundered, damaged/torn must be disposed of accordingly. The bed mattress should be wiped down with detergent and water or Chorine solution as appropriate. Domestic staff will clean the bed frame as above.

Waste: All waste from the room should be sealed before leaving the room, labeled as biomedical waste, clearly identified, placed in a appropriate biomedical waste bag, and disposed of via the appropriate route.

All linen in the room (regardless of whether or not it has been used) should be sealed before leaving the room, and sent as foul or infected linen.

Cleaning Equipment: Mop heads should be either disposable or laundered at thermal disinfection temperatures and dried after use. Cleaning cloth should be of the disposable kind. Personnel The Senior Nurse in charge of the shift has overall responsibility for ensuring that the terminal cleaning of an isolation room is undertaken both efficiently and effectively. Rooms should be empty of all equipment prior to cleaning. Curtains should be removed first and replaced last. Items which are open, such as toilet tissues etc. should be discarded.

Used linens: bed sheet, pillow cover, blanket Patient clothes, room curtains, towels etc in red bag and name it as infected linen. Dip the Oxygen humidifier and suction bottle in buckets containing freshly prepared Clean N Sept solution (prepare by dissolving 20 tab in 1 liter of water) or 2% hypochlorite solution after washing it with soap and water. Clean the metal stem and cap of suction bottle first with soap and water and then wipe it with duster dipped in Clean N Sept soln. or 2% hypochlorite solution. Clean the patient bed, bed side locker, cardiac table, sofa, bed side rack all other foamites with freshly prepared 2% sodium hypochlorite solution. Disinfect the bed mattress with bacillol spray. Disinfect the electronic equipments like cardiac monitor, pulseoxymeter, ECG machine etc with bacillol spray. Clean the room thrice with each time freshly prepared 2% hypochlorite solution. At last floor moping with 1% hypochlorite solution and washroom cleaning is done. Surveillance swabs from different places inside the room (Patient bed, cardiac table, bed side locker, bed mattress, I/V Stand) are sent for laboratory investigation.

PREVENTION OF CATHER ASSOCIATED UTI

Introduction

Catheter associated urinary tract infections (CAUTI) are one of the most frequent infection today and comprises 40% of all institutionally acquired infections. Most of these infections follow instrumentation of the urinary tract, mainly urinary catheterization. Although not all catheter-associated urinary tract infections can be prevented, it is believed that a large number could be avoided by proper management of the indwelling catheter.

Catheter Use: Urinary catheters should be inserted only when necessary and left in place for as long as necessary. They should not be used solely for the convenience of patient-care personnel. The silver and hydro gel-coated Foley catheter is recommended to reduce the risk of urinary tract infections.

Catheter insertion:

Thoroughly wash hands or use antimicrobial hand gel before inserting the catheter. Catheters should be inserted using aseptic technique and sterile gloves and equipment. Gloves, drapes, sponges, an appropriate antiseptic solution for peri-urethral cleansing, and a single-use packet of lubricant jelly should be used for insertion.

As small a catheter as possible, consistent with good drainage, should be used to minimize urethral trauma. Indwelling catheters should be properly secured after insertion to prevent movement and urethral traction .Ensure that only properly trained persons who know the correct technique of aseptic catheter insertion and maintenance are given this responsibility. In the non-acute care setting, clean (i.e., non-sterile) technique for intermittent catheterization is an acceptable and more practical alternative to sterile technique for patients requiring chronic intermittent catheterization

Urinary catheter maintenance: A sterile, continuous, closed drainage system should be maintained .The catheter and the drainage tubing should not be disconnected unless the catheter must be irrigated. If breaks in aseptic technique, disconnection, or leakage occur, the collecting system should be replaced using aseptic technique after disinfecting the catheter-tubing junction. Unless clinical indications exist (e.g., in patients with bacteriuria upon catheter removal post urologic surgery), do not use systemic antimicrobials routinely to prevent CAUTI in patients requiring either short or long-term catheterization. If the CAUTI rate is not decreasing after implementing a comprehensive strategy to reduce rates of CAUTI, consider using antimicrobial/antiseptic-impregnated catheters. The comprehensive strategy should include, at a minimum, the high priority recommendations for urinary catheter use, aseptic insertion, and maintenance

Specimen collection: Small volumes of fresh urine for examination can be obtained from the sampling port. The port should be disinfected and urine aspirated with a sterile needle and syringe. Obtain large volumes of urine for special analyses (not culture) aseptically from the drainage bag.

Management of obstruction:

If obstruction occurs and it is likely that the catheter material is contributing to obstruction, change the catheter. Further research is needed on the benefit of irrigating the catheter with acidifying solutions or use of oral urease inhibitors in long-term catheterized patients who have frequent catheter obstruction. (No recommendation/unresolved issue).Unobstructed flow should be maintained. (Occasionally, it is necessary to temporarily obstruct the catheter for specimen collection or bladder training).

To achieve free flow of urine:

- The catheter and drainage tube should be kept from kinking.
- The collecting bag should be emptied regularly using a separate collecting container for each patient.(The drainage spigot and the non-sterile collecting container should never come in contact.)
- Poorly functioning catheters should be replaced.
- Collecting bags should always be kept below the level of the bladder. Never place the drainage bag in a place that can contaminate it; e.g., the floor.
- Irrigation should be avoided unless obstruction is anticipated (e.g., as might occur with bleeding after prostatic or bladder surgery); closed continuous irrigation may be used to prevent obstruction. Intermittent irrigation should only be used to relieve

obstruction due to clots, mucus, or other causes. A large-volume sterile syringe and sterile irrigant should be used and then discarded. Aseptic technique should be used. The catheter-tubing junction should be disinfected before disconnection

Perineal care

Do not clean the peri-urethral area with antiseptics to prevent CAUTI while the catheter is in place. Routine hygiene (e.g., cleansing of the meatal surface during daily bathing or showering) is appropriate. Do not use powder because it will cause drying of the meatus. Clean catheter-meatal junction after every incontinent stool.

Other issue:

- Urine measuring devices and specific gravity manometers should be:
- Rinsed well after each use and store dry.
- For individual patient use -labeled with the patient's name and bed/room number.
- Avoid changing the indwelling catheter unnecessarily
- If the catheter is draining well, leave it in place. Removal of the catheter will not remove organisms from the bladder
- Never culture the catheter tip when the catheter is removed as it does not predict organisms causing the UTI and may lead to unnecessary treatment.
- Change the drainage bag when you insert a new catheter. Also, change the drainage bag when it becomes stained, clouded by sediment, or leaks. Encourage fluids within limits the patient can medically tolerate. Flush the urinary system from the inside out, the so-called "natural flush."

NOSOCOMIAL INFECTION

Nosocomial or hospital acquired infections are a major public health problem in hospitals throughout the world. At least 5% of patients entering hospitals will develop a nosocomial infection. Nosocomial infections represent a leading cause of death. Nosocomial infections, such as bacteremias, surgical wound infection, pneumonia and urinary tract infection, are also associated with major morbidity in hospitalized patients. These nosocomial infections add significantly to the expected length of stay for patients. The Study on the Efficacy of Nosocomial Infection Control project, conducted by The Centers for Disease Control, found that up to one third of nosocomial infections can be prevented by an effective infection control program.

Prevention of Nosocomial

- Limit duration of use of intravascular catheters –No advantage to changing catheters routinely
- Maximal barrier precautions for insertion –Sterile gloves, gown, mask, cap, full-size drape –Moderately strong supporting evidence

- Chlorhexidine prep for catheter insertion –Significantly decreases catheter colonization. Disadvantages: possibility of skin sensitivity to chlorhexidine, potential for chlorhexidine resistance

BARRIER PRECAUTIONS WITH PERSONAL PROTECTIVE EQUIPMENT (PPE)- DONNING OF GOWN & GLOVES

Masks, Respiratory Protection, Eye Protection, Face Shields

1. Wearing of mask that covers both the nose and the mouth, and goggles or a face shield are worn by hospital personnel during procedures and patient-care activities to avoid contact transmission of pathogens.

2. The wearing of masks, eye protection, and face shields in specified circumstances to reduce the risk of exposures.

3. A surgical mask generally is to be worn by hospital personnel to provide protection against spread of infectious large-particle droplets that are transmitted by close contact and generally travel only short distances (up to 3 ft)

Gowns and Protective Apparel

1. To be worn to provide barrier protection and to reduce opportunities for transmission of microorganisms in hospitals.

2. Gowns are to worn to prevent contamination of clothing and to protect the skin of personnel from blood and body fluid exposures.

3. Gowns are to be worn by personnel during the care of to reduce the opportunity for transmission of pathogens to the patients or items in their environment to other patients or environments; when gown are worn for this purpose, they are removed before leaving the patient"s environment and the hands are washed.

Use of gloves:

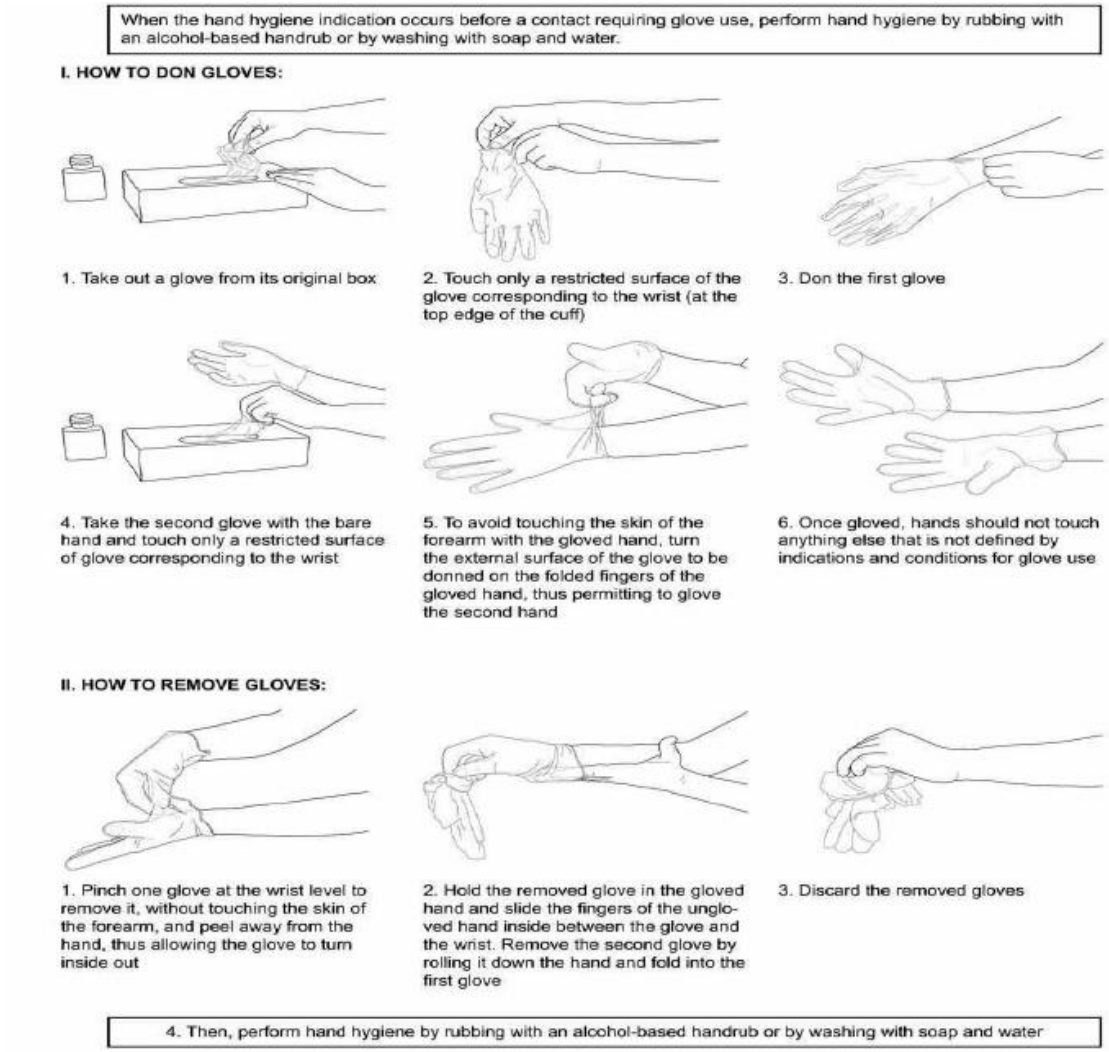
General Recommendation:

- The use of gloves does not replace the need for hand hygiene by either hand rubbing or handwashing.
- Wear glove when it can be reasonably anticipated that contact with blood or other potentially infections materials, mucous membranes or non-intact skin will occur.
- Remove gloves after caring for a patient. Do not use the same pair of gloves for the care of more than one patient.
- When wearing gloves, change or remove gloves during patient care of moving from a contaminated body site to either another body site (including non-intact skin, mucous membrane or medical device) within the same patient or the environment.

- The reuse of gloves is not recommended. In the case of glove reused, implement the safest reprocessing method.

Donning and removing Non-sterile Gloves

When the hand hygiene indication occurs before a contact requiring glove use, perform hand hygiene by rubbing with an alcohol based handrub or by washing with soap and water.

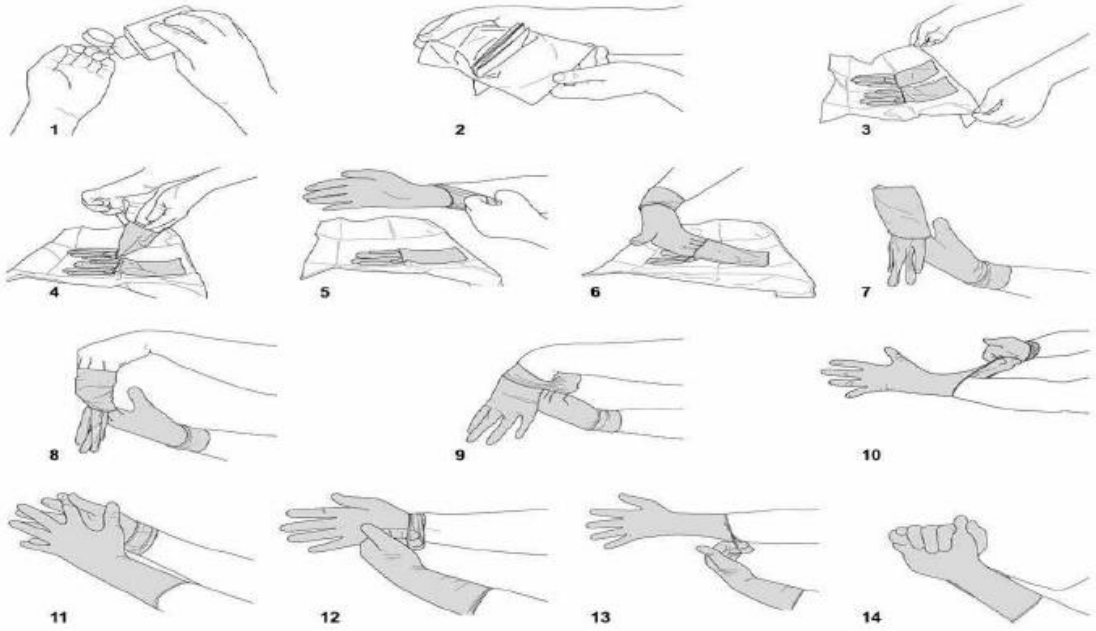


Donning and removing Sterile Gloves

The purpose of this technique is to ensure maximum asepsis for the patient the health-care worker from the patient body fluid(s). To achieve this goal, the skin of the health-care worker remains exclusively in contact with the inner surface of the gloves and has no contact with the outer surface. Any error in the performance of this techniques leads to a lack of asepsis requiring a change of gloves.

The purpose of this technique is to ensure maximum asepsis for the patient and to protect the health-care worker from the patient's body fluid(s). To achieve this goal, the skin of the health-care worker remains exclusively in contact with the inner surface of the glove and has no contact with the outer surface. Any error in the performance of this technique leads to a lack of asepsis requiring a change of gloves.

I. HOW TO DON STERILE GLOVES



1. Perform hand hygiene before an "aseptic procedure" by handrubbing or hand washing.
2. Check the package for integrity. Open the first non-sterile packaging by peeling it completely off the heat seal to expose the second sterile wrapper, but without touching it.
3. Place the second sterile package on a clean, dry surface without touching the surface. Open the package and fold it towards the bottom so as to unfold the paper and keep it open.
4. Using the thumb and index finger of one hand, carefully grasp the folded cuff edge of the glove.
5. Slip the other hand into the glove in a single movement, keeping the folded cuff at the wrist level.

6-7. Pick up the second glove by sliding the fingers of the gloved hand underneath the cuff of the glove.

8-10. In a single movement, slip the second glove on to the ungloved hand while avoiding any contact/resting of the gloved hand on surfaces other than the glove to be donned (contact/resting constitutes a lack of asepsis and requires a change of glove).

11. If necessary, after donning both gloves, adjust the fingers and interdigital spaces until the gloves fit comfortably.

12-13. Unfold the cuff of the first gloved hand by gently slipping the fingers of the other hand inside the fold, making sure to avoid any contact with a surface other than the outer surface of the glove (lack of asepsis requiring a change of gloves).

14. The hands are gloved and must touch exclusively sterile devices or the previously-disinfected patient's body area.

NB Donning surgical sterile gloves at the time of a surgical intervention follows the same sequences except that:

- ✓ It is preceded by a surgical hand preparation.
- ✓ Donning gloves is performed after putting on the sterile surgical gown.
- ✓ The opening of the first packaging (non sterile) is done by an assistant.
- ✓ The second packaging (sterile) is placed on a sterile surface other than that used for the intervention.
- ✓ Gloves should cover the wrists of the sterile gown.

BIOMEDICAL WASTE MANAGEMENT

Bio-Medical Waste : May be defined as "any solid, fluid or liquid waste, including its container and any intermediate product, which is generated during its diagnosis, treatment or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals and the animal waste from slaughter houses or any other like establishments."

NEED FOR BIO-MEDICAL WASTE MANAGEMENT

(a) (Statutory) Legal Obligation: In accordance with the provisions of the Bio-Medical Waste (Management and Handling) Rules 1998, deadline for GMC was 31st December" 1999, by which the rules must be conformed with, failing which legal action can be initiated.

(b) Health hazards associated with improper hospital waste management: A number of hazards and risks are associated with this viz.

* Injuries from sharps to all categories of hospital personnel and waste handlers. * Nosocomial infections in patients from poor infection control and poor waste management. * Risks of infections outside hospitals for waste handlers, scavengers, and (eventually) the general public. * Risks associated with hazardous chemicals, drugs, being handled by persons handling wastes at all levels.

c) Environmental hazards: Improper hospital waste management also results in air, water and soil pollution, especially due to imperfect treatment and faulty disposal methods.

CATEGORISATION OF BIO-MEDICAL WASTES

Bio-Medical waste have been categorized into ten different categories as mentioned in the table below:–

OPTION WASTE CATEGORY WASTE CONTENT

Category No.1 Human Anatomical (human tissues, organs, body Wastes parts)

Category No.2 Animal Wastes (animal tissues, organs, body parts carcasses, bleeding parts, fluid, blood and experimental animals used in research, waste generated by veterinary hospitals, discharge from hospitals, animals houses)

Category No.3 Microbiology & Biotechnology waste (waste from laboratory cultures, stocks or specimens of micro- organisms live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, waste from production of biologicals, toxins, dishes and devices used for transfer of cultures)

Category No. 4 Waste Sharps (needles, syringes, scalpels, blades, glass, etc. that may cause puncture and cuts. This includes both used and unused sharps).

Category No. 5 Discarded Medicines (waste comprising of outdated contaminated and discarded medicines)

Category No. 6 Solid Waste (items contaminated with blood, and body fluids including cotton, dressings, solid linen, plaster casts, linen, beddings, other material contaminated with blood)

Category No. 7 Solid Waste (Wastes generated from disposable items other than the waste sharps such as tubings, catheters, intravenous sets etc.)

Category No. 8Liquid Waste (waste generated from laboratory and washing, cleaning, house-keeping and disinfecting activities)

Category No. 9Incineration Ash (ash from incineration of any bio-medical waste)

Category No.10 Chemical Waste (chemicals used in production of biologicals, chemicals used in disinfection, as insecticides, etc.)

Colour coding instructions for segregation at the point of generation

Yellow Bag

- Anatomical Waste
- Tissues
- Organs
- Body Parts

Red Bag

- Soiled Waste
- Solid Waste
- Blood & body fluid stained dressings, swabs, cotton etc.
- Soiled Plaster casts
- Lab Cultures

Blue Bag

- Plastic Waste
- I/V sets & tubings
- catheters
- syringes
- Vacutainers (without needles)
- Urine Bags
- Blood bags and tubings which are highly contaminated

Black Bag

- Unbroken Glass bottle:100 ml or more than 100 ml (in a separate bag for easy disposal)
- Cytotoxic drugs (To be discarded in separate bin. The bin needs to be labeled with the cytotoxic sticker).
- Discarded Medicines

White bag

- Puncture proof , tamper resistant container
- Needles
- Scalpels Lancets Blades Broken ampoules Glass pieces and small vials <100 ml in the puncture proof container) Syringes with needles coming in contact with body fluids

* Plastic wastes to be autoclaved and shredded / chemically disinfected.

Wastes to be cleared as per periodicity laid down by the hospital: when container is 3/4th f

POSITIVE PRESSURE

In transplant unit the patients are immune-compromised and hence can catch even slightest of infection. To avoid this positive pressure is created within the isolation rooms of the transplant unit. Positive pressure is a pressure within a room which is greater than the pressure outside the room. This is done to ensure that there is no ingress of any organism from the external environment into the closed room. Air will flow out of the room instead of in, so that any microorganisms present outside the room that may infect the patient are kept away. Air is pumped into these rooms through HEPA filters. Air flow of one room is not connected with the other rooms. Each room has a separate supply for air flow through HEPA (High Efficiency Particulate Air) filters. A HEPA filter prevents the spread of airborne bacterial and viral organisms and, therefore, infection. A HEPA filter assures a very high level of protection against airborne disease transmission.

PROJECT

Project on configuration of swap & cadaveric list

Study started on 26th April 2014

Under the guidance of DR.GAURAV SHARMA

Submitted By: -

Dr. Sonam Mittal

PGDHM-18

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Jaipur, Rajasthan

TITLE

A proposal for getting swap and cadaveric list of transplant cases IT enabled and configured into HIS.

INTRODUCTION

A kidney transplant involves taking a kidney from the body of one person and implanting it surgically into the body of someone who has lost kidney function. The transplanted kidney can then perform the function of that person's own kidneys.

Whilst a transplant is not a cure for renal (kidney) failure, it does allow patients to live a more "normal" life than that experienced on dialysis. Patients with a well-functioning transplant have a greater sense of well being and are able to enjoy a lifestyle free of dialysis treatments, although they must continue with their transplant medications.

Kidneys are donated by live donors and deceased donors.

Live Donors

For many years, most live donors were closely related to the potential recipient, such as a brother, sister or parent. Such close relatives were likely to be a close tissue match to the recipient, resulting in excellent outcomes. With the advent of improved immunosuppressive medications, it is now possible to achieve similar outcomes using live donors who are unrelated to the recipient. Spouses, more distant relatives and close friends are sometimes found to have a compatible blood group and tissue matches to the potential recipient. Many live donor transplants are performed using such unrelated donors. It is now also possible for altruistic members of the community to be assessed for their suitability as anonymous live kidney donors. These people are known as "non-directed kidney donors".

Deceased Donors

Kidneys from deceased donors are allocated to the best tissue matched patients on the transplant waiting list. Potential deceased donors are screened for cancer and transmissable viruses and their medical history is fully evaluated. Deceased donors can be heart-beating or non heart-beating.

- **Heart-Beating Donors**

  These donors have suffered severe trauma to the brain either by fatal head injury, such as in a motor vehicle accident or through a cerebral (brain) haemorrhage. In order to be considered as organ donors, these patients must be ventilated in an intensive care unit and medically certified as "brain stem" dead, meaning that all function of the brain has ceased. In other words, life cannot be sustained. Heart beat and lung function are artificially maintained by a respirator. A very small proportion of all deaths in hospitals occur under these conditions.

Many patients have relatives or non-relatives who wish to donate a kidney but are not able to because their blood type or tissue type does not match. In such cases, the donor and recipient are said to be "incompatible."

Live Donor to Deceased Donor Waiting List Exchange

This program is a way for a living donor to benefit a loved one, even if their blood or tissue types do not match. The donor gives a kidney to another patient who has a compatible blood type and is at the top of the kidney waiting list for a "deceased donor" kidney. In exchange, that donor's relative or friend would move to a higher position on the deceased donor waiting list, a position equal to that of the patient who received the donor's kidney.

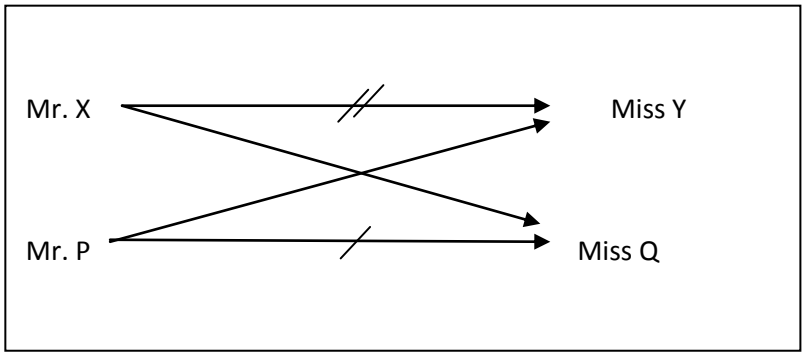
For example, if the donor's kidney went to the fourth patient on the deceased donor waiting list, the recipient would move to the fourth spot on the list for his or her blood group and would receive kidney offers once at the top of the list.

SWAPPING: Paired Exchange Kidney Transplant

This program is another way for a living donor to benefit a loved one even if their blood or tissue types do not match. A "paired exchange" allows patients who have willing but recipients than usually expected.

An example of how this works would be if Mr. X wanted to give her sister Miss Y a kidney, but differences in blood type made it impossible, and Mr. P wanted to give his sister Miss Q a kidney, but differences in blood type made that impossible (see picture below). A paired exchange would be arranged so that Mr. X would donate to Q and Mr. P would donate to Miss Y. The two pairs can thus "exchange" kidneys so that both donors give kidneys and both patients receive kidneys.

That means that two kidney transplants and two donor surgeries will take place on the same day at the same time.



Blood Type Incompatible Kidney Transplant

This is a program that lets patients receive a kidney from a living donor who has an incompatible blood type. To be able to receive such a kidney, patients must undergo several treatments before and after the transplant to remove the harmful antibodies that can lead to rejection of the transplanted kidney.

A special process called plasmapheresis, which is similar to dialysis, is used to remove these harmful antibodies from the patient's blood.

Patients require multiple treatments with plasmapheresis before transplant, and may require several more after transplant to keep their antibody levels down.

Positive Crossmatch and Sensitized Patient Kidney Transplant

This program makes it possible to perform kidney transplants in patients who have developed antibodies against their kidney donors-a situation known as "positive crossmatch."

The process is similar to that for blood type-incompatible kidney transplants. Patients receive medications to decrease their antibody level or they may undergo plasmapheresis treatments to remove the harmful antibodies from their blood. If their antibody levels to their donors are successfully reduced, they can then go ahead with the transplants.

Blood type-incompatible kidney transplants and positive crossmatch/sensitized patient kidney transplants have been successful. Success rates are close to those for transplants from compatible living donors and are better than success rates for deceased donor transplants.

Deceased Donor Kidney Transplantation

When an individual does not have a living donor but is an acceptable transplant candidate, he/she will be placed on a waiting list.Unfortunately, many more patients are medically suitable for transplants than organs available. The waiting times are many years and growing longer. Many patients develop medical and surgical complications while waiting which may prevent them from receiving a deceased donor kidney transplant in the future.

Transplant Success Rates

The success rate of kidney transplantation varies depending on whether the donated organ is from a living donor or a deceased donor as well as the medical circumstances of the recipient. Kidneys from living donors generally last longer. Most kidney losses are due to rejection, but infections, circulation problems, cancer, and return of the original kidney disease can also cause kidney loss.

Success Rate of Kidney Transplantation					
Type of Donor	**1 Year**	**3 Years**	**5 Years**	**10 Years**	
Living Donor	Graft survival	95%	88%	80%	57%
	Patient survival	98%	95%	90%	64%
Deceased Donor	Graft survival	90%	79%	67%	41%
	Patient survival	95%	88%	81%	61%

RATIONALE FOR THE STUDY:

Current Issues in Kidney Transplantation is the widening gap between donation and demand for kidney transplants, with not enough compatible and deceased donors

Currently the organ supply cannot meet the demand and there is no foreseeable end to the problem. Patients wait many years for a transplant. People are dying or becoming medically unsuitable for transplantation as these waiting times grow longer.

To overcome this problem swapping between two cases with incompatible donor can be done. But selection of donors for swapping is a tedious task and hence requires a program which can choose the most compatible donor easily.

OBJECTIVES:

- To get swap and cadaveric list of donors for transplant cases IT enabled and configured into HIS.
- To provide a program for increasing the use of deceased donors and swap cases, thereby enhancing living donation
- To provide recommendations for the assessment and selection of donors (living and deceased).

Interventions and Practices Considered

1. Ethical and legal issues related to kidney donation and transplantation
2. Program to increase the use of deceased donors
3. Program to enhance living donation
4. Kidney donor selection and refusal criteria
    - Deceased donor
    - Living donor

Potential Benefits

General

- Improved standards for kidney donor assessment and selection
- Improved allocation of donor.
- Increased deceased- and live-donation rates.
- Improved outcomes in kidney transplant recipients.

Specific

- Better results (both long- and short-term).
- Consistent early function and faster management
- Avoidance of long waiting time for transplantation
- Emotional gain to donor
- Increases the kidney transplant rate

ALGORITHM

Problem definition:

Program for selection and assessment of the most suitable donor-recipient for swapping is not available, and hence is rigorous and time consuming.

Specification of algorithm:

It is categorised under two heads:

- Inputs: It includes all the details of donors and recipient
- Outputs: It includes the expected outcome out of the inputs entered.

Designed algorithm

	INPUT	OUTPUT
1	**Blood group – different colour coding for different blood group.**	**List of blood groups with different colour coding open up**
2	**Blood group of the recipient is entered**	**A page linked with HIS appears corresponding for that blood group**
3	**Since it is linked with HIS, only max id or phone no.*of the patient is entered.**	**Rest of the details of the patient already entered in HIS appears, with a page asking for the details of the donor.**
4	**Information** of the donor is entered.**	**A drag drop box should appear with the suitable cases with which possible swapping can be done based on the priority.**
5	**Case is choose**	**Complete detail should appear justifying why this case is suitable,with option of accept and reject.**
6	**When the case is finally accepted**	**These cases do not appear for the next time.**

**Mobile no. : That no. should be entered which is entered in HIS as well.it should accept only 10 digits, neither less nor more.*

***Information of donor includes Max id, Name, Age, Sex, Blood group, Mobile no. and a column of notes for any additional important that needs to be considered before selecting the donor for transplantation.*

CONCLUSION:

Getting these swap and cadaveric list of transplant donors IT enabled will increase the number of renal transplant in the hospital and thus reducingthe still-increasing gap between 'supply' and 'demand' for kidney transplants. Hence, reducing the number of people dying because of renal failure and non availability of competent donor.With the increasing success of living-donor transplants, as judged by patient survival, and with the scarcity of deceased donor organs, swapping donor transplants should be encouraged.